CITY OF NORTH BEND

Water System Plan

G&O #19473
August 2020
CITY OF NORTH BEND
KING COUNTY
WASHINGTON

NORTH BEND
easy to reach...hard to leave

WATER SYSTEM PLAN

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STATE OF WASHINGTON
PROFESSIONAL ENGINEER

G&O #19473
AUGUST 2020

Gray & Osborne, Inc.
CONSULTING ENGINEERS
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Appendix U – Correspondence and Approvals
EXECUTIVE SUMMARY

The City of North Bend Water System Plan provides a planning strategy for the City’s water utility over 10- and 20-year planning horizons. The plan has been prepared consistent with Department of Health standards as specified in the Washington Administrative Code (WAC) Chapter 246-290. The plan represents a commitment by the City to pursue and implement the Plan’s recommendations and capital improvements.

Chapters 1 and 2 of this plan provide background data, including a description of existing facilities, service area, service area policies, and projections of population and water use. Chapter 3 presents a description of system design and water quality standards, as well as an analysis of water quality. This chapter also presents a source and storage analysis and concludes with a system-wide capacity analysis. Chapter 4 contains a distribution system analysis, including a hydraulic modeling summary, which identifies and informs necessary distribution system improvements. Chapter 5 contains a water use efficiency program which details conservation and efficient water use goals and measures. Chapter 6 discusses the system operation and maintenance procedures. Chapter 7 presents recommended capital improvements and outlines an implementation schedule. Chapter 8 examines past water system finances and forecasts a budget based on historical data, growth projections, and recommended capital improvements. The eight chapters of this plan are followed by appendices which contain cited and related documentation.

The City has two water sources, Mount Si Springs and the Centennial Well. Each source has its own withdrawal limitations. Mount Si Springs has a minimum bypass requirement stipulating that 3 cubic feet per second of flow must pass over the weir and into the river. The Centennial Well hydraulically influences the Snoqualmie River and, during periods of low instream Snoqualmie River flow, mitigation water must be supplied as a condition of the water right. At present, the City’s sole functioning mitigation source is Hobo Springs. Water is conveyed from Hobo Springs to Boxley Creek, a Snoqualmie River tributary. The City also has an emergency intertie with the neighboring Sallal Water Association.

The City operates three pressure zones, the 594, 710, and 780 Zones. Both sources are located in the 594 Zone. The City operates three storage reservoirs. The Nintendo and I-90 Reservoirs are in the 594 Zone while the Forster Woods Reservoir is located in the 710 Zone. The 710 Booster Pump Station serves the 710 Zone and the 780 Booster Pump Station serves the 780 Zone.

The City’s water retail service area population is approximately 6,625 people and the water system serves a total of 2,610 connections. The City anticipates growth of approximately 2.5 percent over the 10-year planning period and has adequate water rights, source, and storage capacity to meet the water demand projected over the next 10 years. However, the City is at or near its mitigation capacity limits. Mitigation capacity dictates how much water can be withdrawn from the Centennial Well. Unfortunately, during the dry summer months high overall water demand coincides with
a severely limited withdrawal capacity from Mount Si Springs. As a result, the City must depend on the Centennial Well for the majority of its water production. This often coincides with low instream flows in the Snoqualmie River which leads to increased mitigation requirements.

Under present peak summer demand, if a drier summer were to occur, the flows at Hobo Springs would be at or just below those required to properly mitigate water demand. The City must therefore increase its mitigation capacity by implementing two measures.

1. Enact water conservation policies that curb peak season water use, allowing the City to manage demands during dry years and dry seasons. The ability to reduce peak uses would allow for a reduction in water production and the corresponding mitigation demands and would allow the City to keep peak water production within the available mitigation flow.

2. Obtain additional sources for mitigation water in order to provide redundancy and increase overall mitigation capacity. A second or third source of mitigation water would ensure that the City can mitigate Centennial Well use even during periods of low flow in Hobo Springs. This plan is predicated on the City reaching an agreement with Sallal Water Association to obtain additional mitigation water within the next 2 years.

The City is acutely aware of the need to increase the supply and curb the demand of mitigation water and must do so soon. The City plans take action through the following four measures:

1. Continue to improve system efficiency;

2. Control and lower Distribution System Leakage (DSL);

3. Use the recently enacted Water Shortage Plan to decrease the magnitude of maximum day water demand during periods of low mitigation; and

4. Increase and diversity mitigation sources and capacity.

As of 2019, the City’s Distribution System Leakage (DSL) was 25.9 percent with a 3-year rolling average of 22.4 percent, triggering the need for a Water Loss Control Action Plan. This plan is detailed in Chapter 5 along with consumption and production reduction goals which could save the City an estimated 332 million gallons of water between 2021 and 2030.
The Water System Plan contains a list of projects for the City’s 10-year capital improvement plan for the water system. These projects include source improvements, increasing mitigation capacity, upgrading SCADA systems, replacing meters, recoating and upgrading reservoirs, and replacing water mains throughout the system to provide increased reliability, ensure good water quality, lower DSL, and the increase fire flow capabilities to the system. Table E-1 summarizes the recommended capital improvement projects which fall within the Plan’s 10-year planning horizon.

**TABLE E-1**

**Capital Improvement Plan**(1)

<table>
<thead>
<tr>
<th>Project Number</th>
<th>Project Description</th>
<th>Year to be Completed</th>
<th>Estimated Cost(2)</th>
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<tr>
<td>MS-1</td>
<td>Meter Replacement Program</td>
<td>2019-2033</td>
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<td>AC-1</td>
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<td>2028 &amp; 2030</td>
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<td>Golf Course Well Improvements</td>
<td>2020</td>
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<td>Centennial Well Variable Frequency Drive</td>
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<td>Mt Si Spring Air Gap Study</td>
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<tr>
<td>MT-2</td>
<td>Hobo Springs Improvement</td>
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<td>Picket Avenue Northeast</td>
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<td>Source and Storage SCADA and PLC Upgrades</td>
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<td>SO-4</td>
<td>Mt Si Spring Air Gap Project</td>
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<td>D-18</td>
<td>Middle Fork River Crossing</td>
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<td>SO-2</td>
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<td>Sallal Mitigation Intertie</td>
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<td>Booster Pump Station SCADA and PLC Upgrades</td>
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<td>South Fork River Crossing</td>
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<td>D-1</td>
<td>Main Avenue North and West 4th Avenue</td>
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<td>End of East 2nd Street</td>
<td>2027</td>
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<td>0.5 MG I-90 Reservoir Recoating and Improvements</td>
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<td>D-3</td>
<td>Main Avenue North and Sydney Avenue North</td>
<td>2028</td>
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<td>0.75 MG Forster Woods Reservoir Recoating and Improvements</td>
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<td>SE 136th Street and 424th Avenue SE</td>
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</table>

(1) Capital improvement costs from Table 7-2.
(2) All cost estimates are shown in 2020 dollars. ENR CCI= 12,117 (February 2020).
The City will continue to fund capital projects and meet its financial commitments through revenue derived from water sales and connection charges while also exploring alternative funding options. The City’s water fund is projected to be able to meet the operation and maintenance, debt service, and capital project commitments through 2030 with a 6 percent rate increase in 2021, 2024, and 2027. Full financial projections are detailed in Chapter 8. The fund will finish all but 2 of the next 10 years with a surplus of at least $900,000, culminating in a $1,526,035 surplus in 2030.
CHAPTER 1

DESCRIPTION OF THE WATER SYSTEM

WATER SYSTEM OWNERSHIP AND MANAGEMENT

The City of North Bend (City) owns and operates a municipal water system that serves the City as well as portion of the surrounding rural communities. These communities are located on the valley floor between Rattlesnake Ridge to the south and Mount Si to the north. The Washington State Department of Health (DOH) water system identification number is 60100A. A copy of the Water Facilities Inventory Form (WFI) is included as Appendix B. The City is governed by an elected Mayor and City Council. The City’s current mailing address is:

City of North Bend
P.O. Box 896
920 SE Cedar Falls Way
North Bend, Washington 98045

Figure 1-1 shows the City and the surrounding area.

SYSTEM BACKGROUND

HISTORY OF WATER SYSTEM DEVELOPMENT

The following timeline describes the history of the major highlights and improvements made within the North Bend Water Service Area.

- **Late 1940s through the early 1950s:** The City’s first public water system was constructed at Clough Creek watershed near Rattlesnake Mountain. The system consisted of a small dam, with a spillway elevation of 540 feet above mean sea level, and a reservoir for storage. The dam was concrete with approximate dimensions of 55-feet long and 12-feet high at the outside face. The reservoir was contained by the rock walls of a small ravine behind the dam. The reservoir was 120-feet long and varied in width from 25 feet at the dam to a few feet at the upstream end. The estimated storage capacity was 225,000 gallons.

- **1964 – 1965:** Major floods and ensuing landslides deposited large amounts of materials behind the Clough Creek dam and impacted the ability of the reservoir to provide the City with water. The City was forced to enact emergency measures to continue the supply of water to the area. The intake had to be relocated 1,600 feet upstream from the existing facilities.
- **1966**: The City prepared its first Comprehensive Water System Development Plan. This plan discussed significant improvements to the water system of North Bend. The purpose of these improvements, implemented between 1967 and 1968, was to obtain a more reliable and higher quality water source.

- **1967 – 1968**: During this period, the springs on the west side of Mount Si were developed. This project included the construction of a 1,500 gpm source pump station, a transmission main, and a 0.5-MG storage tank located at Clough Creek. Initially, two pumps were located at the pump station. The Clough Creek intake facilities were maintained as an emergency source.

- **1974**: Transmission lines from the Clough Creek Reservoir were relocated during the construction of Interstate 90.

- **1980**: A third pump was installed at the Mount Si pump station. The Clough Creek intake facilities were abandoned. Abandoning the Clough Creek intake facilities was a condition of a grant acceptance agreement from the Department of Social and Health Services (DSHS) for water system improvements.

- **1986**: An infiltration gallery was built to protect the Springs from surface water intrusion.

- **1991**: A 2.0-MG reservoir was constructed to meet the additional demands of development near the North Bend I-90 interchange. The reservoir was built at the 594 HGL in the western portion of the City between I-90 and the Nintendo Distribution Center.

- **1993**: The addition of two pump stations created two new pressure zones at 710 and 780 feet. An additional 0.75-MG reservoir was also constructed to serve the new pressure zones.

- **1990s**: The City explored acquiring additional water rights to the North Bend aquifer in order to have an emergency supply and possibly support future development in the area.

- **1992**: The City submitted water right application G1-26617, with a priority date of June 16, 1992, for a permit to appropriate public groundwater.

- **1996**: The City began drilling new test wells for possible development and connection to the City’s system.
1999: During the development of the City’s Comprehensive Water Plan, it was discovered that demand had led to withdrawals at Mount Si Spring in excess of the source’s water right. The City voluntarily went into a development moratorium to curtail any additional requests for water other than those approvals vested before the moratorium’s effective date.

2006: The City constructed a disinfection CT pipe loop in order to comply with the need to disinfect water from the spring source to a CT of 6.

2008: The City received a new water right permit (G1-26617(A)P) to appropriate groundwater from a new production well, the Centennial Well, located at the City’s Public Works facility. This water right permit requires mitigation of the well’s affects on the Snoqualmie River which is discussed in the following section.

2009: The Centennial Well became operational and the development moratorium expired February 2009. At the same time, the City constructed the mitigation waterline from Hobo Springs to Boxley Creek. The project included connecting to an unused pipeline to allow for a future mitigation intertie with Sallal Water Association.

2017: The City replaced 2 of the fixed-speed pumps at the Mount Si Springs source pump station with variable speed pumps in an effort to better utilize that water right during low-flow periods.

2018: The City acquired the Cascade Golf Course and its associated water rights of 33 acre-feet per year with the intent to supplement Hobo Springs mitigation water.

CENTENNIAL WELL: WATER RIGHTS AND MITIGATION

Beginning in 1999, after it was found the City’s demand was in excess of existing water rights, the City enacted a voluntary moratorium on new development. The City soon began working to obtain additional water rights in order to address this deficit of water availability. In 2008, the City obtained a new water right permit for a well on the Public Works shop site. The water right permit required mitigation for the groundwater withdrawal’s effects on the Snoqualmie River flow, which were studied in detail as part of the water right acquisition process. Mitigation is only required when instream flow targets for the Snoqualmie River at any one of three USGS gauges are not met.

In 2008, the City drilled and started equipping the new production well, located on the City’s Public Works Department property. The project included the new production well building and equipment, a treatment facility for chlorination, provisions for a potential
future intertie with the Sallal Water Association’s (Sallal) system, and associated controls. The production well became operational in early 2009.

The required mitigation project involved conveying water from an existing intake structure at Hobo Springs to a new outfall at Boxley Creek. The Hobo Springs intake is in the Cedar River Municipal Watershed owned by Seattle Public Utilities and located approximately five miles southeast of North Bend. The Boxley Creek outfall is in the Snoqualmie River Watershed. The project also involved connecting the new mitigation pipeline to an existing waterline that will connect to Sallal’s Well 2 in the future in order to provide a secondary source of mitigation water from Sallal in case insufficient water is available from Hobo Springs. In 2018 the City acquired the Cascade Golf Course water right. The City intends to submit a change application to allow the use of this water right as a mitigation source to supplement Hobo Springs and the future Sallal mitigation sources.

When the Centennial Well is in operation, a computer algorithm within the City’s SCADA system determines how the Snoqualmie River is influenced by well pumping. If instream flows are not met, the City is required to mitigate and the same algorithm calculates how much mitigation water is required to offset these effects. The mitigation facilities convey the appropriate amount of water from the Hobo Springs to Boxley Creek and the water is purchased from Seattle Public Utilities. The City is working on an agreement with Sallal that would allow mitigation water to be purchased from Sallal. In the future the former Cascade Golf Course water will be used for mitigation as well when the Hobo Springs supply is not sufficient.

The Centennial Well was constructed with adequate capacity to provide water to Sallal Water Association, in anticipation of an agreement that is still being negotiated.

ADJACENT PURVEYORS

The City of North Bend’s adjacent purveyors include the City of Snoqualmie to the northwest, the Sallal Water Association to the southeast and Alpine Water Association to the southwest. Figure 1-2 shows the location of the adjacent water purveyors in relation to the North Bend Service Area.

City of Snoqualmie

The City of Snoqualmie serves approximately 4,117 residential connections and approximately 11,700 people as of 2012. Its service area covers 2,208 acres. Since 2012, the City has and continues to experience very rapid growth due to new developments within the service area. The City of Snoqualmie’s average daily consumption was 1.2 mgd in 2010 and was projected to increase to 1.9 mgd in 2032. The City currently uses three sources of supply, Canyon Springs and the North and South Wellfields. Canyon Springs consists of two springs that arise from the same aquifer. The springs are located approximately 5 miles northeast of the City near Ernie’s Grove. The springs have
an instantaneous water right of 898 gallons per minute (gpm). The South Wellfield is located near the high school and has an instantaneous withdrawal limit of 600 gpm. The North Wellfield is located north of the City of Snoqualmie and has an instantaneous withdrawal limit of 1,650 gpm. The City of Snoqualmie has 4.7 million gallons of storage in six reservoirs. In 2012, the City of Snoqualmie’s distribution system consisted of approximately 64 miles of 4-inch to 20-inch water main. The City currently has no interties with any of the surrounding water service providers.

**Sallal Water Association**

Sallal Water Association was created in 1967 as a cooperative to secure safe water for the residents of this area. By the end of 2017, Sallal served 2,281 connections, including 636 single-family connections in the Wilderness Rim HOA. The Wilderness Rim Water System, is a small private cooperative system and wholesale customer located within Sallal’s service area. Sallal operates four wells as its primary sources. Two of the wells are located in the southwest portion of the water service area near the Wilderness Rim Water System. The other two wells are located in the eastern section of the water service area. The water rights for these wells total 1,691 gpm. Sallal operates 10 reservoirs and has a total storage capacity of 1.5 million gallons. The Sallal Water Association has interties with Wilderness Rim, Riverbend (another independent water purveyor within Sallal’s boundaries), and North Bend. The existing North Bend intertie only allows water to leave the Sallal water system since the hydraulic grade of the Sallal system is higher at this location. There is the potential for a future intertie between North Bend and Sallal located at the Centennial Well site. This intertie could allow for Sallal to purchase wholesale water from the City.

**Alpine Water Association**

The City provides water to a small Group A system called the Alpine Water Association in the southern portion of the Water Service Area. This Association serves 18 connections along Harmon Heights Road in the southwestern portion of the City’s Water Service Area.

**East King County Regional Water Association (EKCRWA)**

The EKCRWA was formed in 1987 as a coalition of municipal water utilities, public water districts, and other water purveyors from the shores of Lake Washington to the Cascade Foothills within the East King County Critical Water Supply Service Area. The EKCRWA serves as the administrative organization for the East King County Coordinated Water System Plan (CWSP). The EKCRWA has applied for a groundwater right in the Snoqualmie Aquifer, application number G1-27384 with a priority date of January 19, 1994. The amount of water requested to be withdrawn per the application is 60 mgd. After further investigation, the EKCRWA decided to pursue a conjunctive use system that would discharge groundwater from wellfields in the upper valley to the Snoqualmie River and convey the water using the river to a location near Duvall in the
lower valley where the water could be withdrawn from the Snoqualmie River. A surface water right application for the Snoqualmie River source, S1-27877, was filed with a priority date of January 29, 1998. The City chose to join this group in order to receive water from this potential source and participate in representation provided by EKCRWA.

**INVENTORY OF EXISTING FACILITIES**

Figure 1-3 provides a map of the North Bend Service Area showing the City’s existing water system facilities.

**SOURCES OF SUPPLY**

The City obtains its public water supply from Mount Si Springs and the Centennial Well.

The intake facilities for the springs use subsurface piping to capture the spring flow before it discharges at the ground surface. The Middle Fork of the Snoqualmie River receives the excess spring discharge through ponds and channels. The collection system and water pump station are located within a level 6-acre parcel owned by the City at the base of Mount Si. The City owns an additional 82 acres of watershed that extends up the steep western slope of Mount Si.

The City’s Centennial Well was installed in 2008 adjacent to the City’s Public Works Shop. The well is housed in a building that contains pumping and disinfection facilities. The well has been operational since 2009.

**Mount Si Springs Intake Facilities**

The entire spring discharge is captured before it reaches the ground surface. The intake is an infiltration gallery which captures the spring water through 80 lineal feet of 14-inch diameter well screen. The captured water is conveyed through the well screen into a 54-inch diameter concrete inlet structure, from which an 18-inch diameter PVC water main conveys the total volume of water to a 48-inch concrete turn structure. The water is disinfected with chlorine and passes to the pump station.

The springs exhibit seasonal variability, with lower flows during the dry summer months. However, the springs have consistently produced excess water, meaning water always flows from the Spring to the Middle fork of the Snoqualmie. The water right for the spring stipulates that 3.0 cubic feet per second must bypass the point of diversion at all times. The City monitors the overflow rate of the springs and modifies production to ensure bypass requirements are met.

**Mount Si Springs Pumping Facilities**

The spring booster pump station for the 594 Zone is located at the intersection of SE 92nd Street and 436th Avenue SE near the Mount Si Spring. This pump station is an above-
CITY OF NORTH BEND
WATER SYSTEM PLAN
FIGURE 1-3
WATER BASE MAP

Legend
- CENTENNIAL WELL
- Mitigation Well
- PRV
- PUMP STATION
- RESERVOIR

Water Main Diameter:
- 3" or less
- 4"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"

Retail Service
NORTH BEND CITY LIMITS
- 710 ZONE (710 FT HGL)
- 780 ZONE (780 FT HGL)
- 594 ZONE (594 FT HGL)

Source: King County & City of North Bend GIS Data; Aerial

1" = 2,750′

Feet
grade concrete block building with a shingled roof. The building consists of two rooms: one containing the three pumps, sanitary equipment and office; the other containing the chlorine gas equipment and supplies.

Spring water is gravity fed to the pump station clear well. The clear well is a rectangular concrete reservoir under the pump station floor that holds approximately 7,600 gallons of spring water. Three vertical turbine pumps sit above the clear well and supply water to the system. One pump is equipped with a soft start while the remaining two have variable frequency drives (VFDs). The pumps have a maximum pumping capacity of 2,000 gpm; however, downstream transmission capacity limits pumping from the clear well to approximately 1,500 gpm, as confirmed by the July 13, 2020 pump test. A flow meter inside the pump station measures the total amount of water pumped to the distribution system.

Mount Si Springs water is disinfected to a CT of 6 at the Mount Si Springs source. This is achieved via a 24-inch, 775-foot pipe loop between the chlorination point and the distribution system.

**Centennial Well**

The Centennial Well is located in the Public Works Shop complex at 1155 East North Bend Way. A well log for the well is included in Appendix E.

The well draws from the aquifer that underlies much of the Snoqualmie Valley in and around North Bend. The groundwater levels in the Snoqualmie Valley generally follow seasonal precipitation patterns, but long-term static water measurements in this area indicate a variation of only 10 feet, which does not interfere with operation of the well.

The well building is a CMU block building with a pump room and hypochlorite room. The well pump has a 250-hp motor with a soft start and a maximum capacity of 2,500 gpm, though the pump is typically run at a 1,100 gpm setpoint. The well’s hypochlorite room contains a bulk storage container for sodium hypochlorite, a metering pump assembly, a chlorine analyzer, and a flow meter that registers the total flow of the well water to the City’s system.

The well building also contains piping and space for a future intertie facility to provide water to Sallal. Such facilities would likely include a booster station and an intertie flow meter.

**Water Rights**

The City currently has a water right certificate allowing for the instantaneous use of up to 3.2 mgd (2,240 gpm) from the Mount Si Springs. The annual withdrawal rate is 336 acre-ft/year. The Report of Examination for the water right also stipulates that 3.0 cubic feet per second must bypass the point of diversion at all times.
The City received a water right permit in 2008, with a priority date of June 16, 1992, for a portion of its water right application G1-26617A, which was split from the City’s original application G1-26617. This permit grants the City a maximum withdrawal rate of 2,646 gpm and a total annual withdrawal of 3,094 af/yr from a new production well at the City’s Public Works facility.

In 2018, the City acquired the Cascade Golf Course water right, certificate number CG1-00142C. This water right allows for a maximum withdrawal rate of 120 gpm and total annual withdrawal of 33 af/yr with monthly allocations and can be found in Appendix E. The water right is currently approved for irrigation of the former golf course property. The City intends to submit a change application to allow the use of this water right as a mitigation source to supplement existing Hobo Springs and future Sallal mitigation sources.

The City still has a water right application on file for groundwater withdrawals for wells in the City for use as a supplemental water source for future customers, emergency use, or mitigation water. The application number is G1-26617B. The application requests the withdrawal of water at a rate of 1,614 gpm for municipal water and environmental quality supply. The City has also applied for additional water rights at the Mount Si Springs. These certificates and applications can be found in Appendix E.
### TABLE 1-1

**Water Rights**

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<td>S1-28050</td>
<td>8/11/99</td>
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(1) All Water Right documentation can be found in Appendix E
(2) The total pumping capacity at Mount Si Springs is 2,000 gpm, which is limited in operation to 1,250 gpm due to transmission system capacity. The Report of Examination for the water right also stipulates that 3.0 cubic feet per second must bypass the point of diversion at all times.
(3) Cascade Golf Course Water Right, purchased in 2018
(4) This application is for an increase in the annual withdrawal rate from the Mount Si Springs.
STORAGE

The City is served by three reservoirs. The Nintendo and I-90 Reservoirs are located in the 594 Zone. The Forster Woods reservoir serves the 710 Zone.

The Nintendo Reservoir has a capacity of 2.0 MG and was constructed in 1991. It is a prestressed concrete reservoir, 90 feet in diameter and 45-feet tall. The reservoir is located on a small knoll in the western portion of the North Bend area between I-90 and the Nintendo Distribution Center. This reservoir provides fire flow for the Nintendo Distribution Center and also storage and fire flow protection for the entire 594 Zone. In 2015 and 2020, the facility was cleaned and inspected.

The I-90 Reservoir has a capacity of 0.5 MG and was constructed in 1967. The tank is made of steel and is 56 feet in diameter and 29-feet high. The reservoir is located in the southern area of the City’s water district at the intersection of 415th Avenue SE and SE 14th Street near the location of the old Clough Creek Watershed Dam. Water enters this reservoir when the Nintendo (2.0 MG) Reservoir is full. This reservoir was the City’s only source of storage until the addition of the Nintendo Reservoir in 1991. In 2015 and 2020, the facility was cleaned and inspected.

The Forster Woods Reservoir has a capacity of 0.75 MG and was constructed in 1993 to serve the Forster Woods development in the southwest portion of the water service area. The tank is made of steel and is 54.5 feet in diameter and 44-feet tall. This reservoir provides storage and fire flow for the 710 and 780 Zones. In 2015 and 2020, the facility was cleaned and inspected.

Table 1-2 provides an overview of the City’s reservoirs.

<table>
<thead>
<tr>
<th>Name</th>
<th>Volume</th>
<th>Overflow</th>
<th>Height x Diameter</th>
<th>Construction</th>
<th>Year</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-90</td>
<td>0.5 MG</td>
<td>594 ft</td>
<td>29' x 56'</td>
<td>Steel</td>
<td>1967</td>
<td>Cleaned 2020</td>
</tr>
<tr>
<td>Nintendo</td>
<td>2.0 MG</td>
<td>594 ft</td>
<td>45' x 90'</td>
<td>Prestressed Concrete</td>
<td>1991</td>
<td>Cleaned 2020</td>
</tr>
<tr>
<td>Forster Woods</td>
<td>0.75 MG</td>
<td>710 ft</td>
<td>44' x 54.5'</td>
<td>Steel</td>
<td>1993</td>
<td>Cleaned 2020</td>
</tr>
</tbody>
</table>

BOOSTER PUMP STATIONS

Two booster pump stations provide water to the 710 and the 780 Zones. The first station conveys water from the 594 Zone to the 710 Zone. This station is located on SW 10th Street in the Forster Woods development. Three pumps provide domestic demand and
fire flow demand for the majority of the Forster Woods development. Fire flow is provided for both the 710 and 780 Zones from a 2,650 gpm pump located at the 710 Booster Station. Two pumps, each capable of supplying 305 gpm, are used alternately to supply the Forster Woods reservoir and the 710 Zone. A Pressure Reducing Valve (PRV) is also located at the booster station to allow flow from the 710 Zone to the 594 Zone.

The second booster station provides water to the portion of the Forster Woods development located in the 780 Zone. This booster station consists of three pumps and a PRV. Two of the pumps at the station each have a capacity of 192 gpm. The third pump has a capacity of 55 gpm.

Table 1-3 provides an overview of the City’s booster pump stations.

**TABLE 1-3**

<table>
<thead>
<tr>
<th>Name</th>
<th>No. of Pumps</th>
<th>Rated Capacity (gpm)</th>
<th>TDH (ft)</th>
<th>Pump hp</th>
<th>Pumps from Zone</th>
<th>Pumps to Zone</th>
<th>Auxiliary Power Generator</th>
</tr>
</thead>
<tbody>
<tr>
<td>710 Booster Station</td>
<td>3</td>
<td>2-305 gpm</td>
<td>116</td>
<td>2-40 hp 1-150 hp</td>
<td>594</td>
<td>710</td>
<td>Yes</td>
</tr>
<tr>
<td>780 Booster Station</td>
<td>3</td>
<td>2-192 gpm 1-55 gpm</td>
<td>70</td>
<td>2-5 hp 1-2 hp</td>
<td>710</td>
<td>780</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**TRANSMISSION AND DISTRIBUTION SYSTEM**

The distribution system was developed over the years to be consistent with the current technology at the time of construction. Up to the 1940s, most pipe consisted of wood stave and cast iron. North Bend utilized Asbestos Cement (AC) pipe for most repairs and updates in the 1950s and 1960s. At present, the City uses ductile iron (DI) pipe for repairs and improvements. The city continues to replace aging AC pipes as they reach the end of their useful life. The majority of the distribution system lies within the downtown area of the City. As the City continues to grow, the distribution system has spread to the southerly reaches of the water service area. Table 1-4 provides an inventory of pipe length and diameter throughout the North Bend service area.
TABLE 1-4

Pipe Inventory

<table>
<thead>
<tr>
<th>Type of Pipe</th>
<th>4-inch</th>
<th>6-inch</th>
<th>8-inch</th>
<th>10-inch</th>
<th>12-inch</th>
<th>16-inch</th>
<th>20-inch</th>
<th>Total Length(ft)</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>10,076</td>
<td>25,242</td>
<td>5,472</td>
<td>10,646</td>
<td>7,740</td>
<td>0</td>
<td>0</td>
<td>59,177</td>
<td>29.7%</td>
</tr>
<tr>
<td>Cast Iron</td>
<td>897</td>
<td>1,265</td>
<td>0</td>
<td>2</td>
<td>609</td>
<td>0</td>
<td>0</td>
<td>2,773</td>
<td>1.3%</td>
</tr>
<tr>
<td>Ductile Iron</td>
<td>5,408</td>
<td>6,494</td>
<td>65,766</td>
<td>5,450</td>
<td>35,735</td>
<td>7,694</td>
<td>3,127</td>
<td>129,676</td>
<td>65.3%</td>
</tr>
<tr>
<td>PVC</td>
<td>217</td>
<td>203</td>
<td>1,292</td>
<td>0</td>
<td>4,105</td>
<td>0</td>
<td>0</td>
<td>6,658</td>
<td>3.3%</td>
</tr>
<tr>
<td>HDPE</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>827</td>
<td>0</td>
<td>0</td>
<td>827</td>
<td>0.4%</td>
</tr>
<tr>
<td>Total</td>
<td>16,598</td>
<td>33,229</td>
<td>72,531</td>
<td>16,099</td>
<td>48,189</td>
<td>8,521</td>
<td>3,127</td>
<td>198,294</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Pressure Zones

The City serves customers who reside in three pressure zones. The three zones are labeled 594, 710, and 780 in accordance with the hydraulic grade line associated with each zone.

The 594 Zone extends to the north along the Middle Fork of the Snoqualmie River; to the south along the south side of the South Fork of the Snoqualmie River and I-90; to the east to 428th Avenue SE and further east to the base of Mount Si; and to the west near the intersection of North Bend Way and Meadowbrook Way SE. Water from the 2.0-MG and 0.5-MG reservoir supplies this zone.

The 710 and the 780 Zones were created to serve customers in the City’s water service area at higher elevations south of Interstate 90. Both of these zones are located within the southwestern portion of the service area, on the south side of Interstate 90.

The 710 Zone serves the Forster Woods and Arrive developments. A 0.75-MG reservoir was built within this zone to provide adequate storage for this zone. Water supply for this zone is gravity fed from the 0.75-MG reservoir. This zone serves approximately 218 single-family units and 232 multi-family units in the Arrive development.

The 780 Zone serves 135 additional units in the Arrive Development that are located at higher elevations and cannot be adequately served by the 710 Zone and booster pump station. An area to the west of Arrive, once considered for future residential development, has been purchased by the City and designated as a park.

Meters

The City’s sources and booster stations are all equipped with meters to record the amount of water that flows through the respective pumps.
Approximately 20 years ago, the City replaced all of its service meters. The new meters are read automatically with a handheld recording device. These meters are read by scanning the recording device over the box that contains the meter. In 2019, the City began a customer meter replacement program. Under this program, all customer-side meters will be replaced on a 15-year cycle. The new meters that are being installed are Neptune drive-by radio-reads, with the built-in capability of converting to centralized-reading (smart meter) technology in the future. Starting in early 2019, all meters installed for new developments are the new radio-read technology.

**SCADA System**

The City’s water system facilities are automatically controlled by a computer-based digital telemetry and supervisory control system, or Master Telemetry Unit (MTU). The MTU remotely operates the Mount Si Springs Booster Station and the Centennial Well according to the water level in the Nintendo reservoir. The 710 Booster Station is remotely controlled by the level in the Forster Woods Reservoir. The 780 Booster Station is controlled by the pressure in the 780 Zone. Hobo Springs and the future Sallal mitigation intertie are equipped with SCADA as well. The GE Fanuc iFix SCADA system includes a comprehensive historical data logging system, a software alarm dialer, remote access capabilities and a special report generation software. The computer-based telemetry system also provides remote control and alarm presentation with callout functionalities. The remote access feature provides operators a secure interface to the SCADA system via the internet using a laptop, tablet, or smartphone. This feature is utilized primarily by on-call operators to assess alarm callouts prior to physical arrival at the site. The Data Historian is installed on a cloud server (Azure) and is connected to the iFix Data Collector installed on the SCADA server at the Wastewater Treatment Plant (WWTP). The SCADA system is further detailed in Chapter 6. This discussion includes a comprehensive summary of inputs.

**InterTies**

The City currently has one intertie which is governed by an emergency agreement with Sallal (Appendix C). It is located near the eastern boundary of the City’s service area. The intertie was installed in 1987. A 6-inch pressure regulating valve is located at this intertie. Sallal has a 701 Zone adjacent to the North Bend 594 Zone. The intertie can only be operated manually during emergency situations and will only allow water to flow from the Sallal water system to the City of North Bend due to North Bend’s lower zone pressure. Temporary pumps can be installed in the intertie vault which would enable Sallal to receive water from the City of North Bend.

Over the past decade the City and Sallal have been negotiating an intertie agreement that would allow Sallal to purchase water from the City’s Centennial Well. The exact configuration of this intertie has not been determined, but the intertie would transfer water to the Sallal 701 Zone.
MITIGATION FACILITIES

The City’s Centennial Well water right permit requires mitigation to offset net stream deletion to the Snoqualmie River caused by groundwater withdrawals at the well. The City’s mitigation facilities provide mitigation water to the Snoqualmie River Watershed by conveying water from an existing intake structure at Hobo Springs to an outfall at Boxley Creek, a tributary of the Snoqualmie River. The Hobo Springs intake is in the Cedar River Municipal Watershed owned by Seattle Public Utilities and located approximately five miles southeast of North Bend. Both the Hobo Springs Weir site (source) and the Hobo Spring Valve Vault (control vault) were upgraded in December of 2018 with new communications (Ethernet Cellular) and upgraded PLCs. Programming changes in the PLC include flow paced control and mitigation daily flow total setpoints. This has had the effect of eliminating over-mitigating. The City’s mitigation facilities also include a partially completed mitigation intertie with Sallal. At present the intertie is connected to the mitigation conveyance system; however, the intertie still needs to be connected to Sallal’s Well 2. This work is anticipated to occur in the near future. The mitigation intertie will serve as a secondary source of mitigation water augmenting the City’s supply from Hobo Springs.

The City purchased the Cascade golf course in November of 2018 in order to secure an additional mitigation source. The water right from this property, Certificate Number CG1-00142C, would add an additional 33 acre feet of available mitigation water after submitting a change application. The City is working towards converting the water right from an irrigation right to a mitigation right. If successful, the City will construct the necessary infrastructure to supply water to the South Fork of the Snoqualmie River, approximately 2,250 feet downstream of the 436th Avenue SE Bridge. Current infrastructure at the golf course includes a wellhead, a submersible pump, a local PLC, pump start, and a pond which could be used as equalizing storage for future mitigation efforts.

The City is also continuing to investigate additional sources of mitigation water. One such source is a mitigation well that has been drilled by the City near the Middle Fork Snoqualmie River. This well is not currently in use.

Figure 1-4 provides a map of the City’s existing water system mitigation facilities.

RELATED DOCUMENTS

The City’s agreements with other water purveyors are given in Appendix C.

The following related planning documents were utilized in the preparation of the City of North Bend Water System Plan.
Legend

- MITIGATION WELL
- MITIGATION PIPELINE
- RETAIL SERVICE AREA
- NORTH BEND CITY LIMITS
- SPRING
- MITIGATION INTERTIE

Source: King County & City of North Bend GIS Data; Aerial

1" = 4,200'

CITY OF NORTH BEND
WATER SYSTEM PLAN
FIGURE 1-4
MITIGATION FACILITIES
The East King County Coordinated Water System Plan (EKCCWSP) was developed to present an assessment of water supply needs within East King County and design a program to meet those needs. The Plan indicates that the region will have a 20 to 30 mgd shortfall by the year 2025 without the addition of new water rights. Options to be investigated to alleviate this shortfall include:

- The implementation of conservation programs;
- The development of groundwater sources in known aquifers within the area;
- Groundwater management programs throughout King County;

The plan also presents a consistent water conservation program for water utilities in the East King County region. The EKCRWA recommends water utilities should coordinate efforts to find future water sources for the area. The water utilities in the East King County region should work with the East King County Water Utilities Coordinating Committee (WUCC), Ecology, and DOH to agree on the appropriate variables that need to be identified in creating useful modeling tools for water use in the East King County region.

City of North Bend Comprehensive Plan, 2015

The main focus of this document is to provide structure to the anticipated growth in North Bend over the next 20 years. This plan addresses the issues raised by the State’s Growth Management Act and the concerns its citizens have about the next 20 years. It investigates the physical characteristics and land use needs of the community. It addresses the community’s vision to remain a rural and natural environment while increasing its marketability as a community that is willing to grow. This document provides guidelines for the development of the City to meet these goals. The water system will be required to develop as the City grows. This water system plan has been developed consistent with the North Bend Comprehensive Plan.

East King County Ground Water Management Plan, December 1998

The East King County Ground Water Management Plan was utilized to identify the characteristics, management sources, and possible contaminants for the groundwater within the East King County area. The document details the characteristics of the aquifers within East King County. The document also provides a list of possible
contaminant sources ranging from underground storage tanks to landfills within the recharge area boundaries. The document provides detailed management strategies for the water purveyors in the area to help prevent contamination of the area’s groundwater resources.

**EXISTING SERVICE AREA**

In accordance with the Municipal Water Law (MWL), the City is required to designate a retail service area within which it has a duty to serve all customers, and if appropriate, also designate a future service area and wholesale service area. At this time, the City provides only retail service within the service area established but may add the capacity to provide wholesale water to the Sallal Water Association as well.

Figure 1-5 shows North Bend’s water service boundaries, City limits, and urban growth area (UGA).

**Retail Service Area**

The City acknowledges that it has a duty to serve all new connections within its retail service area. The retail service area is defined by the City and is required to include the current service area and areas where new service is proposed.

The City has a duty to serve an applicant for new service within its retail service area if all of the following conditions are met:

1. Service can be provided in a timely and reasonable manner. The City is in the process of formalizing their criteria for timely and reasonable. “Timely” will likely refer to a time frame of 6 months while “reasonable” will likely be a distance of 150 or 200 feet from an existing service main.
2. The municipal water supplier has sufficient water rights to provide service.
3. The municipal water supplier has sufficient capacity to serve water in a safe and reliable manner.
4. The service request is consistent with adopted local plans and development regulations.

The City is aware of multiple small Group A and B water systems that fall within the City’s Retail Service Area. If requested, the City is prepared to serve these water systems provided they meet the criteria described above.

**Wholesale Service Area**

The City’s wholesale service area includes the portion of the service area of the Sallal Water Association that is inside the City’s Urban Growth Area boundary. Negotiations regarding potential water sales from the City’s Centennial Well to Sallal are ongoing.
CITY OF NORTH BEND
WATER SYSTEM PLAN
FIGURE 1-5
CITY LIMITS, UGA, AND
WATER SERVICE AREA

Legend
- RETAIL SERVICE
- SERVICE AREA (WHOLESALE & RETAIL)
- NORTH BEND CITY LIMITS
- UGA BOUNDARY
- PARCELS

Source: King County & City of North Bend GIS Data; Aerial
1" = 4,000'

M:\NBEND\19473 WSP\GIS\MXDs\Project MXDs\1-5 UGA ALTERNATIVE.mxd
The City also sells water to the Apline water Association via a 2-inch meter connection.

**Future Service Area**

The City’s service area boundaries are not likely to expand due to the constraint of adjacent water purveyors. The City is committed, however, to ensuring that an adequate level of service is guaranteed for residents within the city limits. The City would consider expanding its RSA within city limits if an existing purveyor were not able to provide an adequate level of service in a timely and reasonable manner.

**Geography**

The City occupies land in the Snoqualmie Valley between the confluence of the Middle and South Forks of the Snoqualmie River and Interstate 90. The valley is crossed by the forks of the river and further intersected by Interstate 90. South of the interstate, the terrain rises sharply towards Rattlesnake Ridge. The City’s water service area covers approximately 8.5 square miles and ranges in elevation from 400 feet to 2,000 feet. Water service customers reside at elevations ranging from 400 feet to 625 feet. Figure 1-6 shows the topography of the City’s Water Service Area.

**Geology**

A unique aspect of glacial history occurred within the Upper Snoqualmie area. The area is located at the historical margins of the continental glaciers that entered the Puget Sound area from Canada and the alpine glaciers that descended from the Cascade Mountains. The confluence of these two glacial environments provide for large accumulation of sediment. The sheer volume of saturated sediments in the Snoqualmie Basin, in conjunction with high precipitation (snow and rainfall), is the basic indicator that a large groundwater development is possible. The area is part of the Snoqualmie Aquifer System which is defined as a series of connected aquifers. There are recharge and groundwater inflows along the margins and surface water discharge and deeper outflows in the Snoqualmie Falls area.

Due to the region’s complex geology, there are several critical areas that fall within the planning area. The combination of rivers, wetlands, and flat valley floors makes the region prone to flooding. The Washington State Department of Ecology and FEMA have procedures for floodplain management and wellhead protection that must be followed when developments may impact a flood hazard area. The steep slopes along Rattlesnake Mountain are also of concern, as they are susceptible to erosion and pose landslide hazards. The critical areas are further identified in the North Bend Comprehensive Land Use Plan. Figure 1-7 shows the critical areas for the City’s Water Service Area.
Land Use and Zoning

Development of accurate and reasonable growth projections is essential in establishing future water demand requirements. Accurate projections allow the community to anticipate future capacities, locations, implementations strategies, and scheduling requirements for water system improvements while also allowing for adequate financial planning.

Three major elements in predicting the amount and location of future growth and development in the Water Service Area are land use, zoning, and population projections. Population forecasts, in conjunction with current water consumption data, can provide a basis for estimating future water demands. Land use and zoning play an important role in predicting growth patterns, influencing future water requirements. Future land use, variations in use, and changing population densities, as determined by applicable zoning ordinances, can significantly impact a system’s ability to provide adequate water service. Increased residential and commercial densities and new large industrial users, can greatly impact water system demands and affect both the system’s level of service and its ability to deliver fire flows.

The following are the main types of land uses and their specific classifications:

- **Residential Land Use:** Low and high density housing.
- **Commercial Land Use:** Retail, services, and office.
- **Employment Park Land Uses:** Office parks, high technology business parks, warehouses, heavy industrial and manufacturing.
- **Parks, Open Space, and Public Facilities Land Use:** Recreational open space, active and passive park uses, and publicly owned facilities.

Table 1-5 provides a breakdown of the land use for the City. Figure 1-8 and Figure 1-9 show the zoning for the City’s Water Service Area.
Legend

RETAIL SERVICE
NORTH BEND CITY LIMITS
KING COUNTY WETLANDS
NWI WETLANDS
LANDSLIDE HAZARD
SHORELINE MANAGEMENT DESIGNATION:

Conservancy
Rural
Rural/Conservancy

CRITICAL AQUIFER RECHARGE AREA

CATEGORY CODE

1
2

Source: King County & City of North Bend GIS Data; Aerial

1" = 2,500'
Legend

RETAIL SERVICE AREA

CURRZONE

- A-35 - Agricultural, one DU per 35 acres
- F - Forest
- RA-2.5 - Rural Area, one DU per 2.5 acres
- RA-5 - Rural Area, one DU per 5 acres
- RA-10 - Rural Area, one DU per 10 acres
- UR - Urban Reserve, one DU per 5 acres

NORTH BEND CITY LIMITS
(see figure 1-8 for City zoning)

Source: King County & City of North Bend GIS Data; Aerial

1" = 2,750'

CITY OF NORTH BEND
WATER SYSTEM PLAN
FIGURE 1-9
KING COUNTY ZONING
TABLE 1-5
Zoning Classifications for the City’s Water Service Area

<table>
<thead>
<tr>
<th>Location</th>
<th>Zoning Category</th>
<th>Acres</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside North Bend’s Urban Growth Area</td>
<td>Constrained Low Density Residential</td>
<td>375</td>
<td>12%</td>
</tr>
<tr>
<td></td>
<td>Low Density Residential</td>
<td>1,160</td>
<td>37%</td>
</tr>
<tr>
<td></td>
<td>Cottage Residential</td>
<td>59</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>High Density Residential</td>
<td>47</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Downtown Commercial</td>
<td>67</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Interchange Commercial</td>
<td>77</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>Interchange Mixed Use</td>
<td>40</td>
<td>1%</td>
</tr>
<tr>
<td></td>
<td>Neighborhood Business</td>
<td>167</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Employment Park – 1</td>
<td>350</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>Employment Park – 2</td>
<td>133</td>
<td>4%</td>
</tr>
<tr>
<td></td>
<td>Park/Open Space/Public Facilities</td>
<td>664</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>Un-Zoned Areas (Right-of-ways)</td>
<td>15</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>3,155</strong></td>
<td><strong>100%</strong></td>
</tr>
<tr>
<td>Outside North Bend’s Urban Growth Area (King County Zoning)</td>
<td>RA-2.5 – Rural Area, 1 DU per 2.5 Acres</td>
<td>276</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>RA-5 – Rural Area, 1 DU per 5 Acres</td>
<td>472</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>RA-10 – Rural Area, 1 DU per 10 Acres</td>
<td>1,578</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>A-35 – Agricultural, 1 DU per 35 Acres</td>
<td>241</td>
<td>8%</td>
</tr>
<tr>
<td></td>
<td>Forestry</td>
<td>560</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>3,127</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: 2015 North Bend Comprehensive Land Use Plan, King County 2019 Zoning GIS Data.

GROWTH MANAGEMENT ACT CONSIDERATIONS

The Growth Management Act (GMA) was passed into law in the State of Washington in 1990 with the intention of stopping uncoordinated and uncontrolled development which threatens the environment and contributes to urban sprawl. It was determined by the State that “it is in the public interest that citizens, communities, local governments and the private sector cooperate and coordinate with one another in comprehensive land use planning.” Several goals were adopted by the GMA to guide the development and adoption of comprehensive plans. These goals include encouraging development in urban areas where adequate public facilities and service can easily be provided, reducing sprawling low density development, encouraging efficient regional based transportation, promoting a variety of housing densities and types, and encouraging the retention of open space.

The City created 20-year population and employment growth targets in 2015. Available land area and existing zoning classifications within the Urban Growth Area (UGA) and incorporated city limits provide the basis for growth targets. The City of North Bend’s 2015 Comprehensive plan projects the City and surrounding UGA will have a total of 2,331 units in 2035 and a population of 14,401. This figure is consistent with the figures used in the Water and Sewer Comprehensive Plans.
The City, through an earlier Annexation Feasibility Study, has designated annexation areas for growth and expansion in the North Bend area. The City has provided four factors to determine the order in which parcels are accepted into the City from the UGA. These criteria are:

- The ability of the City to provide City services;
- Achievement of logical, regular boundaries;
- Development potential of area to be annexed; and
- Identification of existing or potential community.

**GMA COMPLIANCE – INTERNAL CONSISTENCY AND CONCURRENcy**

The land use element of the North Bend Comprehensive Plan established targets for new residential and employment growth by the year 2035 as follows: The residential target is 771 households and the employment target is 1,050 jobs.

The GMA calls for provision of services and facilities including potable water and fire protection, concurrent with new development. Specifically, RCW 36.70A.020 adopted 13 goals to be achieved by the GMA. Goal 12 concerning public facilities and services states: “ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards.” Further definition of the general goal is provided for the transportation element of the comprehensive plan, where RCW 36.70A.070(6) directs that system expansion needs be identified and a plan be prepared to finance said needs. If probable funding falls short of needs, additional funding must be raised or land use assumptions must be reassessed, to ensure that level of service standards will be met. The water plan needs to meet the same standards for concurrency as outlined for transportation.

The GMA calls for the comprehensive plan and all of its elements, including the water system plan, to be consistent. Per RCW 36.70A.070 the Comprehensive Plan “shall be an internally consistent document and all elements shall be consistent with the future land use map.”

**SERVICE AREA POLICIES**

The City’s service area policies are outlined in Table 1-6. A more detailed description of the City’s policies regarding applications for new water services are given in the subsection below.
APPLICATIONS FOR NEW SERVICE

Applications for new water services must meet the City’s concurrency requirements as outlined in North Bend Municipal Code Chapter 20.12. For applicants applying for City development permits, the concurrency process coincides with the permitting process.

In order to meet the City’s concurrency requirements, a development must pass a concurrency test. The concurrency test determines if the capacity of available public facilities is equal to or greater than the capacity required to maintain the City’s level of service standard for the impact of the development. For the City’s water system, the level of service has been established as the following:

1. Water Supply and Mitigation: Water rights certificates and/or permits issued by Washington State Department of Ecology;
2. Conveyance: Water System Design Manual, Washington State Department of Health; and

If there is sufficient water system capacity to accommodate the proposed development, the concurrency test is passed and a certificate of concurrency is issued. The certificate of concurrency is valid until the expiration date of the coinciding development permit or one year after issuance if the certificate is obtained without a permit. While the certificate is valid, capacity in the City’s water system is reserved for the applicant. The certificate is issued either by the time the coinciding permit is issued or, in the absence of a permit, within 90 days after the complete application is received. Complete applications are processed in the order they are received.

A certificate of concurrency may not be extended according to the same terms and conditions as an underlying development permit. If a development permit is granted an extension or the certificate otherwise expires, the applicant must submit a new application for a concurrency test and certificate.

An applicant may appeal a denial of a certificate of concurrency to the North Bend Hearing Examiner on the following grounds:

1. A technical or mathematical error;
2. The applicant provided alternative data that was rejected by the City; or
3. Unwarranted delay in review of the application that allowed capacity to be given to another applicant.

If the new service involves an extension of a water main, the applicant must enter into a developer extension agreement with the City. Once this agreement is in place, the plans can be reviewed, review and connection fees paid, and the project permitted. The applicant then installs the facilities and makes the appropriate connections. An as-built of
the installation is required to be provided to the City before service is started and the project is accepted as complete. The applicant is charged a meter drop fee for the City’s installation of the service meter. The ownership of the facilities is then conveyed to the City for operation and maintenance. If the main extension is to the benefit of other properties, the applicant can enter a Latecomers Agreement with the City for future reimbursement of partial installation costs as other benefiting properties connect to the main. This agreement is good for up to 20 years after installation of the facilities.

If the new service involves a connection to an existing main, the applicant must submit a plan and application for service. The City reviews the proposal and, upon receipt of review, connection, and service installation fees, the City installs the service connection from the main to a meter box at the property line. The applicant is responsible for the connection from the meter box to the building. The City inspects the installation of the service line to assure there are no cross connections. The applicant must submit an as-built of the service line layout on the property before the service is started and the project is accepted as complete.

TABLE 1-6

Service Area Policies

<table>
<thead>
<tr>
<th>Policy Name</th>
<th>Policy Description</th>
<th>City Policy</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Rates</td>
<td>Rates charged to the City’s water customers.</td>
<td>The City’s water rates are established by ordinance in the City’s taxes, rates, and fees schedule.</td>
<td>North Bend Municipal Code Chapter 13.08 and City of North Bend Ordinance No. 1245</td>
</tr>
<tr>
<td>Wholesaling of Water</td>
<td>Conditions which must be met to obtain a wholesale agreement included in the conditions of service for wholesaling of water.</td>
<td>The City’s sole wholesale water customer is Alpine Water Association, who are served via a single 2-inch meter. Wholesaling will be considered on a case by case basis under the conditions indicated in the Water System Plan.</td>
<td>2020 Water System Plan</td>
</tr>
<tr>
<td>Wheeling of Water</td>
<td>Conditions met for water wheeled to another system, i.e., compatible water quality, engineering, etc.</td>
<td>Wheeling will be considered on a case by case basis under the conditions indicated in the Water System Plan.</td>
<td>2020 Water System Plan</td>
</tr>
<tr>
<td>Annexation Policy</td>
<td>How city annexation relates to the provision of water service.</td>
<td>Annexed areas without an existing supply may be served by the City. Annexed areas with an existing municipal supply must meet water standards. Unannexed areas outside of City’s boundaries will be evaluated on a case by case basis.</td>
<td>2015 North Bend Comprehensive Land Use Plan RCW 35.13</td>
</tr>
</tbody>
</table>
TABLE 1-6 – (continued)

Service Area Policies

<table>
<thead>
<tr>
<th>Policy Name</th>
<th>Policy Description</th>
<th>City Policy</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and Performance Standards</td>
<td>Minimum design and performance standards for new development.</td>
<td>This policy outlines the application process, effective dates of agreements, requirements for connecting with mains, specifications and maintenance of service pipes, installation fees, and locations and requirements of service pipes.</td>
<td>2020 Water System Plan, Developer Standards</td>
</tr>
<tr>
<td>Direct Connection and Remote System Policy</td>
<td>Determination of whether new developments directly connect to existing water system, or whether satellite systems will be allowed.</td>
<td>New developments are required to connect directly to the system. Satellite systems may be considered on a case by case basis under the conditions indicated in the Water System Plan.</td>
<td>2020 Water System Plan, Developer Standards</td>
</tr>
<tr>
<td>Surcharge for Outside Customers</td>
<td>City’s surcharge for customers outside corporate limits.</td>
<td>A monthly surcharge on base and usage rates shall be collected on all water customer accounts outside the City limits: see current water rates in Chapter 9.</td>
<td>City of North Bend Ordinance No. 1245</td>
</tr>
<tr>
<td>Temporary Water Service</td>
<td>Policy allowing new connections within the City’s water service boundaries to temporarily receive water from adjacent purveyors.</td>
<td>If the City is temporarily unable to provide service within its service area, People interested in a water service connection maybe supplied with water from an adjacent purveyor subject to City Council agreement.</td>
<td>2020 Water System Plan</td>
</tr>
<tr>
<td>Urban Growth Areas</td>
<td>Responsibility of service is provided in UGA, how provided, and how financed.</td>
<td>Sewer and water, drainage facilities, utilities, telecommunications lines, and local roads will be extended to UGA areas.</td>
<td>City of North Bend 2015 Comprehensive Land Use Plan</td>
</tr>
<tr>
<td>Late-Comer Agreements</td>
<td>Policy on allowing late-comer agreements for those who propose to extend the water system, and provisions of payback.</td>
<td>These agreements are negotiated with developers and property owners on a case by case basis.</td>
<td>2020 Water System Plan, Developer Standards</td>
</tr>
<tr>
<td>Oversizing Policy</td>
<td>City provides funds to install larger than needed facilities to allow for future development, if needed.</td>
<td>Oversizing will be negotiated on a case by case basis as indicated in the Developer Standards.</td>
<td>2020 Water System Plan, Developer Standards</td>
</tr>
</tbody>
</table>
TABLE 1-6 – (continued)

Service Area Policies

<table>
<thead>
<tr>
<th>Policy Name</th>
<th>Policy Description</th>
<th>City Policy</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-Connection Control Program</td>
<td>Policy on regulations of cross-connections, including steps taken if a cross-connection is discovered.</td>
<td>State approved backflow prevention devices are required on all cross connections or potential cross connections. Each device must be inspected and tested yearly.</td>
<td>WAC 246-290-490, North Bend Municipal Code Chapter 13.16, and Cross-Connection Control Program</td>
</tr>
<tr>
<td>Extension Policy</td>
<td>Policy regarding extension of the system, including identity of responsible party. Design standards and payment included in conditions of service.</td>
<td>Applications must be made for extension of water main. The City shall determine proper size of main, not less than 8-inches. Property owners will pay for extension of mains.</td>
<td>2020 Water System Plan, 2010 Developer Standards, City of North Bend Municipal Code Chapter 19.01</td>
</tr>
<tr>
<td>Connection Fee Policy</td>
<td>Fees relating to the installation of water service.</td>
<td>Fees for water service will be determined by the size of meter installation, number of connections or units being served, and the water delivered through the service meter.</td>
<td>City of North Bend Municipal Code Chapter 13.08</td>
</tr>
<tr>
<td>Certificate of Concurrency</td>
<td>Issuance of a certificate indicating water availability.</td>
<td>Water availability will be dependent on the property owner meeting the City’s Concurrency Requirements</td>
<td>City of North Bend Municipal Code Chapter 20.12</td>
</tr>
<tr>
<td>Water Rights</td>
<td>Relinquishment/Transfer of Water Rights within Water Service Area</td>
<td>The City will require owners of private wells who connect to the City’s water utility to transfer any water rights associated with their property to the City.</td>
<td>2020 Water System Plan</td>
</tr>
</tbody>
</table>
CHAPTER 2

BASIC PLANNING DATA

This chapter includes basic planning data as well as growth and demand projections. These projections will inform the evaluation of the existing system and determine future needs based on foreseeable trends through the year 2040.

EXISTING POPULATION, SERVICES, AND WATER DEMAND

RESIDENTIAL POPULATION

As discussed in the previous chapter, the City of North Bend’s retail service area does not serve the City’s entire population. A portion is served by Sallal Water Association. The 2010 Census tallied 5,731 residents in the City of North Bend as a whole. By 2019, the Washington State Office of Financial Management estimated that the population had increased to 6,965, representing a 21.5 percent increase in 9 years and an average annual increase of 2.2 percent. As much of the City’s growth was concentrated within the Retail Service Area (RSA) a yearly increase for the RSA population was assumed be 2.5 percent. This yields a RSA population of 5,305 in 2010 and 6,625 in 2019.

TOTAL CONNECTIONS SERVED

The 2019 DOH Water system design manual defines connections served as the total of “each single-family home, each unit in a multifamily building, and each nonresidential building the water system serves.”

As shown in Table 2-1, the total connections served by the City’s water system. In 2019, the City served 2,745 connections.

<table>
<thead>
<tr>
<th>Customer Classification</th>
<th>Number of Service Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Residential</td>
<td>1,949(^{(1)})</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>548(^{(2)})</td>
</tr>
<tr>
<td>Commercial/Government</td>
<td>248(^{(1)})</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,745</strong></td>
</tr>
</tbody>
</table>

\(^{(1)}\) From 2019 customer meter data.
\(^{(2)}\) From Section 26.B of North Bend’s 2019 Water Facilities Inventory Form.
In contrast, the total service meters are the sum of every metered connection as reflected in the City’s consumer billing. Total service meters for the period of 2009 through 2018 can be seen in Table 2-2.

### TABLE 2-2

Total Service Meters for 2009 Through 2019

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Service Meters</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1,716</td>
</tr>
<tr>
<td>2010</td>
<td>1,724</td>
</tr>
<tr>
<td>2011</td>
<td>1,712</td>
</tr>
<tr>
<td>2012</td>
<td>1,769</td>
</tr>
<tr>
<td>2013</td>
<td>1,837</td>
</tr>
<tr>
<td>2014</td>
<td>1,882</td>
</tr>
<tr>
<td>2015</td>
<td>1,899</td>
</tr>
<tr>
<td>2016</td>
<td>1,905</td>
</tr>
<tr>
<td>2017</td>
<td>1,968</td>
</tr>
<tr>
<td>2018</td>
<td>2,182</td>
</tr>
<tr>
<td>2019</td>
<td>2,356</td>
</tr>
</tbody>
</table>

A total of 640 service meters were added to the City’s system between 2009 and 2019 which represents a 37 percent increase over 10 years and an average annual increase of 3.2 percent.

**WATER USE**

Water production data is currently collected from a single electromagnetic flow meter at the Mount Si Springs. Water production at the Centennial Well is also measured using an electromagnetic flow meter. Both meters are read on a daily basis. The meter at Mount Si was replaced in 2017 while the meter at the Centennial Well was replaced in 2019.

**Production History**

The 2009 through 2019 historical average day and peak day production for each of the City’s sources, in addition to the cumulative average day production are summarized in Table 2-3.
<table>
<thead>
<tr>
<th>Year</th>
<th>Total Average Day Production</th>
<th>Mount Si Spring</th>
<th>Percentage of Total Production</th>
<th>Centennial Well</th>
<th>Percentage of Total Production</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Peak Day Production</td>
<td>Average Day Production</td>
<td>Day</td>
<td>Peak Day Production</td>
</tr>
<tr>
<td>2009</td>
<td>627,488</td>
<td>975,610</td>
<td>342,503</td>
<td>7/12/2009</td>
<td>1,305,461</td>
</tr>
<tr>
<td>2010(1)</td>
<td>570,876</td>
<td>1,056,425</td>
<td>302,938</td>
<td>7/28/2010</td>
<td>896,852</td>
</tr>
<tr>
<td>2011</td>
<td>508,509</td>
<td>782,456</td>
<td>169,966</td>
<td>8/22/2011</td>
<td>785,347</td>
</tr>
<tr>
<td>2012</td>
<td>526,144</td>
<td>906,941</td>
<td>192,774</td>
<td>8/15/2012</td>
<td>869,161</td>
</tr>
<tr>
<td>2013</td>
<td>545,666</td>
<td>967,200</td>
<td>232,820</td>
<td>7/21/2013</td>
<td>1,031,768</td>
</tr>
<tr>
<td>2014</td>
<td>545,002</td>
<td>989,584</td>
<td>248,885</td>
<td>8/4/2014</td>
<td>1,032,905</td>
</tr>
<tr>
<td>2015</td>
<td>562,293</td>
<td>1,185,700</td>
<td>254,227</td>
<td>6/29/2015</td>
<td>1,306,692</td>
</tr>
<tr>
<td>2016</td>
<td>534,804</td>
<td>886,423</td>
<td>304,779</td>
<td>6/14/2734</td>
<td>842,229</td>
</tr>
<tr>
<td>2017(2)</td>
<td>568,447</td>
<td>688,441</td>
<td>132,500</td>
<td>1/9/2017</td>
<td>1,132,000</td>
</tr>
<tr>
<td>2018</td>
<td>541,690</td>
<td>878,000</td>
<td>217,788</td>
<td>6/9/2018</td>
<td>895,536</td>
</tr>
<tr>
<td>2019</td>
<td>563,078</td>
<td>943,564</td>
<td>285,151</td>
<td>6/17/2019</td>
<td>1,031,000</td>
</tr>
</tbody>
</table>

(1) Does not include the water pumped during the preliminary pump test on August 31 and the aquifer pump test on September 13 and 14.
(2) VFDs installed at Mount Si Springs in the summer of 2017.
From 2010 to 2019 Mount Si Springs had a peak day production ranging from 688,441 to 1,185,700 gallons per day and average day production ranging from 132,500 to 342,503 gallons per day and accounted for between 23.3 and 57.0 percent of the total source production.

Over the same time period the Centennial Well has had peak day production ranging from 785,347 to 1,306,692 gallons per day, average day production ranging from 145,806 to 435,948 gallons, and accounted for between 43.0 and 76.7 percent of total source production.

Peak day production for both sources typically occurs in the drier months between June and September. In 2017, two variable frequency drives (VFDs) were installed at the Mount Si Springs pumping facility. This downtime resulted in the lower than usual contributions from Mount Si Springs and comparatively higher contribution from the Centennial Well in 2017.

**Peak Day Production and Peaking Factor**

The peak day production corresponds to the day of greatest aggregate flow of combined Mount Si Springs and Centennial Well production and varies from the peak day by source summarized in Table 2-3. The peak day productions and corresponding days for 2009 through 2019 are summarized in Table 2-4.

The peak day factor will be used in subsequent projections and can be determined by dividing the peak day production of a given year by the same year’s average day production. This is analogous to the method described in the 2019 DOH Water System Design Manual. In this case Average Day Demand (ADD) corresponds to average day production and Maximum Day Demand (MDD) corresponds to peak day production. This method ensures that the City’s elevated DSL is included in the peaking factor. The peak day productions for the City’s source from 2009 to 2019 are shown in Table 2-4.
TABLE 2-4

Peak Day Production Factor

<table>
<thead>
<tr>
<th>Year</th>
<th>Peak Day</th>
<th>Peak Day Production (gpd)</th>
<th>Total Average Day Production (gpd)</th>
<th>Peak Day Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>31-Jul</td>
<td>1,385,112</td>
<td>627,488</td>
<td>2.21</td>
</tr>
<tr>
<td>2010(1)</td>
<td>28-Jul</td>
<td>1,056,425</td>
<td>570,876</td>
<td>1.85</td>
</tr>
<tr>
<td>2011(2)</td>
<td>23-Jul</td>
<td>788,074</td>
<td>508,509</td>
<td>1.55</td>
</tr>
<tr>
<td>2012</td>
<td>3-Oct</td>
<td>928,769</td>
<td>526,144</td>
<td>1.77</td>
</tr>
<tr>
<td>2013</td>
<td>3-Jul</td>
<td>1,035,175</td>
<td>545,666</td>
<td>1.90</td>
</tr>
<tr>
<td>2014</td>
<td>11-Aug</td>
<td>1,033,327</td>
<td>545,002</td>
<td>1.90</td>
</tr>
<tr>
<td>2015</td>
<td>24-Jul</td>
<td>1,377,689</td>
<td>562,293</td>
<td>2.45</td>
</tr>
<tr>
<td>2016</td>
<td>23-Aug</td>
<td>994,352</td>
<td>534,804</td>
<td>1.86</td>
</tr>
<tr>
<td>2017</td>
<td>3-Aug</td>
<td>1,132,000</td>
<td>568,447</td>
<td>1.99</td>
</tr>
<tr>
<td>2018</td>
<td>19-Jul</td>
<td>1,038,189</td>
<td>541,690</td>
<td>1.92</td>
</tr>
<tr>
<td>2019</td>
<td>21-Jun</td>
<td>1,034,181</td>
<td>563,078</td>
<td>1.84</td>
</tr>
</tbody>
</table>

Average Ratio 1.93

(1) Large production days on August 31st and September 13th and 14th of 2010 were discounted as peak production days since these occurred as part of preliminary pump tests for the Centennial Well.

(2) Peak day production occurred on December 18, 2011; however, this day was discounted as it resulted from an 8-inch water main break.

The City has an average ratio of peak day production to average day production of 1.93. This is below the minimum suggested factor of 2.0. As a result, a peak day factor of 2.0 will be used in all forecasted projections which are summarized in Table 2-15.

CONSUMPTION HISTORY

Meter data for the City is collected once a month. The City’s annual water consumption by customer class for the period 2009 to 2019, based on existing customer meter data, is presented in Table 2-5. The 2019 seasonal variation in consumption by customer class is shown in Table 2-6, which presents the monthly consumption for each class. Meters were not read in March 2019 due to prolonged snow. As a result, the April readings were divided evenly between March and April.

Table 2-7 presents the percentage use of each customer class from 2009 to 2019.
### TABLE 2-5

2009-2019 Average Daily Consumption by Customer Class (Gallons)

<table>
<thead>
<tr>
<th>Year</th>
<th>Single-Family</th>
<th>Multi-Family</th>
<th>Commercial/Industrial/Government</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>258,114</td>
<td>99,894</td>
<td>130,091</td>
<td>488,098</td>
</tr>
<tr>
<td>2010</td>
<td>225,476</td>
<td>102,299</td>
<td>109,203</td>
<td>436,979</td>
</tr>
<tr>
<td>2011</td>
<td>208,749</td>
<td>102,094</td>
<td>99,766</td>
<td>410,609</td>
</tr>
<tr>
<td>2012</td>
<td>231,261</td>
<td>93,958</td>
<td>96,729</td>
<td>421,948</td>
</tr>
<tr>
<td>2013</td>
<td>222,598</td>
<td>101,278</td>
<td>122,035</td>
<td>445,911</td>
</tr>
<tr>
<td>2014</td>
<td>230,893</td>
<td>99,768</td>
<td>126,209</td>
<td>456,870</td>
</tr>
<tr>
<td>2015</td>
<td>251,088</td>
<td>101,329</td>
<td>149,796</td>
<td>502,213</td>
</tr>
<tr>
<td>2016</td>
<td>228,934</td>
<td>96,201</td>
<td>116,540</td>
<td>441,675</td>
</tr>
<tr>
<td>2017</td>
<td>242,300</td>
<td>89,165</td>
<td>127,508</td>
<td>458,974</td>
</tr>
<tr>
<td>2018</td>
<td>239,719</td>
<td>78,290</td>
<td>122,648</td>
<td>440,657</td>
</tr>
<tr>
<td>2019</td>
<td>238,729</td>
<td>66,053</td>
<td>112,615</td>
<td>417,398</td>
</tr>
</tbody>
</table>

### TABLE 2-6

2019 Average Daily Consumption by Month and Customer Class (Gallons)

<table>
<thead>
<tr>
<th>Month</th>
<th>Single-Family</th>
<th>Multi-Family</th>
<th>Commercial/Industrial/Government</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>179,424</td>
<td>57,572</td>
<td>70,466</td>
<td>307,462</td>
</tr>
<tr>
<td>February</td>
<td>237,874</td>
<td>77,553</td>
<td>88,634</td>
<td>404,061</td>
</tr>
<tr>
<td>March(1)</td>
<td>191,755</td>
<td>51,175</td>
<td>61,313</td>
<td>304,243</td>
</tr>
<tr>
<td>April(1)</td>
<td>191,755</td>
<td>51,175</td>
<td>61,313</td>
<td>304,243</td>
</tr>
<tr>
<td>May</td>
<td>239,945</td>
<td>66,282</td>
<td>98,042</td>
<td>404,268</td>
</tr>
<tr>
<td>June</td>
<td>231,986</td>
<td>61,288</td>
<td>110,313</td>
<td>403,587</td>
</tr>
<tr>
<td>July</td>
<td>278,505</td>
<td>64,458</td>
<td>153,024</td>
<td>495,987</td>
</tr>
<tr>
<td>August</td>
<td>323,841</td>
<td>89,563</td>
<td>181,094</td>
<td>594,498</td>
</tr>
<tr>
<td>September</td>
<td>315,259</td>
<td>82,800</td>
<td>172,078</td>
<td>570,138</td>
</tr>
<tr>
<td>October</td>
<td>320,909</td>
<td>85,174</td>
<td>178,819</td>
<td>584,902</td>
</tr>
<tr>
<td>November</td>
<td>195,419</td>
<td>60,222</td>
<td>121,434</td>
<td>377,075</td>
</tr>
<tr>
<td>December</td>
<td>158,077</td>
<td>45,378</td>
<td>54,854</td>
<td>258,309</td>
</tr>
</tbody>
</table>

(1) Meters were not read in March 2019 due to snow, the April readings were split evenly between March and April.
TABLE 2-7

Percentage Consumption by Customer Class for 2009 Through 2019

<table>
<thead>
<tr>
<th>Year</th>
<th>Single-Family</th>
<th>Multi-Family</th>
<th>Commercial/Industrial/Government</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>52%</td>
<td>20%</td>
<td>28%</td>
<td>100%</td>
</tr>
<tr>
<td>2010</td>
<td>51%</td>
<td>23%</td>
<td>26%</td>
<td>100%</td>
</tr>
<tr>
<td>2011</td>
<td>51%</td>
<td>24%</td>
<td>25%</td>
<td>100%</td>
</tr>
<tr>
<td>2012</td>
<td>55%</td>
<td>22%</td>
<td>23%</td>
<td>100%</td>
</tr>
<tr>
<td>2013</td>
<td>50%</td>
<td>22%</td>
<td>28%</td>
<td>100%</td>
</tr>
<tr>
<td>2014</td>
<td>50%</td>
<td>22%</td>
<td>28%</td>
<td>100%</td>
</tr>
<tr>
<td>2015</td>
<td>50%</td>
<td>20%</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>2016</td>
<td>51%</td>
<td>21%</td>
<td>27%</td>
<td>100%</td>
</tr>
<tr>
<td>2017</td>
<td>54%</td>
<td>20%</td>
<td>26%</td>
<td>100%</td>
</tr>
<tr>
<td>2018</td>
<td>53%</td>
<td>17%</td>
<td>30%</td>
<td>100%</td>
</tr>
<tr>
<td>2019</td>
<td>57%</td>
<td>16%</td>
<td>27%</td>
<td>100%</td>
</tr>
</tbody>
</table>

DISTRIBUTION SYSTEM LEAKAGE

Distribution System Leakage (DSL) is defined as the difference between the total water produced and authorized consumption. The total water produced includes the metered production from the system’s sources. Authorized consumption includes both metered customer consumption and unmetered authorized consumption, such as main flushing and fire flows. The City’s water system staff estimates unmetered authorized consumption based on the information available.

Table 2-8 shows distribution system leakage estimated for 2009-2017. The Water Use Efficiency (WUE) Rule requires that water systems maintain a 3-year rolling average DSL of 10 percent or lower.
TABLE 2-8

**Distribution System Leakage**

<table>
<thead>
<tr>
<th>Year</th>
<th>Metered Production (MG)</th>
<th>Metered Use (MG)</th>
<th>DSL (MG)</th>
<th>3-year Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>230</td>
<td>181</td>
<td>49</td>
<td>21.3%</td>
</tr>
<tr>
<td>2010</td>
<td>213</td>
<td>162</td>
<td>52</td>
<td>24.2%</td>
</tr>
<tr>
<td>2011</td>
<td>185</td>
<td>152</td>
<td>33</td>
<td>18.0%</td>
</tr>
<tr>
<td>2012</td>
<td>192</td>
<td>156</td>
<td>36</td>
<td>18.6%</td>
</tr>
<tr>
<td>2013</td>
<td>199</td>
<td>163</td>
<td>37</td>
<td>18.4%</td>
</tr>
<tr>
<td>2014</td>
<td>199</td>
<td>167</td>
<td>32</td>
<td>16.3%</td>
</tr>
<tr>
<td>2015</td>
<td>205</td>
<td>180</td>
<td>25</td>
<td>12.1%</td>
</tr>
<tr>
<td>2016</td>
<td>195</td>
<td>163</td>
<td>32</td>
<td>16.3%</td>
</tr>
<tr>
<td>2017</td>
<td>207</td>
<td>169</td>
<td>38</td>
<td>18.5%</td>
</tr>
<tr>
<td>2018</td>
<td>212</td>
<td>164</td>
<td>48</td>
<td>22.8%</td>
</tr>
<tr>
<td>2019</td>
<td>206</td>
<td>152</td>
<td>53</td>
<td>25.9%</td>
</tr>
</tbody>
</table>

Between 2009 and 2019, the City’s 3-year rolling DSL average ranged between 14.9 and 22.4 percent. DSL increases in 2017 and 2018 coincided with the replacement of the source meters, suggesting that metered production before 2017 was actually under-represented. The DSL has consistently been above the Distribution System Leakage Standard of 10 percent maximum. As a result, the City must prepare a water loss control action plan. This plan can be found in Chapter 5, Water Use Efficiency.

**EQUIVALENT RESIDENTIAL UNITS**

An Equivalent Residential Unit (ERU) is a means to express water use by non-residential customers. One ERU is equivalent to water usage by one residential customer. An ERU is calculated by dividing the total volume of water utilized by the entire single-family customer class by the total number of single-family residential connections. This figure defines the average single-family residential water use and does not include distribution system leakage. The volume of water used by other customer classes can then be divided by this number to determine the equivalent residential units utilized by the other customer classes. Table 2-9 provides ERU values for 2009-2019. The average single-family residential water use for the City for that period is 158 gpd. Table 2-10 provides the number of water service connections by customer class, the average daily consumption for each class, the equivalent residential units, and the average ERUs per connection for 2019.
TABLE 2-9

Equivalent Residential Units for 2009 through 2019

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Single-Family Connections(3)</th>
<th>Average Daily Single-Family Water Consumption (gpd)(1)</th>
<th>ERU(ADD) (gpd)</th>
<th>ERU(MDD)(2) (gpd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1337</td>
<td>258,114</td>
<td>193</td>
<td>386</td>
</tr>
<tr>
<td>2010</td>
<td>1342</td>
<td>225,476</td>
<td>168</td>
<td>336</td>
</tr>
<tr>
<td>2011</td>
<td>1343</td>
<td>208,749</td>
<td>155</td>
<td>322</td>
</tr>
<tr>
<td>2012</td>
<td>1389</td>
<td>231,261</td>
<td>166</td>
<td>333</td>
</tr>
<tr>
<td>2013</td>
<td>1461</td>
<td>222,598</td>
<td>152</td>
<td>305</td>
</tr>
<tr>
<td>2014</td>
<td>1503</td>
<td>230,893</td>
<td>154</td>
<td>307</td>
</tr>
<tr>
<td>2015</td>
<td>1525</td>
<td>251,088</td>
<td>165</td>
<td>329</td>
</tr>
<tr>
<td>2016</td>
<td>1529</td>
<td>228,934</td>
<td>150</td>
<td>299</td>
</tr>
<tr>
<td>2017</td>
<td>1583</td>
<td>242,300</td>
<td>153</td>
<td>306</td>
</tr>
<tr>
<td>2018(3)</td>
<td>1,619</td>
<td>228,564</td>
<td>141</td>
<td>282</td>
</tr>
<tr>
<td>2019(3)</td>
<td>1,883</td>
<td>256,793</td>
<td>136</td>
<td>273</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>158</td>
<td>315</td>
</tr>
</tbody>
</table>

(1) Consumption ERU value based on metered single-family residential consumption.
(2) ERU(MDD) = Peak Day Factor * ERU(ADD) Where: Peak Day Factor = 2.0 from Table 2-4.
(3) Single family connections and average daily single-family water consumption were adjusted to reflect vacant units by assigning a weighted average corresponding to months of habitation.

TABLE 2-10

Equivalent Residential Units for 2019

<table>
<thead>
<tr>
<th>Customer Class</th>
<th>Number of Connections/Service Meters(1)</th>
<th>Average Daily Water Consumption (gpd)</th>
<th>Total ERUs(3)</th>
<th>Average ERUs per connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Family</td>
<td>1,949(1)</td>
<td>238,729</td>
<td>1,949</td>
<td>1</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>548(1)/159(2)</td>
<td>66,053</td>
<td>419</td>
<td>0.8/2.6</td>
</tr>
<tr>
<td>Commercial/Industrial/Government</td>
<td>248(1)</td>
<td>112,615</td>
<td>714</td>
<td>2.9</td>
</tr>
<tr>
<td>DSL</td>
<td>-</td>
<td>130,200</td>
<td>826</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>2,745</td>
<td>547,597</td>
<td>3,908</td>
<td>-</td>
</tr>
</tbody>
</table>

(1) From Table 2-1.
(2) From Table 2-2.
(3) Per 2009-2019 ERU Value of 158 gpd/ERU from Table 2-8.
HIGH USAGE CUSTOMERS

The ten customers with the highest water consumption in 2019 are summarized in Table 2-11 along with the annual water consumption and number of equivalent residential units (ERUs). These customers accounted for approximately 10 percent of 2019’s total water consumption.

**TABLE 2-11**

High Usage Customers

<table>
<thead>
<tr>
<th>Customer</th>
<th>Annual Consumption (gpd)(1)</th>
<th>Number of ERUs(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QFC</td>
<td>6,048</td>
<td>37</td>
</tr>
<tr>
<td>Safeway Inc.</td>
<td>4,813</td>
<td>29</td>
</tr>
<tr>
<td>Les Schwab</td>
<td>4,251</td>
<td>26</td>
</tr>
<tr>
<td>Si View Apartments</td>
<td>4,230</td>
<td>26</td>
</tr>
<tr>
<td>Arby’s Restaurant Group</td>
<td>3,992</td>
<td>24</td>
</tr>
<tr>
<td>Lakeshore Corporation</td>
<td>3,706</td>
<td>22</td>
</tr>
<tr>
<td>Red Oak</td>
<td>3,551</td>
<td>22</td>
</tr>
<tr>
<td>Sno Ridge Apts</td>
<td>3,501</td>
<td>21</td>
</tr>
<tr>
<td>Mt Si Chevron</td>
<td>3,489</td>
<td>21</td>
</tr>
<tr>
<td>North Bend Bar &amp; Grill</td>
<td>2,747</td>
<td>17</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>40,329</strong></td>
<td><strong>244</strong></td>
</tr>
</tbody>
</table>

(1) Annual Consumption based on 2019 data.
(2) Based on the 2009-2019 average ERU value of 158 gpd/ERU from Table 2-8.

PEAKING HOUR FACTOR

In order to estimate peak hour demands for the City, a peak hour peaking factor must be calculated from the ratio of peak day to peak hour demand. Peak hour demand was determined by using the DOH Water System Design Manual (Design Manual) guidelines for estimating peak hour demand. The equation used to estimate the peak hour demand is given as:

\[
PHD = (\text{ERU}_{\text{MDD}}/1440)\left[(C)(N) + F\right] + 18
\]

Where:
- \(PHD\) = Peak Hourly Demand, (gallons per minute, gpm)
- \(C\) = Coefficient Associated with Ranges of ERUs
- \(N\) = Number of ERUs based on the \(\text{ERU}_{\text{MDD}}\) value
- \(F\) = Factor Associated with Ranges of ERUs
- \(\text{ERU}_{\text{MDD}}\) = Maximum Day Demand per ERU

The equation was used to estimate the peak hour demand for 2019, where the number of ERUs based off max day demand equals 3,908. The C and F factors from the Design
Manual for this number of ERUs are 1.6 and 225, respectively. With an $ERU_{MDD}$ of 315, the calculated peak hourly demand equals 1,436 gpm for 2019. The ratio of peak hourly demand to peak day demand, (718 gpm) is therefore 2.0 for 2019. This corresponds with typical ratios for peak hour demand and will be used to project future peak hour demands for the City.

**FUTURE POPULATION AND WATER DEMANDS**

**SALLAL WHOLESALE WATER DEMAND PROJECTIONS**

The City and the neighboring Sallal Water Association (Sallal) are in the process of negotiating an agreement that would allow the City to provide wholesale water directly to the Sallal’s distribution system via a new intertie while also giving the City the opportunity to purchase Sallal mitigation water during periods of low instream flow.

The City contracted with Golder Associates to perform water demand projections using their existing projection model. This model projected water demands in the City’s RSA as well as potential future wholesale demands to Sallal. The model has calibrated these volumes to reflect projected growth and demands in both water systems. The wholesale demand projections are summarized in Table 2-12 below. The Golder projection memorandum can be found in Appendix F.

**TABLE 2-12**

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Day Sallal Wholesale Demand (gpd)$^{(1)}$</th>
<th>Peak Day Sallal Wholesale Demand (gpd)$^{(2)}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2021</td>
<td>19,699</td>
<td>50,823</td>
</tr>
<tr>
<td>2022</td>
<td>19,096</td>
<td>49,268</td>
</tr>
<tr>
<td>2023</td>
<td>19,644</td>
<td>50,682</td>
</tr>
<tr>
<td>2024</td>
<td>20,847</td>
<td>53,785</td>
</tr>
<tr>
<td>2025</td>
<td>22,548</td>
<td>58,174</td>
</tr>
<tr>
<td>2026</td>
<td>24,411</td>
<td>62,980</td>
</tr>
<tr>
<td>2027</td>
<td>25,836</td>
<td>66,657</td>
</tr>
<tr>
<td>2028</td>
<td>26,093</td>
<td>67,320</td>
</tr>
<tr>
<td>2029</td>
<td>28,630</td>
<td>73,865</td>
</tr>
<tr>
<td>2030</td>
<td>30,219</td>
<td>77,965</td>
</tr>
<tr>
<td>2040</td>
<td>52,240</td>
<td>134,779</td>
</tr>
</tbody>
</table>

*(1) From Golder Demand Projections Appendix F.*

*(2) Peak Day Sallal Wholesale = Average Day Sallal Wholesale * Peaking Factor Where: Peaking Factor = 2.58 (from Table 2-8, Draft 2020 Sallal WSP)*
PROJECTED POPULATION

Population projections for the 20-year planning horizon were estimated for the City’s water service area based on the population growth predictions in the City’s Comprehensive Plan and the Washington State Office of Financial Management’s population projections. With the help of these sources an annual growth rate of 2.5 percent was assumed for the City’s RSA. This growth rate will be used to project future water demands within the City’s Retail Service Area. Table 2-13 presents the projected population for the City’s Water Service Area through 2040; more detailed projections can be found in Table 2-15.

**TABLE 2-13**

Projected Population for North Bend Water Service Area

<table>
<thead>
<tr>
<th>Year</th>
<th>RSA Population(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>6,791</td>
</tr>
<tr>
<td>2030</td>
<td>8,693</td>
</tr>
<tr>
<td>2040</td>
<td>11,128</td>
</tr>
</tbody>
</table>

(1) Based on an annual growth rate of 2.5 percent.

WATER DEMAND PROJECTIONS

The City contracted with Golder Associates to perform water demand projections using their existing projection model. These projections encompassed 2020 through 2050 and assumed development would occur in the City, urban growth boundary, and unincorporated King County. Wholesale water sales to Sallal Water Service Area were also projected beginning in 2021, reflecting demands in both RSAs. A yearly DSL totaling 50 MG was chosen to reflect the status quo and was applied to all categories with the exception of potential wholesale water to Sallal. The full memorandum detailing these projections can be found in Appendix F.

The water demand projections produced by Golder Associates categorized water demands by the City’s 7 zoning classification. For the purposes of this WSP, these categories were reassigned to the customer categories summarized in Table 2-14.
### TABLE 2-14

**Water Demand Projection Recategorization**

<table>
<thead>
<tr>
<th><strong>2020 WSP Water Demand Projection Category</strong></th>
<th><strong>Golder Memorandum Water Demand Projection Category</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Day Production</td>
<td>City Water Service Area</td>
</tr>
<tr>
<td>Total Consumption</td>
<td>City Water Service Area (Minus DSL Factor)</td>
</tr>
<tr>
<td>Single-Family Consumption</td>
<td>Single Family Residential (Minus DSL Factor)</td>
</tr>
<tr>
<td>Multi-Family Consumption</td>
<td>Multi-Family Residential</td>
</tr>
<tr>
<td></td>
<td>Multi-Family Residential and Commercial (MF demand component) (Minus DSL Factor)</td>
</tr>
<tr>
<td>Commercial/Industrial/Government Consumption</td>
<td>Multi-Family Residential and Commercial (Commercial demand component)</td>
</tr>
<tr>
<td></td>
<td>Commercial</td>
</tr>
<tr>
<td></td>
<td>Employment Park</td>
</tr>
<tr>
<td></td>
<td>Parks/Open Space or Public Facility</td>
</tr>
<tr>
<td></td>
<td>Agricultural Irrigation (Minus DSL Factor)</td>
</tr>
<tr>
<td>Year</td>
<td>RSA Population (1)</td>
</tr>
<tr>
<td>------</td>
<td>-------------------</td>
</tr>
<tr>
<td>2020</td>
<td>6,791</td>
</tr>
<tr>
<td>2021</td>
<td>6,961</td>
</tr>
<tr>
<td>2022</td>
<td>7,135</td>
</tr>
<tr>
<td>2023</td>
<td>7,313</td>
</tr>
<tr>
<td>2024</td>
<td>7,496</td>
</tr>
<tr>
<td>2025</td>
<td>7,683</td>
</tr>
<tr>
<td>2026</td>
<td>7,875</td>
</tr>
<tr>
<td>2027</td>
<td>8,072</td>
</tr>
<tr>
<td>2028</td>
<td>8,274</td>
</tr>
<tr>
<td>2029</td>
<td>8,481</td>
</tr>
<tr>
<td>2030</td>
<td>8,693</td>
</tr>
<tr>
<td>2040</td>
<td>11,128</td>
</tr>
</tbody>
</table>

(1) Based on 2.5 percent RSA population increase, consistent with Table 2.13.
(2) All consumption projections based on Golder water projections detailed Water Demand Projections Memorandum located in Appendix F.
(3) The daily equivalent of 50 million gallons per year of water loss via DSL.
(4) The sum of DSL and Total Consumption.
(5) Based on a Peak Day Production to Average Day Production ratio of 2.0 from Table 2-12.
(6) Based on a PHD to Peak Day Production ratio of 2.0.
(7) Number of ERUs = Average day production/ERU_ADD Where ERU_ADD = 158 gpd (as shown in Table 2-8).
(8) Includes Alpine Water Association demand as they are presently billed as a single 2-inch multi-family unit.
CHAPTER 3

SYSTEM ANALYSIS

Water system planning is based on an analysis of a water utility’s ability to meet minimum level of service standards for existing and future customers. This chapter first outlines the design standards developed to meet criteria specific to the City of North Bend water system. These standards are then followed by a water quality and facility analysis comparing these design standards to the existing water quality and system facilities. This comparison will help identify water system deficiencies and inform recommendations and projects to improve standard compliance.

SYSTEM DESIGN STANDARDS

Performance and design criteria typically address the sizing and reliability requirements for source, storage, distribution, fire flow and water quality. Construction standards set forth the materials and construction methods that contractors, developers, and the City must follow when constructing water system facility improvements. Construction standards, including developer extension guidelines, have been developed for the City and are provided in Appendix G. When any water system work is performed outside of City limits and within King County right-of-way, the applicable King County Standards must be followed. These can be obtained through the County. In this chapter, the design standards are divided between two categories: general facility standards and water quality standards and are discussed below as follows:

GENERAL FACILITY STANDARDS

1. Average and Peak Day Flow
2. Peak Hour Flow
3. Storage Requirements
4. Minimum System Pressure
5. Minimum Pipe Sizes
6. Backup Power Requirements
7. Valve and Hydrant Spacing

WATER QUALITY STANDARDS

1. Applicable Drinking Water Regulations
2. Existing Drinking Water Quality Standards
3. Anticipated Future Drinking Water Quality Standards
4. Water Quality Monitoring Schedule
GENERAL FACILITY STANDARDS

The Washington State Department of Health (DOH) relies on various publications, agencies, and the utility itself to develop and establish design criteria.

WAC 246-290-200, Design Standards, lists the various criteria allowed by the DOH. A brief description of the most widely recognized performance and design standards follows. Table 3-1 provides a summary of the minimum allowable design standards. Table 3-2 provides a comparison between the DOH Waterworks Standards and the City of North Bend standards with regard to general facility requirements.

- Water System Design Manual, Washington State Department of Health (DOH), (October 2019)

This manual serves as a guideline for the preparation of plans and specifications for Group A public water systems in compliance with WAC 246-290.

The City’s Design and Construction Standards for Water Systems are provided in Appendix K. Any work completed in King County rights-of-way shall also comply with the 2016 King County Road Standards, including any amendments or revisions. In the event of a conflict between these standards the one which provides for a higher level of public safety shall take precedence.
### TABLE 3-1

Published References of Water System Design Standards

<table>
<thead>
<tr>
<th>Standard and Authority</th>
<th>Source Development</th>
<th>Booster Pump Stations</th>
<th>Distribution</th>
<th>Storage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A Public Water System Design Manual, 2019.</td>
<td>The quantity of water at the source should:</td>
<td>• Booster pumping facilities shall be designed to accommodate at least the next 10 years of system development.</td>
<td>• Minimum main diameter must be determined by hydraulic analysis.</td>
<td>• Storage capacity calculations must consider the sum of:</td>
</tr>
<tr>
<td></td>
<td>• Have sufficient capacity and water rights to meet maximum day demand (MDD) while concurrently replenishing depleted fire suppression within a 72-hour period.</td>
<td>• Standby power must be considered for all new closed system booster pump stations. A manual transfer may be sufficient if it can occur within a reasonable time according to established operating procedures.</td>
<td>• Minimum diameter of all distribution mains shall be 6-inch for fire flow systems. Smaller diameter mains may be justified for non fire flow systems.</td>
<td>1. Operational storage, as needed to control pump cycling.</td>
</tr>
<tr>
<td></td>
<td>• Sources capable of supplying MDD within a 24-hour period.</td>
<td>• Booster pump design capacity must take into account fire flow requirements.</td>
<td>• New systems or additions shall provide the design quantity at 30 psi minimum under peak hourly demand at all points in the distribution system.</td>
<td>2. Equalizing storage, $ES = (PHD - QS) \times (T min)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Required fire flow must be provided in addition to MDD at a minimum of 20 psi.</td>
<td>o $ES = $ Equalizing storage</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o $PHD = $ Peak hour demand</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3. Standby Storage, $SB = (N) \times (SBi)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o $SB = $ Total standby storage component, or equivalent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o $SBi = ERU_{MDD}$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o $N = $ Number of ERUs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4. Fire Suppression Storage, $FSS = (FF) \times (T_m)$</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o $FF = $ Required fire flow rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>o $T_m = $ duration of fire flow rate</td>
</tr>
</tbody>
</table>
### TABLE 3-2
General Facility Requirements

<table>
<thead>
<tr>
<th>Standard</th>
<th>DOH Water System Design Manual</th>
<th>City of North Bend Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Average Day and Peak Day Demand</strong></td>
<td>Average day demand should be determined from previous actual water use data. Maximum day demand is estimated at 1.35 to 1.65 times the maximum month’s average day demand if daily metered data is not available.</td>
<td>Average day demand is determined using consumption and production data from 2009 to 2019. Maximum day demand was determined by examining peak day production for the last ten years. An average peaking factor of 1.93 was identified, though a more conservative factor of 2.0 is used.</td>
</tr>
</tbody>
</table>
| **Peak Hour Demand**                         | Peak hour demand is determined using the following equation:  
 PHD = ERU_{MDD}/1440 * (C*N + F) +18  
 o PHD = Peak hourly demand (gpm)  
 o ERU_{MDD} = Daily demand per ERU, calculated using peak day single-family housing unit demand (gpd)  
 o C = Coefficient *  
 o F = Factor of range*  
 o N = Number of ERUs, calculated using peak day demand and ERU_{MDD}  
 *From Table 3-1 of DOH Water System Demand Manual. | Peak hour demand is determined using the peaking factor calculated using the DOH Water System Design Manual equation outlined in the neighboring cell. The City used the value of 2.05 that was calculated from its data. |
| **Storage**                                  | The sum of:  
 • Operational Storage (OS)  
 • Equalizing Storage (ES)  
 • Standby Storage (SB) *  
 • Fire Suppression Storage (FSS), if applicable*  
 • Dead Storage (DS)  
 *Standby storage and fire suppression storage may be nested if permitted by the local fire authority. | The sum of:  
 • Operational Storage (OS)  
 • Equalizing Storage (ES)  
 • Standby Storage (SB)  
 • Fire Suppression Storage (FSS), if applicable  
 • Dead Storage (DS)  
 Refer to storage analysis in Chapter 3 for further details. |
| **Minimum Pipe Sizes**                       | The minimum size for a transmission line shall be determined by hydraulic analysis. The minimum size distribution system line shall not be less than 6 inches in diameter unless a hydraulic analysis justifies another size. | The minimum size for a transmission line shall be determined by hydraulic analysis. The minimum size distribution system shall not be less than 6 inches in diameter. |
| **Minimum System Pressure**                 | The system should be designed to maintain a minimum of 30 psi in the distribution system under peak hour demand when all operational and equalizing storage is depleted, and 20 psi under fire flow plus maximum day demand conditions when all fire suppression storage is depleted. | The system should be designed to maintain a minimum of 30 psi in the distribution system under peak hour demand when all operational and equalizing storage is depleted, and 20 psi under fire flow plus maximum day demand conditions when all fire suppression storage is depleted. |
TABLE 3-2 – (continued)

General Facility Requirements

<table>
<thead>
<tr>
<th>Standard</th>
<th>DOH Water System Design Manual</th>
<th>City of North Bend Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve and Hydrant</td>
<td>• Sufficient valving to minimize customer service disruption when water is turned off for</td>
<td>• Two or more sources capable of replenishing fire suppression storage within a 72-hour period.</td>
</tr>
<tr>
<td>Spacing</td>
<td>maintenance or repair at a minimum of 800 feet.</td>
<td>• Sources must meet ADD with largest source out of service.</td>
</tr>
<tr>
<td></td>
<td>• Fire hydrants should be provided with their own auxiliary gate valve.</td>
<td>• Back-up power equipment for pump stations unless there are two independent public power</td>
</tr>
<tr>
<td>Reliability</td>
<td></td>
<td>sources.</td>
</tr>
<tr>
<td>Recommendations</td>
<td>• Sources should be capable of replenishing fire suppression storage within a 72-hour period</td>
<td>• Provision of multiple storage tanks.</td>
</tr>
<tr>
<td></td>
<td>while concurrently supplying MDD.</td>
<td>• Low and high level storage alarms.</td>
</tr>
<tr>
<td></td>
<td>• Sources capable of supplying MDD within a 20-hour period.</td>
<td>• Looping of distribution mains when feasible.</td>
</tr>
<tr>
<td></td>
<td>• Sources must meet ADD with largest source out of service.</td>
<td>• Pipeline velocities not&gt;8 fps at PHD.</td>
</tr>
<tr>
<td></td>
<td>• If water system power is unreliable, one of more of the following measures should be adopted:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ In place auxiliary power, connect pump station to different substations (when available),</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Construct adequate gravity standby storage,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ Connect to two independent primary public power sources.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Provision of multiple storage tanks.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Low and high level storage alarms.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Looping of distribution mains when feasible.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Pipeline velocities not&gt;8 fps at PHD.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Flushing velocities of 3 fps for all pipelines.</td>
<td></td>
</tr>
</tbody>
</table>

Valve and hydrant standards are outlined in the City’s Design and Construction Standards for Water Systems, given in Appendix G.
WATER QUALITY STANDARDS

APPLICABLE DRINKING WATER QUALITY REGULATIONS

Water quality monitoring is an important part of both regulatory compliance and water system oversight. Table 3-3 lists the existing and future drinking water regulations and the status of each regulation. Some regulations are not included, as they do not apply to the City’s water system. For example, filter Backwash Water Rule is not listed nor is it applicable or discussed.

Existing state law contains regulations for bacteriological contaminants, inorganic chemicals and inorganic physical parameters (IOCs), volatile organic chemicals (VOCs), synthetic organic chemicals (SOCs), radionuclides, total trihalomethanes (TTHMs) and haloacetic acids (HAA5s).

Many of the regulations shown in Table 3-2 define water quality standards and establish water quality monitoring schedules. The implementation schedules for the regulations are subject to revision and the City should continue to stay informed regarding regulatory deadlines.

**Table 3-3**

**Drinking Water Regulations**

<table>
<thead>
<tr>
<th>Drinking Water Regulation(1)</th>
<th>Contaminants Affected(2)</th>
<th>City Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revised Total Coliform Rule</td>
<td>Coliform</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Stage 1 Disinfectants/Disinfection Byproducts Rule (D/DBPR)</td>
<td>TTHMs, HAA5, Chlorite, Bromate</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Residual Disinfectant</td>
<td>Total Free Chlorine</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Lead and Copper Rule</td>
<td>Lead, Copper</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Inorganic Chemicals and Physical Parameters</td>
<td>IOCs</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Volatile and Synthetic Organic Compounds</td>
<td>VOCs, SOCs</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Surface Water Treatment Rule</td>
<td>Microbial Contaminants</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Information Collection Rule</td>
<td>Bacteriological</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Consumer Confidence Report</td>
<td>Reporting Only</td>
<td>Reporting</td>
</tr>
<tr>
<td>Unregulated Contaminant Monitoring Rule</td>
<td>IOCs, VOCs, SOCs</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Asbestos</td>
<td>Asbestos</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Arsenic Rule</td>
<td>Arsenic</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Radionuclide Rule</td>
<td>Radionuclides</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Arsenic Rule</td>
<td>Arsenic</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Groundwater Rule</td>
<td>Bacteriological</td>
<td>Monitoring</td>
</tr>
<tr>
<td>Stage 2 Disinfection/Byproducts Rule</td>
<td>Additional public health protection from DBP and microbial pathogens</td>
<td>Monitoring</td>
</tr>
</tbody>
</table>

(1) Drinking water regulations as of January 2020.
(2) TTHM = Total Trihalomethanes; HAA5 = Five Haloacetic Acids; IOCs = Inorganic Chemical and Physical Characteristics; VOCs = Volatile Organic Chemicals; SOCs = Synthetic Organic Compounds

WATER QUALITY STANDARDS AND ANALYSIS

Minimum standards for water quality are specified in terms of Maximum Contaminant Levels (MCLs). Primary MCLs are based on chronic and/or acute human health effects. Secondary MCLs are based on factors other than health effects, including aesthetics. MCLs are specified in WAC 246-290 and described in the following pages and tables. Water quality data and a monitoring schedule are presented later in this chapter.

REVISED TOTAL COLIFORM RULE

Description

Coliform bacteria describe a broad category of organisms routinely monitored in potable water supplies. Though not all coliform bacteria are pathogenic in nature, they are relatively easy to identify in laboratory analysis and they represent an indicator organism. If coliform bacteria are detected, then pathogenic organisms may also be present. Bacterial contamination in a water supply can cause a number of water borne diseases, so these tests are strictly monitored and regulated by the DOH.

WAC 246-290 establishes bacteriological testing requirements for public water systems. Compliance with this rule is based on the presence/absence of total coliforms. The number of routine samples required depends on the system size.

The Revised Total Coliform Monitoring Rule specifies each total coliform positive routine sample must be tested for the presence of E. coli.; if any total coliform positive sample is also E. coli. positive, then the sample must be reported to the state by the end of the day. If a routine sample is positive for total coliform, repeat samples are required.

Within 24 hours of learning of the total coliform positive sample result, at least three repeat samples must be collected and analyzed for total coliform. One repeat sample must be collected from the same tap as the original sample, one repeat sample must be collected within five service connections upstream, and one repeat sample must be collected within five service connections downstream. If one or more repeat sample is positive for total coliform, the sample must be analyzed for E. coli. If the total coliform positive sample is positive for E. coli, the sample must be reported to the state. Another set of repeat samples must then be collected unless an assessment has been triggered and the state has been notified.

Monitoring Requirements and Analysis

The City monitors for bacteriological contaminants in accordance with its Water Quality Monitoring Plan, which is included in Appendix H. The number of required monthly
samples is provided annually from DOH on the Water Quality Monitoring Report. Samples are collected to cover each pressure zone, reservoir outfall, and source distribution area. The monitoring program specifies the collection of samples on a rotating basis, such that the sites are resampled each quarter. Regulations for bacteriological testing schedule are given in WAC 246-290-300(3). The City is required by DOH to collect six routine coliform samples per month.

The City had no coliform violations between 2009 and 2019.

**Residual Disinfectant**

Water in the distribution system must maintain a residual disinfectant concentration of at least 0.2 mg/L. For groundwater systems that are required to disinfect, systems are required to have a CT (concentration of chlorine (mg/l) multiplied by contact time (min)) of 6 in accordance with WAC 246-260-451. Residual disinfectant concentration within the distribution system is measured at the same time and location that routine coliform samples are collected.

The City has been in compliance with its residual disinfectant standards.

**CONSUMER CONFIDENCE REPORT**

**Description and Requirements**

The Consumer Confidence Report Rule requires community water system purveyors to prepare and distribute an annual report of water quality analyses to their customers. The City is required to submit the report to its customers by the 1st of July each year. A copy of the City’s 2019 Annual Water Quality Report is included in Appendix H.

**INORGANIC PHYSICAL AND CHEMICAL CHARACTERISTICS**

**Description**

WAC 246-290-310 specifies primary and secondary MCLs for inorganic physical and chemical characteristics. Primary MCLs are based on health effects, and secondary MCLs are based on factors other than health effects, such as aesthetics. Three chemicals, lead, copper, and sodium do not have primary or secondary MCLs, but are required to be monitored along with other IOCs. Lead and copper are regulated under the Lead and Copper Rule, described in detail later in this chapter. Primary and secondary MCLs for inorganic chemical and physical characteristics are summarized in Tables 3-4 and 3-5, respectively.
### TABLE 3-4

**Primary Water Quality Standards Inorganic Chemical Characteristics**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Primary MCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antimony (Sb)</td>
<td>0.006 mg/L</td>
</tr>
<tr>
<td>Arsenic (As)</td>
<td>0.01 mg/L</td>
</tr>
<tr>
<td>Asbestos</td>
<td>7 million fibers/liter (length &gt; 10 microns)</td>
</tr>
<tr>
<td>Barium (Ba)</td>
<td>2.0 mg/L</td>
</tr>
<tr>
<td>Beryllium (Be)</td>
<td>0.004 mg/L</td>
</tr>
<tr>
<td>Cadmium (Cd)</td>
<td>0.005 mg/L</td>
</tr>
<tr>
<td>Chromium (Cr)</td>
<td>0.1 mg/L</td>
</tr>
<tr>
<td>Copper (Cu)</td>
<td>1.3 mg/L (Action Level, EPA)</td>
</tr>
<tr>
<td>Cyanide (HCN)</td>
<td>0.2 mg/L</td>
</tr>
<tr>
<td>Fluoride (F)</td>
<td>4.0 mg/L</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>0.015 mg/L (Action Level, EPA)</td>
</tr>
<tr>
<td>Mercury (Hg)</td>
<td>0.002 mg/L</td>
</tr>
<tr>
<td>Nickel (Ni)</td>
<td>0.1 mg/L</td>
</tr>
<tr>
<td>Nitrate (as N)</td>
<td>10.0 mg/L</td>
</tr>
<tr>
<td>Nitrite (as N)</td>
<td>1.0 mg/L</td>
</tr>
<tr>
<td>Selenium (Se)</td>
<td>0.05 mg/L</td>
</tr>
<tr>
<td>Sodium (Na)</td>
<td>20 mg/L (EPA recommendation)</td>
</tr>
<tr>
<td>Thallium (Tl)</td>
<td>0.002 mg/L</td>
</tr>
</tbody>
</table>

Source: WAC 246-290-310.

### TABLE 3-5

**Secondary Water Quality Standards Inorganic Chemical and Physical Characteristics**

<table>
<thead>
<tr>
<th>Chemical/Characteristic</th>
<th>Secondary MCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloride (Cl)</td>
<td>250.0 mg/L</td>
</tr>
<tr>
<td>Fluoride (F)</td>
<td>2.0 mg/L</td>
</tr>
<tr>
<td>Iron (Fe)</td>
<td>0.3 mg/L</td>
</tr>
<tr>
<td>Manganese (Mn)</td>
<td>0.05 mg/L</td>
</tr>
<tr>
<td>Silver (Ag)</td>
<td>0.1 mg/L</td>
</tr>
<tr>
<td>Sulfate (SO4)</td>
<td>250.0 mg/L</td>
</tr>
<tr>
<td>Zinc (Zn)</td>
<td>5.0 mg/L</td>
</tr>
<tr>
<td>Color</td>
<td>15 Color Units</td>
</tr>
<tr>
<td>Specific Conductivity</td>
<td>700 umhos/cm</td>
</tr>
<tr>
<td>Total Dissolved Solids (TDS)</td>
<td>500 mg/L</td>
</tr>
</tbody>
</table>

Source: WAC 246-290-310.
Monitoring Requirements and Analysis

Groundwater sources must be sampled for inorganics once every 3 years, unless a monitoring waiver is granted by DOH. Nitrate samples are required annually and nitrite samples are required once every three years. Because nitrates and nitrites are included in Inorganic Chemical (IOC) sampling, additional individual samples are not required in years when an IOC is taken from the source.

The City has a monitoring waiver for IOCs allowing for less frequent testing of inorganics, with the exception for lead, copper, and nitrates. Samples from the Centennial Well and Mount Si Spring were most recently tested for IOC samples in August of 2011. Table 3-6 provides results only for IOCs above the state reporting limit. Sample parameters that were listed as “not detected” or “less than” by the laboratory are omitted from the table.

No samples exceeded the primary or secondary EPA standards.

**TABLE 3-6**

Inorganic Source Water Quality\(^{(1)}\)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MCL</th>
<th>Spring Pump</th>
<th>Station Faucet</th>
<th>Centennial Well</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EPA Regulated Primary Standards</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arsenic</td>
<td>0.01</td>
<td>0.0072</td>
<td>0.0024</td>
<td></td>
<td>mg/L</td>
</tr>
<tr>
<td>Nitrate</td>
<td>10.0</td>
<td>0.51</td>
<td>0.50</td>
<td></td>
<td>mg/L</td>
</tr>
<tr>
<td>Nitrate &amp; Nitrite</td>
<td>10.0</td>
<td>0.51</td>
<td>0.50</td>
<td></td>
<td>mg/L</td>
</tr>
<tr>
<td><strong>EPA Regulated Secondary Standards</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sulfate</td>
<td>250</td>
<td>10</td>
<td>50</td>
<td></td>
<td>mg/L</td>
</tr>
<tr>
<td>Hardness (as CaCO(_3))</td>
<td>N/A</td>
<td>35</td>
<td>83</td>
<td></td>
<td>mg/L</td>
</tr>
<tr>
<td>Conductivity</td>
<td>700</td>
<td>90</td>
<td>180</td>
<td>umhos/cm</td>
<td></td>
</tr>
<tr>
<td>Turbidity</td>
<td>1</td>
<td>0.12</td>
<td>0.27</td>
<td>NTU</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>15</td>
<td>5</td>
<td>5</td>
<td>Unit</td>
<td></td>
</tr>
<tr>
<td><strong>Other Tested Parameters</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>N/A</td>
<td>6.4</td>
<td>7</td>
<td>Unit</td>
<td></td>
</tr>
<tr>
<td>Alkalinity (as CaCO(_3))</td>
<td>N/A</td>
<td>24</td>
<td>N/A</td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Calcium</td>
<td>N/A</td>
<td>14</td>
<td>27</td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Magnesium</td>
<td>N/A</td>
<td>1.5</td>
<td>3.9</td>
<td>mg/L</td>
<td></td>
</tr>
<tr>
<td>Silica as SiO(_2)</td>
<td>N/A</td>
<td>11</td>
<td>N/A</td>
<td>mg/L</td>
<td></td>
</tr>
</tbody>
</table>

\(^{(1)}\)  Those parameters that were not detected above state reporting limits are omitted from this table.
ARSENIC

Description

Long-term exposure to low concentrations of arsenic in drinking water can lead to skin, bladder, lung, or prostate cancer. Non-cancer effects of ingesting arsenic at low levels include cardiovascular disease, diabetes, and anemia, as well as reproductive, developmental, immunological, and neurological effects. The EPA’s Arsenic MCL is 0.01 mg/L.

Monitoring Requirements and Analysis

The Arsenic Rule makes monitoring requirements consistent with monitoring for other IOCs. Groundwater sampling for arsenic is required once every 3 years. Any system that has a sampling point monitoring result exceed the MCL must increase the frequency of monitoring at that sampling point to quarterly sampling. Compliance with the MCL is based on the running annual average of the samples. Systems triggered into increased monitoring are not be considered in violation of the MCL until they have completed 1 year of quarterly sampling. However, if any sample result will cause the running annual average to exceed the MCL at any sampling point, the system is out of compliance with the MCL immediately.

IOC sample analyses were taken most recently in 2016 and 2019. In 2019 arsenic levels at Mount Si Springs were 0.0072 mg/l and 0.0024 mg/L the centennial well. Both values were below the 0.01 mg/l MCL.

VOLATILE ORGANIC COMPOUNDS AND SYNTHETIC ORGANIC COMPOUNDS

Description

Volatile organic chemicals (VOCs) are manufactured, carbon-based chemicals that vaporize quickly at normal temperatures and pressures. VOCs include many hydrocarbons associated with fuels, paint thinners, and solvents. This group does not include organic pesticides, which are regulated separately as synthetic organic chemicals (SOCs). VOCs are divided into the two following groups:

1. Regulated VOCs that have been determined to post a significant risk to human health.

2. Unregulated VOCs for which the level of risk to human health has not been established.
There are currently 21 regulated volatile organic Chemicals (VOCs) and 33 regulated Synthetic Organic Chemicals (SOCs). A list of these compounds and their MCLs is included in Tables 3-7 and 3-8.

**Monitoring Requirements and Analysis**

Per the DOH requirements, SOC and VOCs must be sampled once every 3 years, unless a waiver is in place. The City had an SOC and VOC monitoring waiver for 2014, but was required to sample at both Mount Si Springs and the Centennial well in 2011 and 2014. No VOCs or SOCs were detected during any of the analyses.

**TABLE 3-7**

<table>
<thead>
<tr>
<th>Synthetic Organic Chemical</th>
<th>Federal Regulation</th>
<th>Primary MCL (mg/L)(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arochlor</td>
<td>Phase II</td>
<td>0.002</td>
</tr>
<tr>
<td>Aldicarb</td>
<td>Phase II(2)</td>
<td>0.003</td>
</tr>
<tr>
<td>Aldicarb sulfone</td>
<td>Phase II(2)</td>
<td>0.003</td>
</tr>
<tr>
<td>Aldicarb sulfoxide</td>
<td>Phase II(2)</td>
<td>0.004</td>
</tr>
<tr>
<td>Atrazine</td>
<td>Phase II</td>
<td>0.003</td>
</tr>
<tr>
<td>Carbofuran</td>
<td>Phase II</td>
<td>0.04</td>
</tr>
<tr>
<td>Chlordane</td>
<td>Phase II</td>
<td>0.002</td>
</tr>
<tr>
<td>Dibromochloro-propane</td>
<td>Phase II</td>
<td>0.0002</td>
</tr>
<tr>
<td>2,4-D</td>
<td>Phase II</td>
<td>0.07</td>
</tr>
<tr>
<td>Ethylene dibromide</td>
<td>Phase II</td>
<td>0.00005</td>
</tr>
<tr>
<td>Heptachlor</td>
<td>Phase II</td>
<td>0.0004</td>
</tr>
<tr>
<td>Heptachlor epoxide</td>
<td>Phase II</td>
<td>0.0002</td>
</tr>
<tr>
<td>Lindane</td>
<td>Phase II</td>
<td>0.0002</td>
</tr>
<tr>
<td>Methoxychlor</td>
<td>Phase II</td>
<td>0.04</td>
</tr>
<tr>
<td>Polychlorinated biphenyls (PCBs)</td>
<td>Phase II</td>
<td>0.0005</td>
</tr>
<tr>
<td>Pentachlorophenol</td>
<td>Phase II</td>
<td>0.001</td>
</tr>
<tr>
<td>Toxaphene</td>
<td>Phase II</td>
<td>0.003</td>
</tr>
<tr>
<td>2,4,5-TP</td>
<td>Phase II</td>
<td>0.05</td>
</tr>
<tr>
<td>Benzo(a)pyrene</td>
<td>Phase V</td>
<td>0.0002</td>
</tr>
<tr>
<td>Dalapon</td>
<td>Phase V</td>
<td>0.2</td>
</tr>
<tr>
<td>Di(2-ethylhexyl) adipate</td>
<td>Phase V</td>
<td>0.4</td>
</tr>
<tr>
<td>Di(2-ethylhexyl) phthalate</td>
<td>Phase V</td>
<td>0.006</td>
</tr>
<tr>
<td>Dinoseb</td>
<td>Phase V</td>
<td>0.007</td>
</tr>
<tr>
<td>Diquat</td>
<td>Phase V</td>
<td>0.02</td>
</tr>
<tr>
<td>Endothall</td>
<td>Phase V</td>
<td>0.1</td>
</tr>
<tr>
<td>Endrin</td>
<td>Phase V</td>
<td>0.002</td>
</tr>
<tr>
<td>Glyphosate</td>
<td>Phase V</td>
<td>0.7</td>
</tr>
<tr>
<td>Hexachlorobenzene</td>
<td>Phase V</td>
<td>0.001</td>
</tr>
</tbody>
</table>
### TABLE 3-7 – (continued)

**Regulated Synthetic Organic Chemicals (SOC)**

<table>
<thead>
<tr>
<th>Synthetic Organic Chemical</th>
<th>Federal Regulation</th>
<th>Primary MCL (mg/L)(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexachloro Cyclopentadiene</td>
<td>Phase V</td>
<td>0.05</td>
</tr>
<tr>
<td>Oxamyl (vydate)</td>
<td>Phase V</td>
<td>0.2</td>
</tr>
<tr>
<td>Picloram</td>
<td>Phase V</td>
<td>0.5</td>
</tr>
<tr>
<td>Simazine</td>
<td>Phase V</td>
<td>0.004</td>
</tr>
<tr>
<td>2,3,7,8-TCDD (dioxin)</td>
<td>Phase V</td>
<td>3x10-8</td>
</tr>
</tbody>
</table>

(1) 40 CFR 141.61(a) & (c); adopted by State Board of Health.
(2) Delayed; reproposal of MCLs for aldicarb compounds expected in the future.

### TABLE 3-8

**Regulated Volatile Organic Chemicals (VOC)**

<table>
<thead>
<tr>
<th>Volatile Organic Chemical</th>
<th>Federal Regulation</th>
<th>Primary MCL (mg/L)(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vinyl Chloride</td>
<td>Phase I</td>
<td>0.002</td>
</tr>
<tr>
<td>Benzene</td>
<td>Phase I</td>
<td>0.005</td>
</tr>
<tr>
<td>Carbon Tetrachloride</td>
<td>Phase I</td>
<td>0.005</td>
</tr>
<tr>
<td>1,2-Dichloroethane</td>
<td>Phase I</td>
<td>0.005</td>
</tr>
<tr>
<td>Trichloroethylene</td>
<td>Phase I</td>
<td>0.005</td>
</tr>
<tr>
<td>para-Dichlorobenzene</td>
<td>Phase I</td>
<td>0.075</td>
</tr>
<tr>
<td>1,1-dichloroethylene</td>
<td>Phase I</td>
<td>0.007</td>
</tr>
<tr>
<td>1,1,1-Trichloroethane</td>
<td>Phase I</td>
<td>0.2</td>
</tr>
<tr>
<td>cis-1,2-Dichloroethylene</td>
<td>Phase II</td>
<td>0.07</td>
</tr>
<tr>
<td>1,2-Dichloropropane</td>
<td>Phase II</td>
<td>0.005</td>
</tr>
<tr>
<td>Ethylbenzene</td>
<td>Phase II</td>
<td>0.7</td>
</tr>
<tr>
<td>Monochlorobenzene</td>
<td>Phase II</td>
<td>0.1</td>
</tr>
<tr>
<td>Ortho-Dichlorobenzene</td>
<td>Phase II</td>
<td>0.6</td>
</tr>
<tr>
<td>Styrene</td>
<td>Phase II</td>
<td>0.1</td>
</tr>
<tr>
<td>Tetrachloroethylene</td>
<td>Phase II</td>
<td>0.005</td>
</tr>
<tr>
<td>Toluene</td>
<td>Phase II</td>
<td>1</td>
</tr>
<tr>
<td>Trans-1,2-Dichloroethylene</td>
<td>Phase II</td>
<td>0.1</td>
</tr>
<tr>
<td>Xylenes (total)</td>
<td>Phase II</td>
<td>10</td>
</tr>
<tr>
<td>Dichloromethane</td>
<td>Phase V</td>
<td>0.005</td>
</tr>
<tr>
<td>1,2,4-Trichloro-benzene</td>
<td>Phase V</td>
<td>0.07</td>
</tr>
<tr>
<td>1,1,2-Thrchloro-ethane</td>
<td>Phase V</td>
<td>0.005</td>
</tr>
</tbody>
</table>

(1) 40 CFR 141.61(a) & (c); adopted by State Board of Health.
ASBESTOS

Asbestos is the name for a group of naturally occurring, hydrated silicate minerals with fibrous morphology. Included in this group are chrysotile, crocidolite, amosite, and the fibrous varieties of anthophyllite, tremolite, and actinolite. Most commercially mined asbestos is chrysotile. Asbestos’ flexibility, strength, and chemical and heat resistance properties that have adapted it to many uses including building insulation, brake linings, and water pipe.

There is concern with the health risks associated with asbestos. Several studies and case histories have documented the hazards to internal organs as a result of inhalation of asbestos fibers. Data is limited on the effects of ingestion of asbestos fibers or on the effects of inhalation exposure from drinking water. Ingestion studies have not caused cancer in laboratory animals, although studies of asbestos workers have shown increased rates of gastrointestinal cancer.

Monitoring Requirements and Analysis

The City of North Bend’s distribution system contains asbestos cement waterlines; therefore, it is required to monitor for asbestos. For utilities with asbestos pipe in the distribution system, one sample in an area with AC pipe is required every 9 years in accordance with Part 40 Code of Federal Regulations 141,23 (b). The MCL for asbestos is 7 million fibers/liter. Asbestos analysis was carried out in May of 2019 and a concentration of 0.1210 million fibers/liter was detected, well below the MCL.

LEAD AND COPPER

Description

In 1991, the EPA promulgated the Federal Lead and Copper Rule. The State of Washington adopted this rule in 1995, with minimal changes. The Lead and Copper Rule is intended to reduce the tap water concentrations of lead and copper that can occur when corrosive source water causes lead and copper to leach from water meters and other plumbing fixtures.

Monitoring Requirements and Analysis

Based on the requirements of the EPA Lead and Copper Rule (40 CFR 141), initially lead and copper monitoring was to be completed for two consecutive 6-month monitoring periods. If lead and copper action levels were not exceeded, then the number of samples was reduced to one-half the original number for three consecutive annual periods. If compliance with the action level was maintained, reduced sampling continued once every 3 years thereafter.
Ninety percent of the distribution system lead samples collected according to the procedures outlined in WAC 246-290 must have concentrations below the “Action Level” of 0.015 mg/L. Similarly, 90 percent of the copper samples must have concentrations less than 1.3 mg/L. Systems exceeding the action levels are required to provide public notification and implement a program for reducing lead and copper levels.

The City took lead and copper samples in 2011, 2014, and 2017. All samples were below the action levels for both lead and copper. In 2017, 90 percent of the distribution system lead concentration were at or below 0.0033 mg/L while 90 percent of the copper levels were at or below 0.14 mg/L.

RADIONUCLIDES AND RADON

Description

Radionuclides include radioactive substances occurring naturally in subsurface waters. Regulated substances include radium-226, radium-228, uranium, and gross alpha and beta particles. Table 3-9 summarizes radionuclide MCLs as defined by EPA’s Radionuclide Rule, WAC 246-290-310(7), and 40 CFR 141.66.

**TABLE 3-9**

Radionuclide MCLs

<table>
<thead>
<tr>
<th>Radionuclide</th>
<th>MCL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Radium -226 and -228</td>
<td>5 pCi/L</td>
</tr>
<tr>
<td>Uranium</td>
<td>30 µg/L</td>
</tr>
<tr>
<td>Gross Alpha (excluding uranium and radon)</td>
<td>15 pCi/L</td>
</tr>
<tr>
<td>Gross Beta</td>
<td>4 millirem/year</td>
</tr>
</tbody>
</table>

Monitoring Requirements and Analysis

WAC 246-290-300(10) and 40 CFR 141.26 require radionuclide samples at a frequency determined by initial sampling. North Bend’s initial sampling showed no radionuclides at levels above the detection limits. This corresponds to a reduced sampling frequency of 9 years. A gross alpha particle activity measurement may be substituted for the required radium-226 and radium-228 analysis provided that the measured gross alpha particle activity does not exceed 5 pCi/L at a confidence level of 95 percent.

The Mount Si Springs and Centennial Well were tested for radionuclides in 2012 and 2016. No samples from either test dates yielded radionuclides levels above the state reporting limits.
DISINFECTANTS AND DISINFECTION BYPRODUCTS RULE

Description

WAC 246-290-300(6) requires purveyors of public systems that provide water treated with chemical disinfectants to monitor for disinfectants and disinfection byproducts. The D/DBP Rule establishes residual disinfectant concentrations and MCLs for disinfection byproducts. Trihalomethanes (THMs) and haloacetic acids (HAA5) are a group of organic compounds that can be formed as a result of drinking water disinfection by chlorine and are, therefore, often referred to as disinfection byproducts. Total THMs include the sum of the concentrations of four disinfection byproducts: chloroform, bromoform, bromodichloromethane, and dibromochloromethane.

Monitoring Requirements and Analysis

Stage 1 of the D/DBP Rule was published in November 1998 and became effective in 2000. Under Stage 1 of the D/DBP Rule, the MCLs for TTHM and HAA5 is 80 micrograms per liter (μg/L) and 60 μg/L, respectively, and is based on the running annual average of two annual samples. Systems are required to prepare and implement a disinfection byproducts monitoring plan. The City’s disinfection byproducts monitoring plan is included in the Water Quality Monitoring Plan in Appendix H. The Stage 1 D/DBP Rule remained in effect for compliance until October 1, 2013.

TTHM and HAA5 samples were last taken at the Arrive development in August of 2012 and 2013. All Stage 1 samples were below the established MCLs.

Stage 2 of the D/DBP Rule was published in January 2006 and compliance with the new regulations began on October 1, 2013. Under Stage 2 of the D/DBP Rule, the MCLs for TTHM and HAA5 remain 80 μg/L and 60 μg/L, respectively; however, compliance with the MCL is based on the running annual average of each individual sample site instead of the running annual average of all samples combined. The number of samples taken is dependent on the population served. Systems serving between 500 and 9,999 people must collect two samples per year and systems serving between 10,000 and 99,999 people must collect four samples per quarter. Test results from August 2018 for HAA5 indicate levels ranging from below the detection limit to 1.54 μg/L while test results for TTHM indicate levels ranging from below the detection limit to 3.1 μg/L. All test results are well below the respective MCLs.

Sampling locations were determined in the Initial Distribution System Evaluation (IDSE), unless the City is eligible for a 40/30 certification. This certification is granted to systems which all Stage 1 D/DBP sample results are below 40 μg/L for TTHM and 30 μg/L for HAA5 and has no monitoring violations. The City has applied for and received this certification. The City's Disinfection Byproducts Monitoring Plan can be found in Appendix H.
GROUNDWATER RULE

The Groundwater Rule (GWR) is one of the requirements of the 1994 Amendments to the Safe Drinking Water Act. The final rule was published on November 8, 2006, and applies to all water systems that use groundwater as a source of supply. The GWR initially requires two actions: the state must conduct a sanitary survey to assess contamination risks and the purveyor must conduct a source water assessment. The source water assessment is required for systems that do not provide 99.99 percent (4-log) inactivation or virus removal and has a positive total coliform sample under the Total Coliform Rule. The assessment must identify the presence of E. coli, enterococci, and coliphage at each source. The state can also require systems to conduct a source water assessment at any time.

Depending on the results of the source water assessment, corrective action may be required and may include disinfection. The City currently disinfects water from Mount Si Springs with piping that provides a CT of 6. The Centennial Well source is chlorinated to maintain a residual in the distribution system.

Because the City does not currently provide 4-log treatment of viruses at the Centennial Well source, the City will use triggered monitoring to comply with the Groundwater Rule. Because both of the City’s sources feed all zones in the water system, triggered samples from both sources will be tested for E. Coli when a distribution sample tests positive for total coliform.

FACILITY ANALYSIS

SOURCE ANALYSIS

A description of the City’s sources of supply was provided in Chapter 1. According to Department of Health Group A Public Water Systems Waterworks Standards, source production capacity must be sufficient to supply peak day demands. Additionally, peak day and average daily demands must comply with the maximum instantaneous and maximum annual withdrawal limitations of associated water rights. The City of North Bend must also manage unique source constraints which include minimum bypass flows at Mount Si Springs and mitigation measures while using Centennial Wells during periods of low instream flow in the Snoqualmie River.

Source Availability

The City of North Bend receives water from two sources: Mount Si Spring and the Centennial Well. Both sources are treated by chlorination and then pumped to the City’s distribution system.

Mount Si Spring is a spring whose water right allows for the maximum instantaneous withdrawal rate of 3.2 million gallons per day and maximum annual withdrawal rate of
336 acre-feets. 3.0 cfs bypass must be maintained at all times above the point of diversion.

The Centennial Well is a groundwater source located on the Public Works Shop property. The City has a water right to withdraw 3,094 acre-ft per year from the well, with a maximum instantaneous withdrawal of 2,646 gpm.

The annual and instantaneous water rights analysis are summarized in Table 3-10. The projected annual withdrawal corresponds to the yearly sum of average day production for the RSA and wholesale demands from Table 2-15. The instantaneous withdrawal requirements correspond to the sum of the RSA and wholesale peak day production from Table 2-15.

TABLE 3-10
Water Rights Evaluations

<table>
<thead>
<tr>
<th>Year</th>
<th>Annual Withdrawal</th>
<th>Instantaneous Withdrawal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Allowed by Water Right (acre-ft)</td>
<td>Instantaneous Water Right (gpd)</td>
</tr>
<tr>
<td></td>
<td>Projected Withdrawal (acre-ft)&lt;sup&gt;(3)&lt;/sup&gt;</td>
<td>Surplus/ Deficit (acre-ft)</td>
</tr>
<tr>
<td>2019&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>3,430</td>
<td>613</td>
</tr>
<tr>
<td>2020&lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>3,430</td>
<td>784</td>
</tr>
<tr>
<td>2030</td>
<td>3,430</td>
<td>1,139</td>
</tr>
<tr>
<td>2040</td>
<td>3,430</td>
<td>1,484</td>
</tr>
</tbody>
</table>

(1) Actual withdrawal.
(2) No wholesale water sales, Wholesale water sales begin in 2021.
(3) Yearly sum of the City of North Bend’s RSA and Sallal Average day wholesale demands (see Tables 2-15 and 2-16).
(4) Includes the City of North Bend’s RSA and Sallal peak day wholesale demands (see Tables 2-15 and 2-16).

The City has adequate annual and instantaneous water rights to supply both the forecasted RSA and Sallal wholesale water demands. This analysis does not, however, guarantee that the instream source conditions for water withdrawal are always be met. If or when a wholesale water agreement between the City of North Bend and Sallal is finalized, the City’s water production must continue to meet constraints resulting from instream flows. The future wholesale water agreement will have to have protocols for managing these constraints and will be reflected in the City’s water mitigation plan which will likely be derived from the Golder model and algorithm. Additional discussion concerning the ramifications of a potential wholesale water agreement, including the possibly of the City purchasing mitigation water from Sallal, can be found in the Golder Memorandum in Appendix F.
Source Production Capacity and Reliability Analysis

Table 3-11 compares the production capacity of the water supply for 20 hours of source pumping with projected maximum day demand requirements of the City and maximum day Sallal wholesale demand until the year 2040.

**TABLE 3-11**

Source Pumping Capacity Analysis (All Sources)

<table>
<thead>
<tr>
<th>Year</th>
<th>20-Hour Source Pumping Capacity (gpd)(^{(1)})</th>
<th>Peak Day Production Requirement (gpd)(^{(2)})</th>
<th>Production Capacity Surplus/Deficit (gpd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020(^{(3)})</td>
<td>4,800,000</td>
<td>1,399,816</td>
<td>3,400,184</td>
</tr>
<tr>
<td>2030</td>
<td>4,800,000</td>
<td>2,111,733</td>
<td>2,688,267</td>
</tr>
<tr>
<td>2040</td>
<td>4,800,000</td>
<td>2,783,748</td>
<td>2,016,252</td>
</tr>
</tbody>
</table>

\(^{(1)}\) Includes both the Mount Si Springs (1,500 gpm) and Centennial Well (2,500 gpm) pumping capacity. Note: Mount Si Springs pumping capacity is limited to 1,500 gpm, rather than 2,000 gpm pump capacity due to transmission limitation discussed in Chapter 1 and confirmed in Mount Si Springs pump test on July 13, 2020.

\(^{(2)}\) Includes the City of North Bend’s RSA and Sallal peak day wholesale demands (See Table 2-15).

\(^{(3)}\) No wholesale water sales, Wholesale water sales begin in 2021.

The City of North Bend has sufficient source production pump capacity to meet its peak day requirements through the 2040.

The use of Mount Si Springs and the Centennial Well do come with constraints which impact each source’s reliability in different ways. The Mount Si Springs water right stipulates that 3.0 cubic feet per second (cfs) or 1,346 gpm, must bypass the pumping facility whenever water is withdrawn. Seasonal fluctuations in Mount Si Springs bypass flows typically result in summer weeks where springs production is drastically curtailed and the City relies largely on the Centennial Well.

The City installed variable frequency drives (VFDs) at the Mount Si Springs Booster Station in 2017 in order to increase flexibility and better manage bypass requirements. These VFDs allow the City to vary the pumping rate and has allowed the City to better comply with water rights requirements when total spring flows fall below 2,000 gpm. Seasonal low flows at Mount Si Springs typically occur in September which coincides with days of peak water demand.

Mount Si Springs withdrawal capacity is limited by the spring’s minimum bypass flow requirement. When flow over the weir is below 3 cubic feet per second, the source cannot be used. Given the source limitation of Mount Si Springs, it is worth analyzing whether the pumping capacity of the Centennial Well alone could provide adequate capacity to supply City and Sallal wholesale maximum day demand through 2040. This capacity analysis is summarized in Table 3-12 below.
TABLE 3-12

Source Pumping Capacity (Centennial Well Alone)

<table>
<thead>
<tr>
<th>Year</th>
<th>20-Hour Source Pumping Capacity (gpd)</th>
<th>Peak Day Production Requirement (gpd)(2)</th>
<th>Production Capacity Surplus/Deficit (gpd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020(1)</td>
<td>3,000,000</td>
<td>1,399,816</td>
<td>1,600,184</td>
</tr>
<tr>
<td>2030</td>
<td>3,000,000</td>
<td>2,111,733</td>
<td>888,267</td>
</tr>
<tr>
<td>2040</td>
<td>3,000,000</td>
<td>2,783,748</td>
<td>216,252</td>
</tr>
</tbody>
</table>

(1) Includes the City of North Bend’s RSA and Sallal peak day wholesale demands (see Table 2-15).
(2) No wholesale water sales. Wholesale water sales begin in 2021.

The City’s source capacity using the Centennial Well alone is adequate to provide both City and Sallal wholesale maximum day demand through the end of the 2040 planning period.

Similar to Mount Si Springs, the Centennial Well has restrictions on its use. The Centennial Well hydraulically connected to the Snoqualmie River. As a result, when well water is withdrawn during periods of low instream Snoqualmie River flow, mitigation water must be supplied as a condition of the water right permit. At present mitigation water is conveyed from Hobo Springs to Boxley Creek, a Snoqualmie river tributary. A summary of the yearly totals (from 2010 to 2019) of mitigation water conveyed to Boxley Creek can be found in Table 3-13 below.

TABLE 3-13

Total Mitigation Water Use

<table>
<thead>
<tr>
<th>Year</th>
<th>Mitigation Water (MG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>19.42</td>
</tr>
<tr>
<td>2011</td>
<td>10.96</td>
</tr>
<tr>
<td>2012</td>
<td>26.81</td>
</tr>
<tr>
<td>2013</td>
<td>31.00</td>
</tr>
<tr>
<td>2014</td>
<td>20.56</td>
</tr>
<tr>
<td>2015</td>
<td>67.89</td>
</tr>
<tr>
<td>2016</td>
<td>17.80</td>
</tr>
<tr>
<td>2017</td>
<td>59.15</td>
</tr>
<tr>
<td>2018</td>
<td>42.79</td>
</tr>
<tr>
<td>2019</td>
<td>33.78</td>
</tr>
</tbody>
</table>

At present, the City operates a single Mitigation Source, Hobo Springs. The use of this source is governed by the City’s contract with Seattle Public utilities (SPU) and the supply varies year-by-year as Spring production is correlated directly SPU’s Masonry Pool operations. Hobo Springs reached its capacity limit in the summer of 2015 due to a prolonged summer drought. Additional mitigation sources and conservation measures
shall be discussed in the system deficiencies section of this chapter.

Disinfection

The City disinfects water from both of its sources using chlorine. Chlorine gas is used to chlorinate water from Mount Si Springs, while sodium hypochlorite is used to chlorinate water from the Centennial Well.

Mount Si Springs water is disinfected to a CT of 6 at the Mount Si Springs source. This is achieved via a 24-inch, 775-foot pipe loop between the chlorination point and the distribution system. This pipe provides 12 minutes of contact time at a flow rate of 1,500 gallons per minute at a typical chlorine concentration of 0.5 mg/L. In the event that the City decides to operate the Springs pump station at the maximum rate the water right allows, 2,220 gpm, the chlorine concentration could be increased to 0.65 mg/L to comply with the required CT.

The City is not currently required to provide a CT at the Centennial Well. The well is chlorinated using sodium hypochlorite to maintain the chlorine residual throughout the distribution system. The City typically provides a chlorine concentration of 0.5 mg/L from its well source.

The City’s disinfection facilities are anticipated to be sufficient to meet the City’s disinfection requirements through the 20-year planning. The disinfection systems are designed to meet each source’s maximum production capacity. As a result, both source and treatment shall be considered together in the final capacity summary in Table 3-17.

Source Condition

In 2017 two VFDs and replacement pumps were installed at Mount Si Springs and the production meter was replaced. At present there are no other improvements or upgrades identified.

The production meter at the Centennial Well was replaced in 2018. A VFD will likely be installed in the near future. The City has some vibration concerns and plans to pull the pump and inspect the well. The well pump will be evaluated as well and may need require replacement.

BOOSTER STATION ANALYSIS

The City has two booster stations which convey water to the upper zones. The 2019 DOH Water System Design Manual establishes certain criteria for booster pumps stations that pump to open systems, where the hydraulic grade line (HGL) is governed by a storage tank open to the atmosphere, and closed systems, where the HGL is government by a closed distribution system or a pressure tank. The City’s 710 Booster Station pumps into an open system, while the 780 Booster Station pumps into a closed system.
710 Booster Pump Station

During normal operating conditions, an open system booster pump station is required to supply maximum day demands and a minimum pressure of 30 psi using typical operational pumping capacities while either PHD and 30 psi or both maximum day demand with fire flow and 20 psi pressure in the supplying zone. The open system booster pump station is also required to meet maximum day demand and fire flow in the discharge zone with the largest pump out of service while the supplying zone meets maximum day demand and 30 psi pressure. However, if a reservoir, capable of supplying fire flow is present in the zone, the booster station need not supply fire flow during this scenario. The Forster Woods reservoir has adequate fire flow storage for both the 710 and 780 Zones. However, a high flow pump in the 710 Booster Station has the ability to meet fire flow requirements as well, adding redundancy to the system.

The 710 Booster Pump Station supplies both the 710 and 780 Zones. The pump station is equipped with two 305 gpm pumps which operate in alternating duty/spare fashion as well as a single 2,650 gpm high flow pump. GIS analysis of consumer data determined that 710 and 780 Zones comprise 5.7 percent of total system demand. As a result, average day demand and maximum day demand for the combined 710 and 780 Zones are 5.7 percent of those projected in Table 2-15. An analysis of the 710 Booster Pump Station’s pumping capacity for 2020, 2030, and 2040, is summarized in Table 3-14. Pressure and demand requirements for the supply and discharge zones will be analyzed in the hydraulic sections

**TABLE 3-14**

710 Booster Pump Station’s Pumping Capacity (2020-2040)

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADD(^{(1)}) (gpm)</td>
<td>20</td>
<td>28</td>
<td>38</td>
</tr>
<tr>
<td>MDD(^{(1)}) (gpm)</td>
<td>39</td>
<td>54</td>
<td>73</td>
</tr>
<tr>
<td>FF (gpm)</td>
<td>0(^{(2)})</td>
<td>0(^{(2)})</td>
<td>0(^{(2)})</td>
</tr>
<tr>
<td>Pump Operating Capacity (gpm)</td>
<td>3260</td>
<td>3260</td>
<td>3260</td>
</tr>
<tr>
<td>Pump capacity with Largest Pump Out of Service (gpm)</td>
<td>610</td>
<td>610</td>
<td>610</td>
</tr>
<tr>
<td>Meet MDD - Surplus/(Deficit)</td>
<td>Yes</td>
<td>3221</td>
<td>Yes</td>
</tr>
<tr>
<td>Meet MDD + FF with Largest Pump Out of Service – Surplus/(Deficit)</td>
<td>N/A(^{(2)})</td>
<td>N/A(^{(2)})</td>
<td>N/A(^{(2)})</td>
</tr>
</tbody>
</table>

(1) Estimated to be 5.7 percent of Total Average day production (ADD) and Peak Day Production (MDD) from Table 2-15.

(2) Fire flow is provided by the Forster Woods Reservoir.

The 710 Booster Pump Station has adequate capacity to meet both maximum day as well as combined maximum day and fire flow requirements through 2040.
780 Booster Pump Station

A closed system booster pump station must provide both flow and pressure required by the closed zone. A closed system booster pump station must be capable of meeting peak hour demands (PHD) at no less than 30 psi while maintaining 30 psi and peak hour demand in the supplying zone, PHD at no less than 30 psi while maintaining 20 psi and meeting maximum day demand and fire flow in the supplying zone. Typically, a closed system must also be capable of meeting fire suppression requirements; however, fire suppression for the 780 Zone is supplied by the Forster Woods Reservoir and 710 Booster Station fire pump via a separate distribution network.

The 780 Booster station has three pumps, two with a capacity of 192 gpm and one with a capacity of 55 gpm. A GIS analysis of customer consumption indicated that the 780 Zone accounts for approximately 2.5 percent of the total flow to the system. The average day demand, max day demand, and peak hour demand for the 780 Zone were approximated to be 2.5 percent of the total system summarized in Table 2-15. Table 3-15 summarized the pump capacity analysis for the 780 Booster Pump Station for 2020, 2030 and 2040. Pressure and demand requirements for the supply and discharge zones will be analyzed in the hydraulic sections.

**TABLE 3-15**

780 Booster Pump Station’s Pumping Capacity (2020-2040)

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADD$^{(1)}$ (gpm)</td>
<td>9</td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>MDD$^{(1)}$ (gpm)</td>
<td>17</td>
<td>25</td>
<td>32</td>
</tr>
<tr>
<td>PHD$^{(1)}$ (gpm)</td>
<td>34</td>
<td>49</td>
<td>64</td>
</tr>
<tr>
<td>FF (gpm)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Pump Operating Capacity (gpm)</td>
<td>439</td>
<td>439</td>
<td>439</td>
</tr>
<tr>
<td>Meet MDD - Surplus/(Deficit)</td>
<td>Yes</td>
<td>422</td>
<td>Yes</td>
</tr>
<tr>
<td>Meet MDD + FF with largest Routinely Used Pump Out of Service -Surplus/(Deficit)</td>
<td>N/A$^{(2)}$</td>
<td>N/A$^{(2)}$</td>
<td>N/A$^{(2)}$</td>
</tr>
</tbody>
</table>

(1) Estimated to be 2.5 percent of Total Average day production (ADD), Peak Day Production (MDD), and Peak Hour Demand (PHD) from Table 2-15.

(2) Fire flow is provided by the Forster Woods Reservoir.

The 780 Booster Pump Station is projected to have adequate pumping capacity through the end of the 2040 planning period.
Condition

Both the 710 and 780 Booster Pump Stations are in good condition. The 55 gpm pump in the 780 station was replaced in 2019. At present there are no anticipated upgrade or replacements projects for either booster pump station.

STORAGE ANALYSIS

The existing storage facilities were described in Chapter 1. The storage requirements for the City were determined using the Department of Health’s Water System Design Manual, October 2019. The storage components are:

- Operational Storage
- Equalizing Storage
- Standby Storage
- Fire Suppression Storage
- Dead Storage

Currently, the City has the Nintendo, I-90, and Forster Woods Reservoirs serving customers in its water service area. As discussed in Chapters 1 and 2, the reservoirs have a combined capacity of 3.25 MG. The equations used in calculating the storage requirements are discussed in the next sections, followed by Table 3-16, which presents a summary of the storage analysis results. All calculations assume that the 710/780 Zone demand is approximately 5.7 percent of the total system demand, as indicated by a GIS consumer data analysis. The following equations can serve as a basis for future storage calculations.

Operational Storage

Operational storage is the volume of the reservoir devoted to supplying the water system under normal operating conditions while the sources of supply are in the “off” status. This volume is typically established to prevent excessive cycling of wells and booster pumps.

Booster pumps and wells used to fill reservoirs are typically called on and off by water level sensors in the reservoirs. The call levels in the City’s reservoirs have been set 3 feet apart; therefore, each reservoir has 3 feet of operational storage.

Equalizing Storage

Equalizing storage for a single source is calculated using the following equation:

\[ ES = (PHD - Q_s) \times 150 \text{ min} \]

\[ ES = \text{Equalizing storage component (gallons)} \]
PHD = Peak hourly demand (gpm)
Q_s = Total of all permanent and seasonal sources (gpm)

Standby Storage

The minimum required standby storage is calculated using the following equation:

\[ SB = (N) \times (SB_i) \]

Where:

\[ SB = \text{Total standby storage component, or equivalent.} \]
\[ SB_i = \text{ERU}_{MDD} \]
\[ N = \text{Number of ERUs} \]

with a minimum of 200 gpd/ERU

Standby storage is used to provide a measure of reliability should the City’s source of supply fail or unusual conditions create increased system demands.

Fire Suppression Storage

The minimum fire suppression storage volume is calculated using the following equation:

\[ \text{Fire Suppression Storage, } FSS = (FF) \times (T_m) \]

Where:

\[ FF = \text{Required fire flow rate} \]
\[ T_m = \text{Duration of fire flow rate} \]

The fire suppression storage requirement varies with each of the City’s pressure zones. The 594 Zone includes the highest rate of fire flow for the Nintendo Distribution Center of 4,500 gpm for a period of 4 hours. The 710 and 780 Zones are primarily single-family residences for which the City needs to provide 1,000 gpm for 1 hour and multi-family residences for which the City needs to provide 2,000 gpm for 2 hours. The 710 and 780 Zones can also receive fire flow from the fire flow pump in the 710 Booster Station, which has a capacity of 2,650 gpm and therefore provides full redundancy to the fire suppression storage in these zones.

Dead Storage

Dead storage is the volume of the reservoir that cannot be utilized because minimum system pressures would be below the 20 psi minimum during a fire flow event or 30 psi during peak hour demand.
Storage Use

Table 3-16 and 3-17 present the storage requirements for the City of North Bend based on the DOH requirements summarized in Table 3-1. These calculations serve as a basis for evaluating future storage requirements. Table 3-16 summarizes storage analysis where standby storage and fire flow are not nested, while Table 3-17 summarizes a capacity analysis with the storage components nested.
TABLE 3-16

Storage Analysis (Gallons) No Nesting

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pressure Zone</td>
<td>594</td>
<td>710 and 780</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2020</td>
<td>2030</td>
</tr>
<tr>
<td>Operational Storage&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>198,041</td>
<td>52,355</td>
<td>250,396</td>
</tr>
<tr>
<td>Equalization Storage</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Standby Storage</td>
<td>1,320,178</td>
<td>79,638</td>
<td>1,399,816</td>
</tr>
<tr>
<td>Fire Suppression</td>
<td>1,080,000</td>
<td>240,000</td>
<td>1,320,000</td>
</tr>
<tr>
<td>Required Storage</td>
<td>2,598,219</td>
<td>371,993</td>
<td>2,970,212</td>
</tr>
<tr>
<td>Storage Volume</td>
<td>2,500,000</td>
<td>750,000</td>
<td>3,250,000</td>
</tr>
<tr>
<td>Dead Storage&lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>52,352&lt;sup&gt;(3)&lt;/sup&gt;</td>
<td>52,352</td>
<td>52,352&lt;sup&gt;(2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Available Storage</td>
<td>2,500,000</td>
<td>697,648</td>
<td>3,197,648</td>
</tr>
<tr>
<td>Surplus (Deficit)&lt;sup&gt;(4)&lt;/sup&gt;</td>
<td>98,219</td>
<td>325,655</td>
<td>227,436</td>
</tr>
</tbody>
</table>

<sup>(1)</sup> The City’s reservoirs all currently operate with 3 feet of operational storage.

<sup>(2)</sup> Both reservoir foundations are more than 46 feet above the highest service in the 594 Zone and; therefore, have no dead storage.

<sup>(3)</sup> The reservoir foundation is 43 feet above the highest service in the 710 Zone. Thus, the Forster Woods Reservoir has 3 feet of dead storage.
### TABLE 3-17

**Storage Analysis (Gallons) with Nesting**

<table>
<thead>
<tr>
<th>Year</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operational Storage&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>594</td>
<td>710 and 780</td>
</tr>
<tr>
<td></td>
<td>198,041</td>
<td>52,355</td>
<td>250,396</td>
</tr>
<tr>
<td></td>
<td>Equalization Storage</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Standby Storage</td>
<td>1,320,178</td>
<td>79,638</td>
</tr>
<tr>
<td></td>
<td>Fire Suppression</td>
<td>1,080,000</td>
<td>240,000</td>
</tr>
<tr>
<td></td>
<td>Required Storage</td>
<td>1,518,219</td>
<td>292,355</td>
</tr>
<tr>
<td></td>
<td>Storage Volume</td>
<td>2,500,000</td>
<td>750,000</td>
</tr>
<tr>
<td></td>
<td>Dead Storage&lt;sup&gt;(3)&lt;/sup&gt;</td>
<td>0</td>
<td>52,352&lt;sup&gt;(4)&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Available Storage</td>
<td>2,500,000</td>
<td>697,648</td>
</tr>
<tr>
<td></td>
<td>Surplus (Deficit)</td>
<td>981,781</td>
<td>405,293</td>
</tr>
</tbody>
</table>

<sup>(1)</sup> The City’s reservoirs all currently operate with 3 feet of operational storage.

<sup>(2)</sup> Storage nesting adopted, the larger of standby storage/fire suppression controls.

<sup>(3)</sup> Both reservoir foundations are more than 46 feet above the highest service in the 594 Zone and therefore has no dead storage.

<sup>(4)</sup> The reservoir foundation is 43 feet above the highest service in the 710 Zone. Thus, the Forster Woods Reservoir has 3 feet of dead storage.

Storage deficits in the 594 Zone are not considered as storage deficiencies provided the higher zones and total system are still at a surplus. Water will be able to cascade down from the higher zones in order to meet demand in the 594 Zone.

The City must incorporate nesting into its storage capacity analysis before 2025 in order to avoid a storage deficit. The City will allow nesting while also planning for the construction of an additional 500,000-gallon reservoir between the 10- and 20-year planning horizons.

### Condition

The three reservoirs were cleaned in 2020 and, overall, are in good condition. The Forster Woods and I-90 Reservoirs are due for interior and exterior recoating in the next 10 years during which time a number of security and seismic upgrades will likely take place.
TRANSMISSION AND DISTRIBUTION SYSTEM ANALYSIS

See Chapter 4 for an analysis of the City’s transmission and distribution system.

SYSTEM CAPACITY SUMMARY

The maximum ERU capacity of each component of the City’s water system must be analyzed and compared to the projected ERUs determined in the projections and summarized in Table 2-15. The system capacity of analysis is summarized in Table 3-18 below.

**TABLE 3-18**

System Capacity Analysis

| Water System Connections Correlated to ERUs (1) |  |
| --- | --- | --- | --- |
| Service Classification | Consumption | Total Connections | ERUs |
| Single Family | 238,729 | 1,949 | 1,949 |
| Multi-Family | 66,053 | 548 | 419 |
| Commercial/Industrial/Gov | 112,615 | 248 | 714 |
| DSL | 130,200 | — | 826 |
| Total | 547,597 | 2,745 | 3,908 |

| Service Capacity as ERUs and Gallons Per Day |  |
| Water System Component/Facility | Capacity (gpd) | ERU Capacity (2) |
| All Sources and Treatment (3)(4) | 4,860,000 | 15,939 |
| Well Source and Treatment (3)(5) | 3,000,000 | 9,839 |
| Mitigation | — (6) | — (6) |
| Equalizing Storage | N/A (7) | N/A (7) |
| Standby Storage (7)(8) | 2,947,252 | 9,666 |
| Transmission | — | — |
| Water Rights | 7,010,240 | 22,991 |

| Water System’s ERU Capacity | 9,666 |
| Estimated ERUs for 2030 (9) | 6,451 |
| Estimated ERUs for 2040 (9) | 8,402 |

(1) From Table 2-10.
(2) Based on an ERU_{MDD} value of 315 gpd.
(3) Treatment systems have been designed to meet maximum source production.
(4) Includes both the Centennial Well and Mount Si Springs as shown in Table 3-11.
(5) Source capacity includes only the Centennial Well pump capacity as shown in Table 3-12 since Mount Si Springs is likely limited by weir bypass flow during peak demand periods.
(6) Mitigation capacity varies year by year as it is dependent on climate, SPU operations of Masonry Pool, and water System Demand.
(7) Source and pumping capacities are sufficient to not require equalizing storage.
(8) Assumes nesting as shown in Table 3-17.
(9) From Table 2-15.
CITY OF NORTH BEND SYSTEM DEFICIENCIES

The City has adequate source and treatment, standby storage, and water rights capacity to support the projected ERUs through the 2030 and 2040 planning periods; however, the City is nearing its maximum mitigation capacity, specifically during dry years.

The City uses an approved hydrogeological model developed by Golder to determine the effect of the Centennial Well on the Snoqualmie River. If the City uses the well over an extended period of time, the effect of the well on the river increases until the influence on the river equals the flow from the well. During periods where the influence on the river is the full production flow from the well and the Snoqualmie River in-stream flow targets are not met, the amount of mitigation water required is equal to the well production plus a factor of uncertainty in the system parameters. During these periods the City must provide the necessary mitigation from Hobo Springs. Historically, during most years, the available water from Hobo Springs is sufficient to provide the required mitigation. The City manages its source production during periods when the in-stream flow target is not met by preferentially using Mount Si Springs. Historically water from Mount Si Springs is available except for during the driest months during which time the springs may not have excess water above the 3.0 cfs minimum bypass.

During dry years, however, there can be limitations on Hobo Springs. The flow from Hobo Springs is dependent upon the level of the Masonry Pool which is managed by Seattle Public Utilities (SPU). The level decreases seasonally with the lowest level usually occurring in October. The minimum flows in Hobo Springs are also at this time. During dry years, the level of the Masonry Pool can drop well below typical seasonal levels and the flow from Hobo Springs may decrease to a point where it cannot meet mitigation demand. This was the case in 2015, a historically dry year, when the available mitigation water in Hobo Springs limited the amount that could be pumped from the Centennial Well.

Consequently, the City risks not being able to meet its mitigation options, unless it undertakes the two following measures:

1. Enact water conservation policies that allow for reducing peak season water use to allow the City to manage demands during dry years and dry seasons. The ability to reduce peak uses would allow for a reduction in mitigation demands and could allow the City to manage peak demands within the available mitigation flow.

2. Obtain other sources of mitigation water to provide redundancy in mitigation sources. A second source of mitigation water would ensure that the City can mitigate Centennial Well use even during periods of low flow in Hobo Springs.
The City is continuing to negotiate with Sallal Water Association to provide the Association wholesale water while also being able to obtain mitigation water from the Association’s wells. The use of Sallal’s wells for mitigation was included in the original mitigation design provisions for the Hobo Springs mitigation waterline project in 2008. The construction and use of Sallal mitigation intertie was also part of the provisions of the Centennial Well’s water right permit. A final 400 feet of pipe and controls would be required to complete the mitigation facilities.

As outlined above, the City is acutely aware of the need to increase the supply and curb the demand of mitigation water and must do so soon. Due to the slow moving nature of the Sallal wholesale negotiations, the City is committed to tackling both the supply and demand side, bringing new mitigation sources online in the near-term. The City will accomplish this through the following four measures:

1. **Continue to improve system efficiency and flexibility.** The City installed variable frequency drives (VFDs) at the Mount Si Springs Booster Station in 2017 in order to increase flexibility and better manage bypass requirements. These VFDs allow the City to vary the pumping rate and has allowed the City to better comply with water rights requirements when total spring flows fall below 2,000 gpm. Seasonal low flows at Mount Si Springs typically occur in September which coincides with days of near maximum water demand. As part of the Capital Improvement Plan (CIP) in Chapter 7, the City plans to add a VFD to the Centennial Well for improved efficiency and flexibility as well.

2. **Control and lower distribution system leakage (DSL) through targeted capital improvement projects.** These projects are outlined in Chapter 7 and will replace aging asbestos concrete mains and other suspected leaking pipes. Reducing DSL will lower the overall water production and the mitigation requirements associated with well withdrawal in the summer and fall.

3. **Decrease the magnitude of maximum day water demand during periods of low mitigation capacity.** The June 2020 adoption of City Ordinance 1723 and the accompanying Water Shortage Plan by City Council gives the City the ability to impose and enforce conservation measures during times of water shortage. Three tiers have been identified based on the elevation of Masonry Pool which is hydraulically connected to the City’s mitigation source, Hobo Springs. The ordinance and Water Shortage Plans can be found in Appendix R.
4. Increase and diversify the number of mitigation sources and overall capacity. The City has created a mitigation capacity action plan which will be executed either in tandem or in lieu of a wholesale water agreement with Sallal. The action plan includes the following steps:

a. Cascade Golf Course water mitigation system becomes operational in 2021. The Cascade Golf Course well and its associated water rights were purchased in 2018 with the intent to supplement Hobo Springs mitigation water. This project is listed in Chapter 7 of the WSP as project MT-1. This project will add a second mitigation source, thereby increasing capacity and adding redundancy to the City’s mitigation system.

b. Hobo Springs Improvements will increase mitigation supply by 2022. This project is listed in Chapter 7 of the WSP as project MT-2. A new catchment basin will capture excess water which currently flows over the existing weir. This project will increase the available mitigation capacity at Hobo Springs.

c. The City will begin discussions with SPU regarding the purchase of additional mitigation water.

d. Further assessment and refining of Mitigation Reservoir. This project is listed in Chapter 7 of the WSP as project MT-5. The City has already funded feasibility studies which have assessed perspective sites for a large 10 MG mitigation Reservoir. The City will continue to assess and refine the design but such a project will likely be largely grant funded. The WSP projects possible construction around 2031.

Finally, as indicated in Chapter 1, the City does have water right applications for additional water rights to improve source and mitigation reliability.
CHAPTER 4

HYDRAULIC MODELING

This Chapter presents information on the computer hydraulic model of the City’s water system and the results of hydraulic analyses conducted to evaluate the existing and future capabilities of the water system.

The operation of a municipal water system involves dynamic interactions between various water system components, including source, storage, transmission, and distribution system facilities. These interactions and their effect on the level of service provided to the City’s customers are dependent on the distribution and magnitude of water demands within the system and the performance characteristics of the water system facilities. In addition, infrequent high water demand events, such as firefighting and other emergencies, can significantly alter the normal flow patterns and pressures in the municipal water system and its components. These factors must be considered in analyzing the ability of a water system to provide for future demands, while maintaining an adequate level of water service to customers.

The development of a computer hydraulic model, which can accurately and realistically simulate the performance of a water system in response to a variety of conditions and scenarios, has become an increasingly important element in the planning, design, and analysis of municipal water systems. The Washington State Department of Health’s WAC 246-290 requires hydraulic modeling as a component of water system plans.

HYDRAULIC MODELING SOFTWARE

The City’s water system was analyzed using Innovyze’s InfoWater hydraulic modeling software, which operates in an ArcMap GIS environment. The InfoWater model was created from an existing H2ONet hydraulic model developed during the completion of the City’s 2010 Water System Comprehensive Plan. The model was modified to include new transmission mains constructed since the last Plan.

The InfoWater model is configured with a graphical user interface. Each water system element, including pipes, valves, sources, and reservoirs, is assigned a unique graphical representation within the model. Each element is assigned a number of attributes specific to its function in the actual water system. Typical element attributes include spatial coordinates, elevation, water demand, pipe lengths and diameters, and critical water levels for reservoirs. With attributes of each system element as the model input, the InfoWater software produces the model output in the form of flows and pressures throughout the simulated water system.
MODEL ASSUMPTIONS

The basic layout of the water system is recreated within the model. The lengths, diameters, and connection points of system piping are assigned using an updated base map of the water system. Elevations of nodes are assigned using County LiDAR data. The locations of normally closed valves, check valves, and pressure reducing valves (PRVs) are found on water system base maps. The assumptions regarding the modeling of the City’s water sources, system demands, and the settings of PRVs are included in the following sections. The calibration results are summarized below.

SOURCE

Mount Si Springs and the Centennial Well are included in the hydraulic model. Both the springs and the well are modeled as a fixed-head reservoir simulating the clear well or aquifer and a pump. Pump curves are known for both sources and are recreated in the model. The spring and well pumps are called on and off based on reservoir levels in the Nintendo Reservoir.

STORAGE

In InfoWater, reservoirs are modeled as “tanks” with finite size, using actual reservoir dimensions and elevations. The model includes the City’s three active storage tanks. Dimensions and critical elevations of the storage facilities are provided in Table 1-2.

BOOSTER STATIONS

The City’s two booster stations have been included in the hydraulic model. Pump curves have been assigned to each pump based on data obtained from the City.

PRESSURE REDUCING VALVES (PRVS)

All distribution system pressure reducing valves (PRVs) are included in the model. The PRV settings were obtained from City staff and are recreated in the model.

SYSTEM DEMANDS

A key element in the hydraulic modeling process is the distribution of demands throughout the water system. Total demand on the system is based on the existing and projected demands from Chapter 2. Demand distribution among the pressure zones has been determined from an analysis of the booster station flow meters, as discussed in Chapter 3.

The modeling software allows numerous hydraulic scenarios to be loaded into the model. In order to evaluate the system under different demand conditions, several demand scenarios are included in the model and are provided in Table 4-1.
Six demand sets were used in the hydraulic analysis.

- 2020 Peak Hour Demands: These demands were used to verify the system’s current ability to meet the DOH standards to supply domestic water at a minimum system wide pressure of 30 psi.

- 2020 Maximum Day Demands: These demands were used to evaluate the system’s current ability to meet the maximum day demands plus required fire flows at DOH’s requirement of 20 psi.

- 2030 Peak Hour Demands: These demands were used to verify the system is able to meet the DOH standards to supply domestic water at a minimum system wide pressure of 30 psi through 2030.

- 2030 Maximum Day Demands: These demands were used to evaluate the system’s ability to meet the maximum day demands plus required fire flows at DOH’s requirement of 20 psi through 2030.

- 2040 Peak Hour Demands: These demands were used to verify the system is able to meet the DOH standards to supply domestic water at a minimum system wide pressure of 30 psi within the 20-year planning period.

- 2040 Maximum Day Demands: These demands were used to evaluate the system’s ability to meet the maximum day demands plus required fire flows at DOH’s requirement of 20 psi within the 20-year planning period.

**MODEL CALIBRATION**

The calibration of a hydraulic model provides a measure of assurance that the model is an accurate and realistic representation of the actual system. The City’s model was calibrated for seven hydrant locations in 2009, as described in the 2010 Water System Plan.

**FIELD TESTS**

The calibration of a hydraulic model provides a measure of assurance that the model is an accurate and realistic representation of the actual system. The City’s existing hydraulic model was calibrated using field measurements taken on July 13, 2020. During these tests while static and residual pressures were recorded and nearby closed hydrants, City staff opened hydrants and recorded the flow rate. Field results have been used to calibrate the hydraulic model through the verification and adjustment of pipe type, sizes, roughness coefficients, and elevations. Table 4-1 identifies the location of each hydrant test.
TABLE 4-1

2020 Field Testing Locations

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Pressure Zone</th>
<th>Testing Location Flow</th>
<th>Testing Location Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Intersection</td>
<td>Node</td>
</tr>
<tr>
<td>1</td>
<td>594</td>
<td>SE 13th and Mountain View</td>
<td>J-277</td>
</tr>
<tr>
<td>2</td>
<td>594</td>
<td>SE Cedar Falls Way and 424th Avenue SE</td>
<td>J599</td>
</tr>
<tr>
<td>3</td>
<td>594</td>
<td>North Bend Elementary North Hydrant</td>
<td>J459</td>
</tr>
<tr>
<td>4</td>
<td>594</td>
<td>Boxley Place and NE 5th Street</td>
<td>J-21</td>
</tr>
<tr>
<td>5</td>
<td>594</td>
<td>SE 87th Avenue</td>
<td>J-2</td>
</tr>
</tbody>
</table>

System conditions during each hydrant test were recorded, including reservoir levels, source on/off status, and booster station on/off status. Table 4-2 summarizes the reservoir and source conditions during testing. Using the system conditions for each hydrant test, the hydraulic model has been used to generate static pressure and residual pressure at the measured flow rate. The domestic demands used during the calibration process are assumed to equal 1.24 times the average day demand for 2020 based on tank drawdown during the testing period. Model output has been generated at points in the model equivalent to the locations of the hydrant tests.

TABLE 4-2

2020 Conditions During Model Calibration Hydrant Testing

<table>
<thead>
<tr>
<th>Test Number</th>
<th>Pressure Zone</th>
<th>Active Supply to Zone</th>
<th>Nintendo Reservoir Level</th>
<th>I-90 Reservoir Level</th>
<th>Forster Woods Reservoir Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>594</td>
<td>None</td>
<td>37.58</td>
<td>23.52</td>
<td>N/A</td>
</tr>
<tr>
<td>2</td>
<td>594</td>
<td>None</td>
<td>37.5</td>
<td>23.43</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td>594</td>
<td>None</td>
<td>37.38</td>
<td>23.3</td>
<td>N/A</td>
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<td>594</td>
<td>None</td>
<td>37.28</td>
<td>23.2</td>
<td>N/A</td>
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<td>5</td>
<td>594</td>
<td>None</td>
<td>37.1</td>
<td>23.04</td>
<td>N/A</td>
</tr>
<tr>
<td>6(1)</td>
<td>710</td>
<td>None</td>
<td>N/A</td>
<td>N/A</td>
<td>36.25</td>
</tr>
<tr>
<td>7</td>
<td>594</td>
<td>None</td>
<td>36.96</td>
<td>22.94</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(1) 710 Booster Pump Station was on during test with a flow rate of 267 gpm and a discharge head pressure of 96.0 psi.

Static pressure results are generated by running the model with only domestic demands. Residual pressure results are generated by placing an additional demand at the location of the hydrant test equal to the measured flow rate.
The system pressure and pipe flow rates determined in the calibration process are highly dependent on the friction loss characteristics established for each pipe. The friction losses occurring in lengths of pipe, fittings, and isolation valves are accounted for in the hydraulic model. The friction factors for the model pipes are adjusted throughout the calibration process until the model output best approximates the measured values. Hazen-Williams C-factors between 110 and 140 are used throughout the system. These friction factors are typical for most pipe types and are generally conservative. The friction factors for the pipe also compensate for system losses through valves and pipe fittings.

The model output has been produced for two data comparisons: static pressure and residual pressure. Table 4-3 provides the flow rates, measured static and residual pressures, and modeled static and residual pressures. Calibration of the hydraulic model produced results that are within 3 psi of static pressure and 5 psi of residual pressure, with the exception of a single case for the residual pressure. This exception occurs at test site number 5 which is located on an old dead end main north of the City. The model results for this site were more conservative than the field measurements and the location and configuration of the water system suggest this discrepancy would have little effect on the rest of the system.

**TABLE 4-3**

<table>
<thead>
<tr>
<th>Node (pressure/flow)</th>
<th>Field Flow</th>
<th>Field Pressures (psi)</th>
<th>Model Pressure (psi)</th>
<th>Model vs Field Δ (psi)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Static</td>
<td>Residual</td>
<td>ΔP</td>
</tr>
<tr>
<td>J-277/J-279</td>
<td>1060</td>
<td>56</td>
<td>47</td>
<td>9</td>
</tr>
<tr>
<td>J-399/J-328</td>
<td>1130</td>
<td>53</td>
<td>50</td>
<td>3</td>
</tr>
<tr>
<td>J-459/J-57</td>
<td>1060</td>
<td>64</td>
<td>57</td>
<td>7</td>
</tr>
<tr>
<td>J-21/J-33</td>
<td>900</td>
<td>60</td>
<td>48</td>
<td>12</td>
</tr>
<tr>
<td>J-2/J-1</td>
<td>830</td>
<td>69</td>
<td>30</td>
<td>39</td>
</tr>
<tr>
<td>J-165/J-163</td>
<td>1060</td>
<td>40</td>
<td>35</td>
<td>5</td>
</tr>
<tr>
<td>J-509/J-66</td>
<td>1130</td>
<td>69</td>
<td>60</td>
<td>9</td>
</tr>
</tbody>
</table>

**MODELED SCENARIOS AND RESULTS**

**PEAK HOUR ANALYSIS**

Water systems must maintain a minimum pressure of 30 psi in the distribution system under peak hour demand conditions in accordance with WAC 246-290-230(5). During peak hour analyses, all operational and equalizing storage is depleted from the City’s reservoirs. Reservoir storage volumes are provided in Table 3-17. For the peak hour analyses, no sources are operational and only one booster pump at the 780 Booster
Station is operational since the peak hour demand reservoir levels are nearly within the normal operational levels. The 780 Booster Station has redundant pumps and a generator onsite. The 2030 and 2040 scenarios include water supplied by North Bend via the Sallal intertie. Table 4-4 provides the system conditions used during peak hour analyses.

**TABLE 4-4**

System Conditions During Peak Hour Analyses

<table>
<thead>
<tr>
<th>Condition</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Demand Set Name</td>
<td>2020PHD</td>
<td>2030PHD</td>
<td>2040PHD</td>
</tr>
<tr>
<td>Peak Hour Demands</td>
<td>925.5 gpm</td>
<td>1,555.0 gpm</td>
<td>2,046.0 gpm</td>
</tr>
<tr>
<td><strong>Existing System Without Modifications</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Tank Set Name</td>
<td>2020PHD</td>
<td>2030PHD</td>
<td>2040PHD</td>
</tr>
<tr>
<td>Source Conditions</td>
<td>None Active</td>
<td>None Active</td>
<td>None Active</td>
</tr>
<tr>
<td>Booster Station Status</td>
<td>Normal Operation(1)</td>
<td>Normal Operation(1)</td>
<td>Normal Operation(1)</td>
</tr>
<tr>
<td>594 Zone Reservoirs</td>
<td>591.0 ft HGL</td>
<td>591.0 ft HGL</td>
<td>591.0 ft HGL</td>
</tr>
<tr>
<td>710 Reservoirs</td>
<td>707.0 ft HGL</td>
<td>707.0 ft HGL</td>
<td>707.0 ft HGL</td>
</tr>
</tbody>
</table>

(1) One pump operating at 780 BPS.

The hydraulic model is used to evaluate the system’s ability to provide adequate service pressure. Table 4-5 provides the minimum system pressure during peak hour for each pressure zone. Figure 4-1 identifies the peak hour pressures throughout the water system at the end of the 20-year planning period. Complete model output results are included in Appendix G.

The results of the Peak Hour Analyses indicate that sufficient pressures are available throughout the system at peak hour demands throughout the 20-year planning period.

**TABLE 4-5**

Minimum Pressures During Peak Hour Analyses

<table>
<thead>
<tr>
<th>Pressure Zone</th>
<th>Location</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>594 Zone</td>
<td>Forster Boulevard SW and SW 11th Place</td>
<td>43 psi</td>
<td>43 psi</td>
<td>43 psi</td>
</tr>
<tr>
<td>710 Zone</td>
<td>SW 10th Street and SW 12th Court</td>
<td>33 psi</td>
<td>33 psi</td>
<td>33 psi</td>
</tr>
<tr>
<td>780 Zone</td>
<td>Arrive</td>
<td>67 psi</td>
<td>67 psi</td>
<td>63 psi</td>
</tr>
</tbody>
</table>

**AVAILABLE FIRE FLOW ANALYSIS**

The hydraulic model has been used to assess the availability of fire flows throughout the water system. WAC 246-290-230 (6) requires systems providing fire flow to be designed to provide maximum day demands plus the required fire flow, while maintaining system-wide pressure of 20 psi. In addition, operational, equalizing, and fire suppression storage
Legend

Peak Hour Pressure (psi)
- < 30
- 30 - 40
- 40 - 50
- 50 - 80
- > 80

Central Well
Mitigation Well
PRV
Pump Station
Reservoir

Water Main Diameter:
- Less than 12"
- 12" and Greater

Retail Service Area
North Bend City Limits
710 Zone (710 FT HGL)
780 Zone (780 FT HGL)
594 Zone (594 FT HGL)

Source: King County & City of North Bend GIS Data; Aerial

City of North Bend Water System Plan
Figure 4-1
2040 PHD Modeling Results
are depleted from the reservoirs for these analyses. Storage volumes are provided in Table 3-17. For the fire flow analyses, the Centennial Well, two domestic pumps at the 710 Booster Station, and one pump at the 780 Booster Station are operational. This condition represents the case where the largest source/pump is out of service. All of the operational sites have backup power on site. The City’s distribution system is modeled with the fire flow conditions provided in Table 4-6. The 2030 and 2040 scenarios include water supplied by North Bend via the Sallal intertie.

**TABLE 4-6**

<table>
<thead>
<tr>
<th>Condition</th>
<th>2020</th>
<th>2030</th>
<th>2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Demand Set Name</td>
<td>2020MDD</td>
<td>2030MDD</td>
<td>2040MDD</td>
</tr>
<tr>
<td>Maximum Day Demands</td>
<td>451.5 gpm</td>
<td>758.5 gpm</td>
<td>998.0 gpm</td>
</tr>
</tbody>
</table>

**Existing System Without Modifications**

<table>
<thead>
<tr>
<th>Condition</th>
<th>2020MDD</th>
<th>2030MDD</th>
<th>2040MDD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model Tank Set Name</td>
<td>2020MDD</td>
<td>2030MDD</td>
<td>2040MDD</td>
</tr>
<tr>
<td>Source Conditions</td>
<td>Normal Operation&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>Normal Operation&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>Normal Operation&lt;sup&gt;(1)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Booster Station Status</td>
<td>Normal Operation&lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>Normal Operation&lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>Normal Operation&lt;sup&gt;(2)&lt;/sup&gt;</td>
</tr>
<tr>
<td>594 Zone Reservoirs</td>
<td>573.5 ft HGL</td>
<td>573.5 ft HGL</td>
<td>573.5 ft HGL</td>
</tr>
<tr>
<td>710 Zone Reservoir</td>
<td>692.9 ft HGL</td>
<td>692.9 ft HGL</td>
<td>692.9 ft HGL</td>
</tr>
</tbody>
</table>

<sup>(1)</sup> Only Centennial Well operating.

<sup>(2)</sup> Two domestic pumps operating at 710 BPS. One pump operating at 780 BPS.

Table 4-7 provides the general fire flow requirements for various buildings. Figure 4-2 identifies the existing available fire flows throughout the water system. Flows vary significantly within each classification depending on the elevation, water main sizes, and proximity to storage.

**TABLE 4-7**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Fire Flow Requirement (gpm)</th>
<th>Duration Requirement (hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>1,000</td>
<td>2</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>2,000</td>
<td>2</td>
</tr>
<tr>
<td>Commercial/Industrial</td>
<td>3,000</td>
<td>3</td>
</tr>
<tr>
<td>Schools</td>
<td>3,000</td>
<td>3</td>
</tr>
</tbody>
</table>

Several structures have fire flow requirements greater than the minimum required for their zoning classification. Table 4-8 provides the name and location of these buildings and other notable locations along with their required fire flow and available fire flows.
As shown in Figure 4-2 and Table 4-8, there are areas of the City’s system where there is insufficient fire flow available to meet the fire flow requirements. The model fire flow results for these areas and the reason for the deficiencies are given in Table 4-9. The model fire flow results with the Capital Improvement Program projects described in Chapter 7 are given in Table 4-10 and shown in Figure 4-3.
### TABLE 4-8

Fire Flow Results for Critical Locations

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Node</th>
<th>Pressure Zone</th>
<th>Fire Flow Required (gpm)</th>
<th>Available Fire Flow (gpm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nintendo</td>
<td>401 South Fork</td>
<td>J-138</td>
<td>594</td>
<td>4,500</td>
<td>5,780, 5,470</td>
</tr>
<tr>
<td><strong>Elementary School</strong></td>
<td><strong>400 East 3rd</strong></td>
<td><strong>J-58</strong></td>
<td>594</td>
<td>3,500</td>
<td><strong>1,530, 1,530</strong></td>
</tr>
<tr>
<td>Ace Hardware</td>
<td>300 South Main</td>
<td>J-240</td>
<td>594</td>
<td>3,000</td>
<td>4,370, 3,990</td>
</tr>
<tr>
<td>Factory Outlet Stores</td>
<td>531 South Fork</td>
<td>J-209</td>
<td>594</td>
<td>3,000</td>
<td>4,060, 4,060</td>
</tr>
<tr>
<td><strong>Downtown</strong></td>
<td><strong>2nd and Main</strong></td>
<td><strong>J-216</strong></td>
<td>594</td>
<td>2,500</td>
<td><strong>2,170, 2,170</strong></td>
</tr>
<tr>
<td><strong>Mt. Si Business Park</strong></td>
<td>1546 Boalch Avenue NW</td>
<td><strong>J-65</strong></td>
<td>594</td>
<td>3,500</td>
<td><strong>2,800, 2,790</strong></td>
</tr>
<tr>
<td>Si View</td>
<td>Mountain View Boulevard SE and SE 10th Street</td>
<td>J-275</td>
<td>594</td>
<td>1,000</td>
<td>1,560, 1,540</td>
</tr>
<tr>
<td><strong>SE North Bend</strong></td>
<td><strong>End of SE 135th Street</strong></td>
<td><strong>J-88</strong></td>
<td>594</td>
<td>1,000</td>
<td><strong>700, 690</strong></td>
</tr>
<tr>
<td>Forster Woods</td>
<td>South end of Forster Boulevard SW</td>
<td>J-165</td>
<td>710</td>
<td>1,000</td>
<td>1,220, 1,210</td>
</tr>
<tr>
<td><strong>NE North Bend</strong></td>
<td><strong>Boxley Avenue and NE 5th Street</strong></td>
<td><strong>J-33</strong></td>
<td>594</td>
<td>1,000</td>
<td><strong>700, 690</strong></td>
</tr>
<tr>
<td>Si View South</td>
<td>South end of Mountain View Boulevard SE</td>
<td>J-282</td>
<td>594</td>
<td>1,000</td>
<td>1,240, 1,230</td>
</tr>
<tr>
<td>East North Bend</td>
<td>SE Symmons</td>
<td>J-83</td>
<td>594</td>
<td>1,000</td>
<td>2,100, 2,080</td>
</tr>
<tr>
<td><strong>East end of SE 10th Street</strong></td>
<td><strong>J-11</strong></td>
<td>594</td>
<td>1,000</td>
<td><strong>700, 700</strong></td>
<td></td>
</tr>
<tr>
<td>Les Schwab</td>
<td>North Bend Way and Cedar Falls Way</td>
<td>J-465</td>
<td>594</td>
<td>3,000</td>
<td>3,270, 3,230</td>
</tr>
<tr>
<td><strong>North Bend Way and Cedar Falls Way</strong></td>
<td><strong>J-268</strong></td>
<td>594</td>
<td>3,000</td>
<td><strong>1,950, 1,940</strong></td>
<td></td>
</tr>
<tr>
<td>Sydney Avenue</td>
<td>J-265</td>
<td>594</td>
<td>3,000</td>
<td>1,430</td>
<td>1,430</td>
</tr>
<tr>
<td>428th Avenue SE</td>
<td>J-321</td>
<td>594</td>
<td>1,000</td>
<td>2,830</td>
<td>2,920</td>
</tr>
<tr>
<td>Rock Creek Ridge</td>
<td>Stone Brook Drive SW and Quartz Drive SW</td>
<td>J-305</td>
<td>780</td>
<td>2,000</td>
<td>3,740, 3,730</td>
</tr>
</tbody>
</table>

---

1. Fire flow available while maintaining a minimum system wide pressure of 20 psi.
2. 2040 fire flows are given without improvements presented in Chapter 8.

Note: **Bold** signifies deficient fire flow.
### TABLE 4-9

**Fire Flow Results for Deficient Locations**

<table>
<thead>
<tr>
<th>Location</th>
<th>Node</th>
<th>Fire Flow Required (gpm)</th>
<th>2020 Fire Flow Available (gpm)</th>
<th>Reason for Deficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 87th Street and 436th Place SE</td>
<td>J-1</td>
<td>1,000</td>
<td>680</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>End of SE 108th Street</td>
<td>J-11</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>Riverside Drive SE and SE Maple Drive</td>
<td>J-115</td>
<td>1,000</td>
<td>960</td>
<td>6-inch and 4-inch pipe</td>
</tr>
<tr>
<td>End of Riverside Drive SE</td>
<td>J-116</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>SE 123rd Street and 415th Avenue SE</td>
<td>J-127</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>SE 87th Street and 436th Place SE</td>
<td>J-2</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>Main Avenue North and West 2nd Street</td>
<td>J-216</td>
<td>2,500</td>
<td>2,170</td>
<td>8-inch and 6-inch pipe</td>
</tr>
<tr>
<td>Main Avenue North and West 4th Street</td>
<td>J-259</td>
<td>1,000</td>
<td>930</td>
<td>6-inch pipe</td>
</tr>
<tr>
<td>West North Bend Way and Sydney Avenue North</td>
<td>J-265</td>
<td>3,000</td>
<td>1,430</td>
<td>6-inch and 4-inch pipe</td>
</tr>
<tr>
<td>Borst Avenue NE and NE 9th Street</td>
<td>J-28</td>
<td>1,000</td>
<td>890</td>
<td>6-inch pipe</td>
</tr>
<tr>
<td>SE 92nd Street and 436th Avenue SE</td>
<td>J-3</td>
<td>1,000</td>
<td>700</td>
<td>6-inch pipe</td>
</tr>
<tr>
<td>Borst Avenue NE and NE 6th Street</td>
<td>J-30</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>End of Taylor Place NE</td>
<td>J-31</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>End of Boxley Place NE</td>
<td>J-32</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>Boxley Place NE and NE 5th Street</td>
<td>J-33</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>NE 5th Street and Pickett Avenue NE</td>
<td>J-34</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>End of Pickett Avenue NE</td>
<td>J-35</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>End of East 2nd Street</td>
<td>J-58</td>
<td>3,500</td>
<td>1,530</td>
<td>8-inch pipe</td>
</tr>
<tr>
<td>Mount Si Business Park -1546 Boalch Avenue NW</td>
<td>J-65</td>
<td>3,500</td>
<td>2,800</td>
<td>Dead end 12-inch pipe</td>
</tr>
<tr>
<td>Thrasher Avenue NE</td>
<td>J-74</td>
<td>1,000</td>
<td>700</td>
<td>6-inch pipe on North Bend Way, Dead end</td>
</tr>
<tr>
<td>SE 136th Street and 423rd Avenue SE</td>
<td>J-87</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>End of SE 135th Street</td>
<td>J-88</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>End of SE 133rd Street</td>
<td>J-89</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>423rd Avenue SE and SE 133rd Street</td>
<td>J-93</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>End of 423rd Avenue SE</td>
<td>J-94</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>East North Bend Way and Thrasher Avenue NE</td>
<td>J-441</td>
<td>1,000</td>
<td>700</td>
<td>Dead end 6-inch pipe</td>
</tr>
<tr>
<td>Thrasher Avenue NE</td>
<td>J-583</td>
<td>1,000</td>
<td>700</td>
<td>6-inch pipe on North Bend Way, Dead end</td>
</tr>
<tr>
<td>End of Merritt Avenue NE</td>
<td>J-615</td>
<td>1,000</td>
<td>310</td>
<td>Dead end 4-inch pipe</td>
</tr>
</tbody>
</table>

(1) Fire flow available while maintaining a minimum system wide pressure of 20 psi.
TABLE 4-10

Improved Fire Flow Results for Deficient Locations

<table>
<thead>
<tr>
<th>Location</th>
<th>Node</th>
<th>Fire Flow Required (gpm)</th>
<th>2040 Improved Fire Flow Available (gpm)(^{(1)})</th>
<th>Projects Resolving Deficiency(^{(2)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE 87th Street and 436th Place SE</td>
<td>J-1</td>
<td>1,000</td>
<td>1,050</td>
<td>D-16</td>
</tr>
<tr>
<td>End of SE 108th Street</td>
<td>J-11</td>
<td>1,000</td>
<td>1,250</td>
<td>D-9</td>
</tr>
<tr>
<td>Riverside Drive SE and SE Maple Drive</td>
<td>J-115</td>
<td>1,000</td>
<td>1,250</td>
<td>D-5</td>
</tr>
<tr>
<td>End of Riverside Drive SE</td>
<td>J-116</td>
<td>1,000</td>
<td>1,250</td>
<td>D-5</td>
</tr>
<tr>
<td>SE 123rd Street and 415th Avenue SE</td>
<td>J-127</td>
<td>1,000</td>
<td>1,240</td>
<td>D-7</td>
</tr>
<tr>
<td>SE 87th Street and 436th Place SE</td>
<td>J-2</td>
<td>1,000</td>
<td>1,170</td>
<td>D-16</td>
</tr>
<tr>
<td>Main Avenue North and West 2nd Street</td>
<td>J-216</td>
<td>2,500</td>
<td>3,050</td>
<td>D-2</td>
</tr>
<tr>
<td>Main Avenue North and West 4th Street</td>
<td>J-259</td>
<td>1,000</td>
<td>1,470</td>
<td>D-1</td>
</tr>
<tr>
<td>West North Bend Way and Sydney Avenue North</td>
<td>J-265</td>
<td>3,000</td>
<td>3,440</td>
<td>D-3</td>
</tr>
<tr>
<td>Borst Avenue NE and NE 9th Street</td>
<td>J-28</td>
<td>1,000</td>
<td>1,170</td>
<td>D-10</td>
</tr>
<tr>
<td>SE 92nd Street and 436th Avenue SE</td>
<td>J-3</td>
<td>1,000</td>
<td>1,690</td>
<td>D-16</td>
</tr>
<tr>
<td>Borst Avenue NE and NE 6th Street</td>
<td>J-30</td>
<td>1,000</td>
<td>1,250</td>
<td>D-11</td>
</tr>
<tr>
<td>End of Taylor Place NE</td>
<td>J-31</td>
<td>1,000</td>
<td>1,220</td>
<td>D-14</td>
</tr>
<tr>
<td>End of Boxley Place NE</td>
<td>J-32</td>
<td>1,000</td>
<td>1,220</td>
<td>D-14</td>
</tr>
<tr>
<td>Boxley Place NE and NE 5th Street</td>
<td>J-33</td>
<td>1,000</td>
<td>1,220</td>
<td>D-14</td>
</tr>
<tr>
<td>NE 5th Street and Pickett Avenue NE</td>
<td>J-34</td>
<td>1,000</td>
<td>1,220</td>
<td>D-13</td>
</tr>
<tr>
<td>End of Pickett Avenue NE</td>
<td>J-35</td>
<td>1,000</td>
<td>1,220</td>
<td>D-13</td>
</tr>
<tr>
<td>End of East 2nd Street</td>
<td>J-58</td>
<td>3,500</td>
<td>3,520</td>
<td>D-6</td>
</tr>
<tr>
<td>Mount Si Business Park - 1546 Boalch Avenue NW</td>
<td>J-65</td>
<td>3,500</td>
<td>3,990</td>
<td>D-17, DE-5, DE-6, DE-7</td>
</tr>
<tr>
<td>Thrasher Avenue NE</td>
<td>J-74</td>
<td>1,000</td>
<td>1,250</td>
<td>D-12</td>
</tr>
<tr>
<td>SE 136th Street and 423rd Avenue SE</td>
<td>J-87</td>
<td>1,000</td>
<td>1,240</td>
<td>D-8</td>
</tr>
<tr>
<td>End of SE 135th Street</td>
<td>J-88</td>
<td>1,000</td>
<td>1,230</td>
<td>D-8</td>
</tr>
<tr>
<td>End of SE 133rd Street</td>
<td>J-89</td>
<td>1,000</td>
<td>1,190</td>
<td>D-8</td>
</tr>
<tr>
<td>423rd Avenue SE and SE 133rd Street</td>
<td>J-93</td>
<td>1,000</td>
<td>1,080</td>
<td>D-8</td>
</tr>
<tr>
<td>End of 423rd Avenue SE</td>
<td>J-94</td>
<td>1,000</td>
<td>1,080</td>
<td>D-8</td>
</tr>
<tr>
<td>E North Bend Way and Thrasher Avenue NE</td>
<td>J441</td>
<td>1,000</td>
<td>1,250</td>
<td>D-8</td>
</tr>
<tr>
<td>Thrasher Avenue NE</td>
<td>J583</td>
<td>1,000</td>
<td>1,250</td>
<td>D-12</td>
</tr>
<tr>
<td>End of Merritt Avenue NE</td>
<td>J615</td>
<td>1,000</td>
<td>1,250</td>
<td>D-15</td>
</tr>
</tbody>
</table>

(1) Fire flow available while maintaining a minimum system wide pressure of 20 psi.
(2) See Chapter 8 for descriptions of the Capital Improvement Program projects.
CHAPTER 5

WATER USE EFFICIENCY PROGRAM

OBJECTIVE

This chapter identifies the conservation and water use efficiency requirements pertaining to the City, evaluates past conservation efforts, and describe the City’s water use efficiency plan for the next 10 years.

WATER USE EFFICIENCY PLANNING REQUIREMENTS

The Washington Legislature passed the Water Use Efficiency Act of 1989 (43.20.230 RCW), which directs DOH to develop procedures and guidelines relating to water use efficiency.

In 2003, the Municipal Water Supply – Efficiency Requirements Act (Municipal Water Law) was passed and amended RCW 90.46 to require additional conservation measures. The Municipal Water Law, among other things, directed DOH to develop the Water Use Efficiency Rule (WUE Rule), which is outlined in the Water Use Efficiency Guidebook and became effective January 22, 2007.

These documents provide guidelines and requirements regarding the development and implementation of conservation and efficiency programs for public water systems. Conservation and efficiency programs developed in compliance with these documents are required by DOH and by Ecology as part of a public water system water right application. Conservation must be evaluated and implemented as an alternate source of supply before State agencies approve applications for new or expanded water rights.

Conservation can be used effectively to help meet the increased demand for water, to protect the environment, to delay the development of costly infrastructure, and to ensure that water is available to meet economic and population growth consistent with the Growth Management Act by using existing supplies more efficiently. Public awareness and participation are necessary for the City to develop an active and beneficial conservation plan.

The third and most recent edition of the WUE Guidebook was released in January 2017. As an extension to the Conservation Planning Requirements, the WUE Rule sets more stringent requirements for public water purveyors. The WUE Rule is comprised of the following six sections:

1. Water Use Efficiency Requirements
2. Water Meters
3. Data Collection
4. Distribution System Leakage
5. Demand Forecasting
6. Water Use Efficiency Program and Goals

The following sections provide a discussion of each section, requirements, and the impact the WUE Rule has on the City.

WATER USE EFFICIENCY REQUIREMENTS

The Water Use Efficiency Guidebook establishes varying implementation and evaluation requirements for municipal water suppliers (MWS). The new requirements focus on the importance of measuring water usage and evaluating the effectiveness of the WUE program. There are three fundamental elements to the Rule, including planning, distribution leakage standards, and goal setting and performance reporting.

Table 5-1 provides a summary of the WUE Rule requirements applicable to the City.

TABLE 5-1

Summary of WUE Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Deadline(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include WUE Program in Planning Documents</td>
<td>January 22, 2008</td>
</tr>
<tr>
<td>Set WUE Goals</td>
<td>January 22, 2008</td>
</tr>
<tr>
<td>Submit Service Meter Installation Schedule</td>
<td>July 1, 2008</td>
</tr>
<tr>
<td>Submit First Annual Performance Report</td>
<td>July 1, 2008</td>
</tr>
<tr>
<td>Meet Distribution Leakage Standard (based on 3-year rolling average)</td>
<td>July 1, 2010, or 3 years after installing all service meters</td>
</tr>
<tr>
<td>Complete Installation of All Service Meters</td>
<td>January 22, 2017</td>
</tr>
</tbody>
</table>

(1) Requirements for a municipal water system with 1,000 or more connections.

SOURCE AND SERVICE METERING

The WUE Rule requires all sources and customer service connection be metered by 2017. The City currently meters all sources and customers and is, therefore, in full compliance with this requirement. All new sources and customers will also continue to be metered.

DATA COLLECTION AND REPORTING

The WUE Rule requires regular collection of production and consumption data. Data must be reported in the City’s planning documents and annual performance report to DOH. Water use data will be used for the following:

- Calculating leakage;
- Forecasting demand for future water needs;
• Identifying areas for more efficient water use;
• Evaluating the success of the WUE program;
• Describing water supply characteristics; and
• Aiding in decision-making about water management.

Table 5-2 summarizes the water use data collection requirements.

### TABLE 5-2

**Summary of Water Use Data Collection**

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source of Supply Meter Data</td>
<td>Monthly and annual totals of production, purchased water from another system, and/or supplied to other systems through interties.</td>
</tr>
<tr>
<td>Service Meter Data</td>
<td>Total annual consumption, annual consumption by each customer class, and customer class seasonal variations.</td>
</tr>
</tbody>
</table>

This data is needed to meet the planning and performance reporting requirements and to check compliance with the distribution system leakage standard of the WUE Rule. The City is currently in compliance with this regulation.

### DISTRIBUTION SYSTEM LEAKAGE STANDARD

The *Conservation Planning Requirements* set the maximum allowable rate of lost and unaccounted for water at 20 percent of total source production. The WUE Rule now requires that water distribution systems have a leakage rate less than 10 percent of finished water production based on a 3-year rolling average. DSL is defined as the difference between the volumes of production (by sources) and authorized consumption measured by service meters (plus other credibly estimated usage). DSL includes water loss due to leaks or unauthorized uses such as illegal service connections, accounting errors, inaccurate source and customer meters, and water leaving the system for any unmetered use. Unmetered uses typically include flushing of mains and fire flows.

The City’s DSL for 2010 through 2019 is summarized in Table 5-3 below.
TABLE 5-3

Distribution System Leakage

<table>
<thead>
<tr>
<th>Year</th>
<th>Metered Production (MG)</th>
<th>Metered Use (MG)</th>
<th>DSL (MG)</th>
<th>3-year Average (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>230</td>
<td>181</td>
<td>49</td>
<td>21.3%</td>
</tr>
<tr>
<td>2010</td>
<td>213</td>
<td>162</td>
<td>52</td>
<td>24.2%</td>
</tr>
<tr>
<td>2011</td>
<td>185</td>
<td>152</td>
<td>33</td>
<td>18.0%</td>
</tr>
<tr>
<td>2012</td>
<td>192</td>
<td>156</td>
<td>36</td>
<td>18.6%</td>
</tr>
<tr>
<td>2013</td>
<td>199</td>
<td>163</td>
<td>37</td>
<td>18.4%</td>
</tr>
<tr>
<td>2014</td>
<td>199</td>
<td>167</td>
<td>32</td>
<td>16.3%</td>
</tr>
<tr>
<td>2015</td>
<td>205</td>
<td>180</td>
<td>25</td>
<td>12.1%</td>
</tr>
<tr>
<td>2016</td>
<td>195</td>
<td>163</td>
<td>32</td>
<td>16.3%</td>
</tr>
<tr>
<td>2017</td>
<td>207</td>
<td>169</td>
<td>38</td>
<td>18.5%</td>
</tr>
<tr>
<td>2018</td>
<td>212</td>
<td>164</td>
<td>48</td>
<td>22.8%</td>
</tr>
<tr>
<td>2019</td>
<td>200</td>
<td>152</td>
<td>48</td>
<td>25.9%</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td></td>
<td>19.1%</td>
<td>18.7%</td>
</tr>
</tbody>
</table>

The 2019 DSL was 25.9 percent while the 3-year rolling average was 22.4 percent. As both DSL values are above 10 percent, a Water Loss Control Action Plan is required and will be included as part of this chapter.

WATER USE EFFICIENCY PROGRAM

The following sections describe the City’s past and present water use efficiency goals, a description of the conservation measures, and the resulting water use projections.

PAST WATER USE EFFICIENCY GOALS

The previous WSP the City set water use efficiency goals that specifically addressed supply and demand characteristics. The City’s goals for the previous Plan were as follows:

- **Goal 1**: To reduce distribution system leakage to 10 percent by 2015.
- **Goal 2**: To reduce single family residence per capita daily consumption (SFR-PCDC) from 78.3 gallons per day to 75 gallons per day by 2012.

The Goal 1 target of reducing distribution system leakage to 10 percent by 2015 was not met. As can be seen in Table 5-3, in 2015 the historical DSL has consistently remained above 10 percent.
Goal 2 targets for single-family residence per capita daily consumption (SFR-PCDC) and the historical SFR-PCDC for 2010 through 2019 can be compared and summarized in Table 5-4.

**TABLE 5-4**

**Goal 1: SFR-PCDC Evaluation**

<table>
<thead>
<tr>
<th>Year</th>
<th>Target SFR-PCDC (gpd)&lt;sup&gt;(1)&lt;/sup&gt;</th>
<th>Historical SFR-PCDC (gpd)&lt;sup&gt;(1)&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>78.3</td>
<td>77.2</td>
</tr>
<tr>
<td>2011</td>
<td>76.7</td>
<td>67.2</td>
</tr>
<tr>
<td>2012</td>
<td>75</td>
<td>62.2</td>
</tr>
<tr>
<td>2013</td>
<td>75</td>
<td>66.6</td>
</tr>
<tr>
<td>2014</td>
<td>75</td>
<td>60.9</td>
</tr>
<tr>
<td>2015</td>
<td>75</td>
<td>61.4</td>
</tr>
<tr>
<td>2016</td>
<td>75</td>
<td>65.9</td>
</tr>
<tr>
<td>2017</td>
<td>75</td>
<td>59.9</td>
</tr>
<tr>
<td>2018</td>
<td>75</td>
<td>61.2</td>
</tr>
<tr>
<td>2019</td>
<td>75</td>
<td>59.2</td>
</tr>
</tbody>
</table>

<sup>(1)</sup> Assumes 2.5 persons per household for single-family residential accounts.

The goal of reducing SFR-PCDC to 75 gallons per day by 2012 was met and surpassed. SFR-PCDC was 62.2 gpd in 2012 and 59.2 in 2019.

**NEW WATER USE EFFICIENCY GOALS**

Under the WUE Rule, the City must set new water use efficiency goals. These goals must include a measurable outcome, address water supply or demand characteristics, and include an implementation schedule.

**New Goals**

In an effort to improve water efficiency, the City plans to have both a consumption goal (Goal 1) and a production goal (Goal 2).

- Goal 1: Increased consumer conservation. This shall be measured by the average day demand of an ERU (ERU<sub>ADD</sub>) with the goal of reducing ERU<sub>ADD</sub> by 0.75 percent each year over the next 10 years. This consumer conservation would save an estimated 130 million gallons of water over the 10-year planning period. Table 5-5 summarizes the consumption goal, compares ERU consumption with and without increased conservation, and details potential yearly water savings.
TABLE 5-5

Goal 2: ERU_{ADD} Consumption Reduction Goal Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Projected ERUs (excluding DSL)</th>
<th>No Conservation</th>
<th>Conservation</th>
<th>Yearly Water Savings (MG)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ERU_{ADD}(1)</td>
<td>Average Daily Consumption (gpd)(2)</td>
<td>ERU_{ADD}(3)</td>
<td>Average Daily Consumption (gpd)</td>
</tr>
<tr>
<td>2021</td>
<td>3,864</td>
<td>158</td>
<td>609,062</td>
<td>155</td>
</tr>
<tr>
<td>2022</td>
<td>3,911</td>
<td>158</td>
<td>616,585</td>
<td>154</td>
</tr>
<tr>
<td>2023</td>
<td>4,035</td>
<td>158</td>
<td>636,050</td>
<td>153</td>
</tr>
<tr>
<td>2024</td>
<td>4,204</td>
<td>158</td>
<td>662,702</td>
<td>152</td>
</tr>
<tr>
<td>2025</td>
<td>4,404</td>
<td>158</td>
<td>694,288</td>
<td>151</td>
</tr>
<tr>
<td>2026</td>
<td>4,601</td>
<td>158</td>
<td>725,249</td>
<td>150</td>
</tr>
<tr>
<td>2027</td>
<td>4,775</td>
<td>158</td>
<td>752,683</td>
<td>148</td>
</tr>
<tr>
<td>2028</td>
<td>4,973</td>
<td>158</td>
<td>783,957</td>
<td>147</td>
</tr>
<tr>
<td>2029</td>
<td>5,178</td>
<td>158</td>
<td>816,279</td>
<td>146</td>
</tr>
<tr>
<td>2030</td>
<td>5,379</td>
<td>158</td>
<td>847,932</td>
<td>145</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) Average day consumption per ERU from Table 2-8
(2) From Table 2-15
(3) 0.75 percent decrease in ERU_{ADD} per year

- Goal 2: Reduce distribution system leakage to 10 percent by 2026 in order to comply with the DSL leaking standard. In 2019, the City’s unaccounted DSL was 25.6 percent, resulting in a 3-year rolling average of 22.4 percent. The City will use leak detection and data accuracy verification in order to reduce the DSL to 20 percent in 2020. DSL will be further reduced by 1.5 percent each of the following years until 10 percent DSL is reached in 2026. The 3-year rolling average is targeted to reach 10 percent by 2028. Table 5-6 summarizes the production goal.
TABLE 5-6
Goal 1: DSL Reduction and Production Goal Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>DSL w/o WUE Goal(^{(1)})</th>
<th>Target DSL</th>
<th>Target 3-Year Rolling Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2020</td>
<td>19.6%</td>
<td>19.0%</td>
<td>17.9%</td>
</tr>
<tr>
<td>2021</td>
<td>18.4%</td>
<td>17.5%</td>
<td>18.3%</td>
</tr>
<tr>
<td>2022</td>
<td>18.2%</td>
<td>16.0%</td>
<td>17.5%</td>
</tr>
<tr>
<td>2023</td>
<td>17.7%</td>
<td>14.5%</td>
<td>16.0%</td>
</tr>
<tr>
<td>2024</td>
<td>17.1%</td>
<td>13.0%</td>
<td>14.5%</td>
</tr>
<tr>
<td>2025</td>
<td>16.5%</td>
<td>11.5%</td>
<td>13.0%</td>
</tr>
<tr>
<td>2026</td>
<td>15.9%</td>
<td>10.0%</td>
<td>11.5%</td>
</tr>
<tr>
<td>2027</td>
<td>15.4%</td>
<td>10.0%</td>
<td>10.5%</td>
</tr>
<tr>
<td>2028</td>
<td>14.9%</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>2029</td>
<td>14.4%</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>2030</td>
<td>13.9%</td>
<td>10.0%</td>
<td>10.0%</td>
</tr>
</tbody>
</table>

\(^{(1)}\) Assumed DSL in projections shown in Table 2-15.

**Target Water Savings Projections**

Table 5-7 compares average day consumption, DSL, and production with and without savings from the enactment of water use efficiency goals. If these goals are met, a cumulative 332 million gallons of water could be saved between 2021 and 2030.
## TABLE 5-7

Projected Water Use Efficiency Savings

<table>
<thead>
<tr>
<th>Year</th>
<th>Average Day Consumption w/o WUE Goals (gpd)(^{(1)})</th>
<th>Average Day Consumption w/WUE Goals (gpd)(^{(2)})</th>
<th>DSL w/o WUE Goals(^{(3)})</th>
<th>DSL w/WUE Goals(^{(4)})</th>
<th>Average Day Production Without WUE Goals (gpd)(^{(1)})</th>
<th>Average Day Production with WUE Goals (gpd)(^{(5)})</th>
<th>Yearly Water Savings (MG)(^{(6)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>609,062</td>
<td>599,960</td>
<td>18.4%</td>
<td>17.5%</td>
<td>746,048</td>
<td>704,953</td>
<td>15.0</td>
</tr>
<tr>
<td>2022</td>
<td>616,585</td>
<td>602,815</td>
<td>18.2%</td>
<td>16.0%</td>
<td>753,571</td>
<td>699,266</td>
<td>19.8</td>
</tr>
<tr>
<td>2023</td>
<td>636,050</td>
<td>617,182</td>
<td>17.7%</td>
<td>14.5%</td>
<td>773,036</td>
<td>706,673</td>
<td>24.2</td>
</tr>
<tr>
<td>2024</td>
<td>662,702</td>
<td>638,221</td>
<td>17.1%</td>
<td>13.0%</td>
<td>799,689</td>
<td>721,190</td>
<td>28.7</td>
</tr>
<tr>
<td>2025</td>
<td>694,288</td>
<td>663,625</td>
<td>16.5%</td>
<td>11.5%</td>
<td>831,274</td>
<td>739,942</td>
<td>33.3</td>
</tr>
<tr>
<td>2026</td>
<td>725,249</td>
<td>688,020</td>
<td>15.9%</td>
<td>10.0%</td>
<td>862,235</td>
<td>756,822</td>
<td>38.5</td>
</tr>
<tr>
<td>2027</td>
<td>752,683</td>
<td>708,690</td>
<td>15.4%</td>
<td>10.0%</td>
<td>889,669</td>
<td>779,559</td>
<td>40.2</td>
</tr>
<tr>
<td>2028</td>
<td>783,957</td>
<td>732,600</td>
<td>14.9%</td>
<td>10.0%</td>
<td>920,943</td>
<td>805,859</td>
<td>42.1</td>
</tr>
<tr>
<td>2029</td>
<td>816,279</td>
<td>757,084</td>
<td>14.4%</td>
<td>10.0%</td>
<td>953,265</td>
<td>832,792</td>
<td>44.0</td>
</tr>
<tr>
<td>2030</td>
<td>847,932</td>
<td>780,543</td>
<td>13.9%</td>
<td>10.0%</td>
<td>984,918</td>
<td>858,597</td>
<td>46.1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>332.0</td>
</tr>
</tbody>
</table>

(1) From Table 2-15.
(2) From Table 5-6.
(3) Based on projected daily DSL loss in Table 2-15.
(4) From Table 5-7.
(5) Average Day Production with WUE Goals = (Average Day Consumption with WUE Goals)*(1+ DSL With WUE Goals).
(6) Yearly Water Savings = Average Day Production w/o WUE Goals – Average Day Production w/WUE Goals.
WATER USE EFFICIENCY MEASURES

The WUE Rule requires the evaluation or implementation of different water use efficiency measures to help meet the WUE goals. The WUE Guidebook gives a list of mandatory measures that must be implemented or evaluated as well as a list of supplemental measures that can be counted toward the WUE Program. WAC 246-290-810 identifies the minimum number of water use efficiency measures that must be evaluated based on system size. As the City of North Bend serves between 2,500 and 9,999 customers, the WUE Program must evaluate or implement a minimum of six water use efficiency measures.

The following sections describe both the mandatory and supplementary water use efficiency measures adopted by the City, and indicate which have been or will be implemented.

Mandatory Measures

Implement Source and Service Metering and Meter Calibration

The City currently meters all sources and customer connections and will continue to meter all new customers and sources. Service meters are tested for accuracy upon customer request or if the City feels testing is warranted. The City began a 15-year meter replacement program in 2019, with all meters scheduled to be replaced by the end of 2034.

Implement Leak Detection and Water Accounting

The City began its leak detection program in 2010. The program calls for system-wide leak detection a minimum of once every 3 years or whenever a large increase in DSL occurs. The program located 12 leaks in 2016 and 11 in 2019. All the 2016 leaks were repaired while only nine of the 2019 leaks could be located and repaired. These leaks typically ranged from a few gpm to 20 gpm. The City will continue to implement the distribution system leak detection program and will continue to focus on areas suspected of leaks and areas of aging infrastructure. Corrective action will be taken as necessary and when deemed viable.

The City continues monitoring customer accounts for leaks as well. City staff can identify potential leaks during meter reads. The City’s touch-read meters can report if a meter has been running for 24 hours straight or if the reading is unusually high. The billing clerk reviews usage monthly, flagging high or low reads. The billing software can also be programmed to flag account usage based on percent variation from month-to-month.
Implement Customer Education

The City has and will continue to include information about water conservation and efficient use in bill inserts and newsletters. Examples of previous inserts and newsletters can be found in Appendix I.

Evaluate Conservation Rate Structure

The City has previously evaluated and enacted an inclining block rate structure to encourage efficient water use by their customers. After studies which considered the financial effects on both the City and customers, an inclining block rate structure was adopted for single-family residential and irrigation customers. Future rate studies will consider an inclining block rate structure for multifamily and commercial customers as well.

Evaluate Reclaimed Water Opportunities

The uses of reclaimed water for opportunities such as irrigation or other non-potable uses come at a uniquely high cost and could adversely affect the City of North Bend.

The City’s well has been determined to affect the in-stream flows of the Snoqualmie River. As such, the City is required by the Department of Ecology to mitigate the effect of their water withdrawals on the river. Mitigation water requirements are calculated using an algorithm that takes into account well pumping rate, wastewater treatment plant effluent flow, USGS streamflow gages, and mitigation water from Hobo Springs. The effluent flow from the wastewater treatment plant is a key component that factors into these mitigation requirements. As a result, any benefit from developing reclaimed water uses would have to be offset by increased mitigation from other sources.

Any potential use of reclaimed water would decrease the wastewater treatment plant effluent which flows back to the Snoqualmie River. This would negatively affect the City’s ability to use its water resources. Consequently, reclaimed water use will not be implemented as a water use efficiency measure. A water reclamation checklist for the City’s water system is included in Appendix I.

Supplementary Measures

The City has either evaluated or implemented all mandatory measures discussed in the previous section in an effort to further reduce water use. The following supplementary measures will also be implemented as part of the WUE Plan.
Additional Customer Education

The City’s website includes water use efficiency information on a page titled “Water Conservation.” This page includes an introduction to water conservation as well as links to more in-depth documents prepared by the City to help customers use water more efficiently. The topics covered apply to single-family residential, multi-family residential, commercial customers and landscaping.

Bill Showing Consumption History

The City includes updated consumption history in bills sent to single-family residential, multi-family residential, and commercial customers. This allows the customer to track their water use and compare usage over multiple billing periods.

Conservation Pricing

The City currently has an inclining block rate structure to encourage efficient water use by its single-family residential and irrigation customers. The City charges a commodity fee determined by the size of service line and an increasing block on water use by volume. Customers outside the City limits are also billed a higher rate. The City’s water rates can be found in Table 8-1.

Summary of Supplemental Measures

Based on its number of connections, the City must either implemented or evaluate six water use efficiency measures. The City has either implement or evaluated five mandatory measure and three supplementary measure, for a total of eight WUE measures.

Evaluation of Measures

Many of the measures selected for continued implementation require little additional funding, such as including consumption history in bills and including information in inserts and online. The City will track the finances associated with each measure and compare it to water saved to evaluate the effectiveness of each measure. If measures do not provide enough savings to meet goals, additional measures will be considered.

OPTIMIZING USE OF CURRENT SUPPLIES

The City plans to continue efforts to further optimize current water supply. The City’s current water rights allow for a total water withdrawal of 3,430 acre-feet per year. Implementing efficiency measures will help to not only reduce annual water use but also minimize effects to the Snoqualmie River along with the corresponding mitigation water requirements.
PERFORMANCE REPORTING

The City must set water use efficiency goals and report progress annually. The annual report must include:

- Total source production;
- Distribution system leakage in percentage and volume; and
- Goal description, schedule, and progress toward meeting goals.

Annual reports will be available to the public and submitted to customers and DOH. The Annual Report for 2018 is included in Appendix I.

WATER LOSS CONTROL ACTION PLAN

In 2019, the City’s DSL was 25.9 percent with a 3-year rolling average DSL of 22.4 percent. Both DSL values are above the distribution system leakage standard of 10 percent. As a result, the City must implement a Water Loss Control Action Plan. The following elements are included in the Plan:

- The water loss control methods include meter replacement for increased accuracy and pipe replacement to reduce leakage.

- The City will work to reach the 10 percent yearly standard by 2026 and the 10 percent 3-year rolling DSL standard by 2028. A more detailed schedule for reaching the 10 percent DSL standard can be found in Table 5-7.

- Leak detection has already been part of the City’s operating budget but will now be shown as a separate line item in financial projections in Table 8-6. The City’s Capital Improvement Plan, which is detailed in Chapter 7, calls for the continuation of the City’s meter replacement program as well as new replacement projects for asbestos concrete (AC) and leaking water mains. Both the meter replacement and water main replacement projects are included in the financial projections in Table 8-6 under Capital Projects.

- There are no anticipated technical or economic concerns that could prevent the City from complying with the standard.

ASSESSING DATA ACCURACY AND COLLECTION METHODS

The City has taken and will continue to take measures to ensure the accuracy of its water production and consumption data. The master meters at both the Mount Si Springs Booster Station (2017) and the Centennial Well (2019) were replaced. Both new
magnetic flow meters continuously transmit readings to the City’s SCADA system. Readings are also recorded manually on a daily basis by City staff.

In July and August 2019, the flow leaving the Centennial Well was under-reported by 50 percent after routine maintenance after the magnetic flowmeter was reinstalled incorrectly. Corrective measures were implemented to provide the necessary mitigation water and fix the meter. A summary of these events and actions can be found in the incident report in Appendix J.

Many of the City’s water service meters are touch-read meters which were installed over 20 years ago. There has been concern these meters are nearing the end of their useful life and have begun under-reading consumption volumes. This could ultimately be both costing the City water revenues and increasing the system’s reported DSL. In 2019, the City began its meter replacement program which will replace all service meters over the next 15 years. The new meters will be Neptune drive-by radio-reads. The meter replacement program may be accelerated if additional funds become available or initial replacements result in a significant decrease in DSL.

FIELD ACTIVITIES TO REDUCE LEAKAGE

The City performs leak detection, at minimum once every 3 years, or when there is a large increase in DSL. City staff identified 12 leaks in 2016 and 11 leaks in 2019. The City will continue its leak detection program and prioritize the replacement of aging water mains with frequent leaks or breaks.

WATER LOSS CONTROL METHODS

The City plans to employ several aggressive water loss control methods to reduce leakage and eliminate water accounting inaccuracies described below.

To address system leakage, the City will continue the previously described leak detection program.

To reduce the potential of meter reading inaccuracies, the City will continue its large meter calibration program. All 2-inch up to 4-inch meters are calibrated every 3 to 5 years and all 4-inch and larger meters are calibrated every 1 to 3 years.

The City’s touch read meter registers alert meter reading staff when service meters fail. Upon receiving this error, the meter is checked and, if necessary, repaired or replaced. The City is also aware that many service meters may have reached the end of their useful life and could be under-reading consumption volume. A 15-year meter replacement program began in 2019 and could be accelerated if proven to be effective at reducing DSL.

The City’s Capital Improvement Plan, as outlined in Chapter 7, includes an aggressive
pipe replacement program for aging pipes, especially those with a history of leakage. The City’s 10-year Capital Improvement Program includes over 12,000 linear feet of pipe replacement. This pipe replacement will include over 10,000 linear feet of aging AC pipe, a likely contributor to DSL.

Funding for these projects is discussed in Chapter 8 and detailed in Table 8-6.
CHAPTER 6

OPERATION AND MAINTENANCE PROGRAM

WATER SYSTEM MANAGEMENT AND PERSONNEL

The City of North Bend is governed by a mayor and a city council. Water system staff includes an operator and three maintenance workers. The certification status of the water utility staff is shown below:

Mr. Kraig Kramer (CCS, WDM2, WTPO-OIT) – Lead Water System Operator
  ○ Water Distribution Manager 2
  ○ Cross-Connection Control Specialist 1
  ○ Water Treatment Plant Operator-In-Training

Mr. Jake Thompson (CCS, WDM2, WTPO2-OIT, BAT) – Water System Maintenance Worker
  ○ Water Distribution Manager 2
  ○ Cross-Connection Control Specialist 1
  ○ Backflow Assembly Tester 1
  ○ Water Treatment Plant Operator 2 – In Training

Mr. Jim Cassasa (WDM2, WTPO2) – Water System Maintenance Worker
  ○ Water Distribution Manager 2
  ○ Water Treatment Plant Operator 2

Mr. Nick Johnson – Water System Maintenance Worker

OPERATOR CERTIFICATION

State law requires Group A public water systems to retain operators certified as competent to operate and manage the system. WAC 246-292 describes the requirements for cities and for operators. The City serves a population between 1,501 and 15,000 and is classified as a Group 2 water system per WAC 246-292-040. The City is required to employ at least one water district manager (WDM) with a certification level at or above the City’s group classification. The City has three operators with suitable certification.

PROFESSIONAL GROWTH REQUIREMENTS

In order to promote and maintain expertise for the various grades of operator certification, Washington State requires that all certified operators complete not less than three Continuing Education Units (CEU) within each 3-year period. Programs sponsored by both Washington Environmental Training Resources Center (WETRC) and the American Waterworks Association (AWWA) Pacific Northwest Subsection are the most
popular source of CEUs for certified operators in Washington State. The City’s operators currently have the required number of CEUs.

Operator training is an important component in maintaining a safe and reliable water system. At a minimum, all personnel performing water system related duties should receive training in the following areas:

- Confined Space
- Trenching and Shoring
- Traffic Flagging
- Asbestos Cement Pipe Safety
- Cross-Connection Control

The City’s water system operators typically complete more than the required CEUs within a given period. All utility workers are certified in asbestos cement pipe safety, CPR and first aid, and all are certified in traffic flagging. Other utility staff have expressed interest in and are encouraged to become certified as WDM-1 and CCCS. Each year, the City allocates funds for water system operator training.

**SYSTEM OPERATION AND CONTROL**

**SCADA SYSTEM**

The City’s water system facilities are automatically controlled by a computer-based digital telemetry and supervisory control system, or Master Telemetry Unit (MTU). The MTU remotely operates the Mount Si Springs Booster Station and the Centennial Well according to the water level in the Nintendo reservoir. The 710 Booster Station is remotely controlled by the level in the Forster Woods reservoir. The 780 Booster Station is controlled by the pressure in the 780 Zone. In early 2017 the existing Wonderware SCADA software was replaced with a GE Fanuc iFix SCADA system that includes a much more comprehensive historical data logging system, a software alarm dialer, remote access capabilities, and a special report generation software. The computer-based telemetry system also provides remote control and alarm presentation with callout functionality at the City’s existing sewage treatment plant and Public Works Shop, which have fiber optic connections. The remote access feature provides operators a secure interface to the SCADA system via the internet using a laptop, tablet, or smartphone. This feature is utilized primarily by on-call operators to assess alarm callouts prior to physical arrival at the site. The Data Historian is installed on a cloud server (Azure) and is connected to the iFix Data Collector installed on the SCADA server at the WWTP. If the internet connection between the SCADA server and the Data Historian is down, the SCADA server buffers the data until the connection to the Historian is reestablished and then backfills any missing data. This feature maintains the integrity of the Data Historian.
The system includes a remote telemetry unit (RTU) at each pumping facility and at each reservoir. Each RTU provides the interface between the MTU at the Wastewater Treatment Plant (WWTP) and the field device where the RTU is located. It also provides local field control as necessary and stores data until it is transferred to the control computer at the WWTP. Each RTU communicates with the control computer by a radio frequency link (with the exception of the Hobo Springs mitigation RTUs, which were converted from serial radio to Ethernet cellular communication in December of 2018). The WWTP contains the control computer and the main controller which receives information from each RTU. The MTU allows the water system operator to access the control set points of each facility and modify these set points. The computer also provides graphic displays via the monitor, software-based alarm dialer, and data collection that is forwarded to the Cloud-based Data Historian. Once the data are stored in the Historian it can easily be extracted into several different formats for analysis. Currently, the Historian is recording data from a total of 395 tags for both the water and wastewater systems, of which approximately 75 percent are water system tags.

Table 6-1 provides the inputs and outputs of the telemetry system from each of the components of the water supply system.

### TABLE 6-1

**SCADA System Inputs/Outputs**

<table>
<thead>
<tr>
<th>594 Pump Station (Mount Si)</th>
<th>710 Pump Station</th>
<th>780 Pump Station</th>
<th>Centennial Pump Station</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Power failure</td>
<td>- Power failure</td>
<td>- Power failure</td>
<td>- Power failure</td>
</tr>
<tr>
<td>- Pump 1 run/fail</td>
<td>- Pump 1 run/fail</td>
<td>- Pump 1 run/fail</td>
<td>- Alarms-Utility, UPS</td>
</tr>
<tr>
<td>- Pump 2 run/fail</td>
<td>- Pump 2 run/fail</td>
<td>- Pump 2 run/fail</td>
<td>and DC</td>
</tr>
<tr>
<td>- Pump 3 run/fail</td>
<td>- Pump 3 run/fail</td>
<td>- Pump 3 run/fail</td>
<td>- Pump run/fail</td>
</tr>
<tr>
<td>- Pumps H-O-A</td>
<td>- Pump runtimes</td>
<td>- PLC failure</td>
<td>- Pump H-O-A</td>
</tr>
<tr>
<td>- Intrusion</td>
<td>- Intrusion</td>
<td>- Comm Fail</td>
<td>- PLC failure</td>
</tr>
<tr>
<td>- PLC failure</td>
<td>- Pressure</td>
<td>- Pressure</td>
<td>- Comm fail</td>
</tr>
<tr>
<td>- Intrusion</td>
<td>- Low suction</td>
<td>- Low discharge</td>
<td>- Generator fail</td>
</tr>
<tr>
<td>- PLC failure</td>
<td>- pressure alarm</td>
<td>- pressure alarm</td>
<td>- Generator high temp</td>
</tr>
<tr>
<td>- Pump runtimes</td>
<td>- Low Discharge</td>
<td>- High discharge</td>
<td>- Generator low fuel</td>
</tr>
<tr>
<td>- Intrusion</td>
<td>- pressure alarm</td>
<td>- pressure alarm</td>
<td>- ATS breaker closed</td>
</tr>
<tr>
<td>- PLC failure</td>
<td>- High discharge</td>
<td>- pressure alarm</td>
<td>- Hypo Room Flood</td>
</tr>
<tr>
<td>- Comm fail</td>
<td>- pressure alarm</td>
<td>- Low discharge</td>
<td>- Hypo Tank leak</td>
</tr>
<tr>
<td>- Pressure</td>
<td>- High discharge</td>
<td>- pressure alarm</td>
<td>- Hypo Tank Level</td>
</tr>
<tr>
<td>- Low discharge pressure</td>
<td>- pressure alarm</td>
<td>- Flow rate</td>
<td>- Residual CL2 level</td>
</tr>
<tr>
<td>- alarm</td>
<td>- Pump room</td>
<td>- Low flow alarm</td>
<td>- pH</td>
</tr>
<tr>
<td>- Flow rate</td>
<td>- flood alarm</td>
<td>- Fire</td>
<td></td>
</tr>
<tr>
<td>- Low flow alarm</td>
<td>- Level</td>
<td>- Level</td>
<td></td>
</tr>
<tr>
<td>- High flow alarm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Fire</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- pH</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 6-1 – (continued)

SCADA System Inputs/Outputs

<table>
<thead>
<tr>
<th>594 Pump Station (Mount Si)</th>
<th>710 Pump Station</th>
<th>780 Pump Station</th>
<th>Centennial Pump Station</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inputs (continued)</strong></td>
<td><strong>Inputs (continued)</strong></td>
<td><strong>Inputs (continued)</strong></td>
<td><strong>Inputs (continued)</strong></td>
</tr>
<tr>
<td>• Flow total</td>
<td>• Flow rate</td>
<td>• Low FWTank alarm</td>
<td>• Pressure</td>
</tr>
<tr>
<td>• Pond level (flow)</td>
<td>• Flow total</td>
<td>• High FWTank alarm</td>
<td>• Residual CL2 low alarm</td>
</tr>
<tr>
<td>• Weir low flow alarm</td>
<td>• Fire</td>
<td>• CL2 Room Fire Alarm</td>
<td>• CL2 Room Fire Alarm</td>
</tr>
<tr>
<td>• Chlorine leak</td>
<td>• FW Tank Level</td>
<td>• VFD Fail alarm</td>
<td>• VFD Fail alarm</td>
</tr>
<tr>
<td>• Clearwell low Level alarm</td>
<td></td>
<td>• VFD High Temp</td>
<td>• VFD High Temp</td>
</tr>
<tr>
<td>• Power failure</td>
<td></td>
<td>• VFD breaker Closed</td>
<td>• VFD breaker Closed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• VFD full voltage</td>
<td>• VFD full voltage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Operator in trouble alarm</td>
<td>• Operator in trouble alarm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Pump room Intrusion</td>
<td>• Pump room Intrusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Flow rate</td>
<td>• Flow rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Flow totals</td>
<td>• Flow totals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• ATS Status</td>
<td>• ATS Status</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Generator running</td>
<td>• Generator running</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Fire</td>
<td>• Fire</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Well Level</td>
<td>• Well Level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Generator Breaker closed</td>
<td>• Generator Breaker closed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Service Breaker closed</td>
<td>• Service Breaker closed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Valve Power OK</td>
<td>• Valve Power OK</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Nintendo Tank Level</td>
<td>• Nintendo Tank Level</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Flow Valve full open/full closed</td>
<td>• Flow Valve full open/full closed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Waste Valve full open/full closed</td>
<td>• Waste Valve full open/full closed</td>
</tr>
</tbody>
</table>
TABLE 6-1 – (continued)

SCADA System Inputs/Outputs

<table>
<thead>
<tr>
<th>594 Pump Station (Mount Si)</th>
<th>710 Pump Station</th>
<th>780 Pump Station</th>
<th>Centennial Pump Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>Outputs</td>
<td>Outputs</td>
<td>Outputs</td>
</tr>
<tr>
<td>• Pumps H-O-A</td>
<td>• Pumps H-O-A</td>
<td>• None – monitor only</td>
<td>• Pumps H-O-A</td>
</tr>
<tr>
<td>• Weir flow setpoint</td>
<td>• Domestic pumps start/stop setpoints (FWTank level)</td>
<td></td>
<td>• Pump start setpoint (Nintendo Tank level)</td>
</tr>
<tr>
<td>• Pump off/level alarm setpoint</td>
<td>• Fire pump start/stop setpoint (FWTank Level)</td>
<td></td>
<td>• Well Flow Setpoint</td>
</tr>
<tr>
<td></td>
<td>• Setpoints for high/low discharge pressure</td>
<td></td>
<td>• Return Flow Setpoint</td>
</tr>
<tr>
<td></td>
<td>• Set points for Open/close of Bypass valve</td>
<td></td>
<td>• Return flow reset</td>
</tr>
</tbody>
</table>

MAJOR SYSTEM COMPONENTS

The locations of the major system components are shown on Figure 1-3, the system facilities map. A description of the normal operation of each facility is given in the following sections.

Telemetry

The Mt. Si Springs booster station, the Centennial Well, the 710 Booster Station, the 780 Booster Station and the three reservoirs each have a remote telemetry unit (RTU). The RTU records and transmits data to the Master Telemetry Unit (MTU) at the City’s Wastewater Treatment Plant.

The pumps at Mount Si Springs and the Centennial Well are controlled by the water level in the Nintendo Reservoir. The water level is measured with a pressure transducer. The reservoir is 45 feet high. If the springs are in operation and the water level draws down to 37.5 feet, the currently selected pump (based on available flow over the weir) is activated. If the level in the tank drops to 36 feet, the low level alarm is activated. If the Centennial Well is in operation, the pump is activated at a tank level of 36.0 feet.
Currently, the pumps are set to shut off at the Mount Si Springs and the Centennial Well when the level in the Nintendo tank reaches 41.6 feet and 41.0 feet, respectively. It should be noted that these set points are operator adjustable and are sometimes modified to adjust to different operating conditions.

The level in the Forster Woods Reservoir determines when the pumps in the 710 Booster Station are activated. When the level drops to 36.0 feet, the domestic pump is turned on. When the level in the tank drops to 35 feet, the fire pump is activated. This reservoir has a high and a low level alarm. The low level alarm is activated at 35.5 feet and the high level alarm is activated at 43.4 feet. Table 6-2 provides the set points of the Nintendo, I-90, and Forster Woods Reservoirs.

The 780 Booster Station is controlled locally by the discharge pressure. The station’s control panels call on pumps as necessary to maintain a constant 780 Zone pressure of approximately 55 psi using variable frequency drives.

The City’s telemetry system is routinely maintained by the City’s SCADA Supervisor with some assistance by Quality Controls Corporation (QCC).

### TABLE 6-2

Reservoir Set Points

<table>
<thead>
<tr>
<th>Action</th>
<th>Nintendo Reservoir</th>
<th>Forster Woods Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mount Si Springs</td>
<td>Centennial Well</td>
</tr>
<tr>
<td>Lead/Domestic Pump On</td>
<td>36.0 ft</td>
<td>36.0 ft</td>
</tr>
<tr>
<td>Lead/Domestic Pump Off</td>
<td>43.0 ft</td>
<td>43.0 ft</td>
</tr>
<tr>
<td>Follow/High Service Pump On</td>
<td>35.0</td>
<td>35.0</td>
</tr>
<tr>
<td>Follow/Fire High Service Pump Off</td>
<td>37.0</td>
<td>37.0</td>
</tr>
<tr>
<td>Low Reservoir Alarm</td>
<td>35.5 ft</td>
<td>35.5 ft</td>
</tr>
<tr>
<td>High Reservoir Alarm</td>
<td>43.4 ft</td>
<td>43.4 ft</td>
</tr>
</tbody>
</table>

### Reservoirs

As described in Chapter 1, the City operates three reservoirs, with capacities of 2.0 MG (Nintendo), 0.75 MG (Forster Woods), and 0.5 MG (I-90). Water is normally pumped from the Mount Si Springs or the Centennial Well into the Nintendo and I-90 Reservoirs, which are located in the 594 Zone. Water is then pumped through a booster station into the Forster Woods Reservoir, which feeds the 710 Zone by gravity. Table 6-3 provides a summary of North Bend’s reservoirs.
TABLE 6-3

North Bend Reservoirs

<table>
<thead>
<tr>
<th>Name</th>
<th>Size (gallons)</th>
<th>Constructed</th>
<th>Material</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nintendo</td>
<td>2,000,000</td>
<td>1991</td>
<td>Concrete</td>
<td>Cleaned in 2020</td>
</tr>
<tr>
<td>Forster Woods</td>
<td>750,000</td>
<td>1994</td>
<td>Steel</td>
<td>Cleaned in 2020</td>
</tr>
<tr>
<td>I-90</td>
<td>500,000</td>
<td>1967</td>
<td>Steel</td>
<td>Cleaned in 2020</td>
</tr>
</tbody>
</table>

Source of Supply

The City obtains its water from the Mount Si Springs and the Centennial Well.

The pump station at the springs consists of three pumps that supply water to the reservoirs and the distribution system. One of the pumps was installed with the original development of the Springs in 1967. The other two were installed in 2017. The original pump was removed and completely rebuilt in 2001. Table 6-4 provides a summary of the pumps in operation at the Springs pump house.

TABLE 6-4

Mount Si Springs Pump Characteristics

<table>
<thead>
<tr>
<th>Pump</th>
<th>Serial No.</th>
<th>Year Installed</th>
<th>Pumping Rate (1)</th>
<th>Motor</th>
<th>Date of Last Pump Rebuild</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(2)</td>
<td>671-S-0029</td>
<td>1967</td>
<td>825 gpm</td>
<td>50 hp</td>
<td>4/18/01</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>2017</td>
<td>800 gpm</td>
<td>60 hp</td>
<td>N/A</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>2017</td>
<td>375 gpm</td>
<td>25 hp</td>
<td>N/A</td>
</tr>
</tbody>
</table>

(1) Combined pumping rate is 2,000 gpm.
(2) Spare motor on site.

The City’s Centennial well was brought online in February 2009. The well increases the City’s water right capacity and provides redundancy to the spring source. The pumping rate of the well pump is currently limited by a pump control valve due to low system demand and operational needs. The pump control valve controls the flow to an operator-enterable set point, which is presently set at 1,100 gpm. Table 6-5 provides a summary of the pump at the Centennial Well.
TABLE 6-5

Centennial Well Pump Characteristics

<table>
<thead>
<tr>
<th>Pump</th>
<th>Serial No.</th>
<th>Year Installed</th>
<th>Pumping Capacity</th>
<th>Motor</th>
<th>Date of Last Pump Rebuild</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>326280</td>
<td>2009</td>
<td>2,500 gpm</td>
<td>250 hp</td>
<td>N/A</td>
</tr>
</tbody>
</table>

During winter operations the City generally runs only one source at a time based on input by the water system operator. In the winter, Mount Si Springs typically has adequate water to supply the entire system. As a result, the Centennial Well water and associated mitigation are not required.

In the summer months, both sources are run simultaneously. Mount Si Springs is operated such that the maximum amount of water is continuously conveyed while guaranteeing the minimum 3 cfs of bypass flow. Centennial Well is then used to make up the remainder of the demand and mitigation is implemented as necessary based on well withdrawals and instream flow.

PREVENTIVE MAINTENANCE PROGRAM

The most cost-effective method for maintaining a water system is to provide a planned preventive maintenance (PM) program. A planned PM program can provide the optimum level of maintenance activities for the least total maintenance cost. The routine maintenance procedures for each system component are described in the following sections.

Mount Si Springs

The spring source is visually inspected daily for security. The cover is kept locked and an 8-foot chain link fence surrounds the facility. The source is enclosed by a concrete manhole capped with a stainless steel hatch cover. The hatch cover was fabricated in 2001. The hatch cover is thoroughly cleaned at least every 2 months. Biodegradable soap is used and care is taken to avoid any spillage into the source. Rock salt is sprinkled around the concrete base to repel slugs and insects. Routine tasks for Mount Si Springs are summarized in Table 6-6.

Centennial Well

The well building is visually inspected daily for security. The pump room and chlorine room interiors are also visually inspected daily for any irregularities. Table 6-6 lists the routine tasks performed by the City at the Centennial Well.
Reservoirs

An improperly maintained reservoir can cause contamination in public water systems. Contaminants can enter the reservoir through cracks or openings at the vent, overflow, or drain screens. Deteriorating hatch covers and vandalism can also compromise reservoir water quality. Poorly designed and maintained reservoirs can hamper the emergency operation of a water system. If reservoir drains are not functioning properly, it may be impossible to purge a contaminant from the system. Written documentation of reservoir maintenance must be completed with each inspection and repair, and a copy of the report retained on file.

The existing three reservoirs are scheduled to be cleaned and inspected for leaks by divers at least every 5 years. Recent maintenance is listed in Table 6-1. Periodic maintenance of the reservoirs will include the following. The internal coating will be checked every 8 to 10 years. The checkup involves a photo video inspection of these interior walls. The exterior of the reservoirs will be pressure washed every 5 years to remove the buildup of moss.

Distribution System Valve and Hydrant Maintenance

The City currently exercises all valves in the system on an annual basis. The City uses a valve exerciser and records the valve maintenance on a maintenance form. A sample form is included in Appendix L. All fire hydrants in the system are exercised on an annual basis and after any construction in the immediate area of the hydrant.

Valves that do not close tight will be removed, repaired, or replaced. An important aspect of distribution system valve maintenance is to ensure distribution valves are completely open. A partially closed valve can significantly reduce peak day operation and fire flow supply. Example maintenance reporting forms are included in Appendix L.

Dead-End Waterlines

Dead-end waterlines are susceptible to water quality problems. The lines must be flushed at least semiannually or more frequently if water quality complaints should occur to remove stagnant water and debris which may have been deposited. The City currently flushes all dead-end mains in the system approximately twice every year as part of the water quality sampling program.

Booster Pump Stations

Table 6-6 lists the routine tasks performed at each of the City’s four pump stations. Appendix L includes a summary of the maintenance recently performed upon the various components of the system.
TABLE 6-6

Pump Station Task Lists

<table>
<thead>
<tr>
<th>Location</th>
<th>Frequency</th>
<th>Data to Record</th>
<th>Tasks</th>
</tr>
</thead>
</table>
| Mount Si Spring Pump Station | Daily     | • Time and Date  
• Chlorinator Rotometer Reading  
• Tank Levels: Nintendo and Forster Woods  
• Daily Water Demand  
• Pump Running Times  
• Power Meter Kilowatt Hours  
• Total Chlorine Usage in 24 Hours  
• Chlorine Residual at Faucet  
• Turbidity Level  
• Water Temperature at Faucet  
• pH Level at Faucet  
• Pond Level at Weir  
• Precipitation at Pond  
• Air Temperature | • Check Water Discharge Pressure at Station  
• Check Pumps, Oil, Packing, Sound, Vibration, and Temperature  
• Check Propane Gas Tank  
• Check Oxygen Bottles are Full  
• Taste Water  
• Check Security  
• Check Alarm Panel |
| Centennial Well          | Daily     | • Time and Date  
• Chlorine Analyzer Reading  
• Tank Levels: Nintendo and Forster Woods  
• Daily Water Demand  
• Pump Running Times  
• Power Meter Kilowatt Hours  
• Total Chlorine Usage in 24 Hours  
• Chlorine Residual at Sample Tap  
• Water Temperature at Tap  
• pH Level at Sample Tap | • Check Water Discharge Pressure at Station  
• Check Pump Oil, Packing, Sound, Vibration, and Temperature  
• Taste Water  
• Check Security  
• Check Alarm Panel |
TABLE 6-6 – (continued)

Pump Station Task Lists

<table>
<thead>
<tr>
<th>Location</th>
<th>Frequency</th>
<th>Data to Record</th>
<th>Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>710 Booster Pump Station</td>
<td>Daily</td>
<td>• Time and Date</td>
<td>• Check Telemetry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Suction Pressure</td>
<td>• Check Security</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Discharge Pressure</td>
<td>• Check Motor Noise, Temperature, and Vibration of Pumps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tank Level</td>
<td>• Check Pumps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Totalizer Gallons Per Day</td>
<td>• Check Motors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Hours of Pump Running Time</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Kilowatt Power Usage</td>
<td></td>
</tr>
<tr>
<td>780 Booster Pump Station</td>
<td>Daily</td>
<td>• Time and Date</td>
<td>• Check Telemetry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Suction Pressure</td>
<td>• Check Security</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Discharge Pressure</td>
<td>• Check Heating and Venting Motors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Tank Level</td>
<td>• Check Pumps</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Totalizer Gallons Per Day</td>
<td>• Check Motors</td>
</tr>
</tbody>
</table>
Meters

Accurate water metering is essential to the financial and conservation components of the water system infrastructure. Substantial revenue may be lost through inaccurate metering of residential, commercial, and industrial accounts. Without accurate master or source meter readings, the water utility cannot determine lost and unaccounted for water volumes. With increasing concern for water use efficiency, accurate determination of water produced and water consumed is critical for the utility.

The City has 12-inch Endress and Hauser flow meters at the Mount Si Pump Station and the Centennial Well to quantify the amount of water pumped into the system. These meters have electronic-built (Heartbeat) monitor that verifies they are performing within factory tolerances. The City also verifies the accuracy of these meters with a parallel “clamp on” flow meter every year.

Approximately 20 years ago, the City replaced all residential service meters with Neptune Touch Read meters. These meters are read by a handheld device. This electronic device results in less work and accounting for the meter reader. The device is able to keep track of water usage and how often a meter has been read. All of the meters within the system are touch-read meters up to a size of 2 inch. There are two meters larger than 2 inch in the City’s water system, one 3-inch meter and one 4-inch meter. These meters do not have touch read registers and are read manually.

When the touch read registers on the service meters fail, the meter reading equipment indicates an error. The registers are checked during the following billing period to verify if repair or replacement is necessary. The expected lifetime of the registers is approximately 10 years.

In 2019, the City started a customer meter replacement program. Under this program, all customer-side meters will be replaced on a 15-year cycle. The new meters that are being installed are Neptune drive-by radio-reads, with the built-in capability of converting to a centralized reading (smart meter) technology in the future. Starting in early 2019, all meters installed for new developments are the new radio-read technology.

Service meters must be replaced according to the following schedule:

1. 3/4-inch and 1-inch meters will be replaced every 10 to 20 years, if necessary.
2. 2-inch through 4-inch meters will be tested and calibrated every 3 to 5 years.
3. 4-inch and larger meters will be tested and calibrated every 1 to 3 years.
Inventory of Materials

The City has sufficient supplies to repair DI pipes in the system from sizes ranging from 6 inch to 12 inch. The City also has service saddles ranging from 2 inch to 12 inch with varying tap sizes.

Maintenance Schedule

Table 6-7 is a schedule of normal maintenance and operations activities. The frequency listed is a minimum and the actual frequency will be adjusted as necessary to meet system requirements.

<table>
<thead>
<tr>
<th>Maintenance</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Check Distribution System and Note Any Suspected Leaks</td>
<td>Daily</td>
</tr>
<tr>
<td>Inspect Sources</td>
<td>Daily</td>
</tr>
<tr>
<td>Collect Routine Coliform Samples</td>
<td>Monthly</td>
</tr>
<tr>
<td>Read Commercial Meters</td>
<td>Monthly</td>
</tr>
<tr>
<td>Read Residential Meters</td>
<td>Monthly</td>
</tr>
<tr>
<td>Flush Dead-End Lines</td>
<td>Semiannually</td>
</tr>
<tr>
<td>Exercise Hydrants</td>
<td>Annually</td>
</tr>
<tr>
<td>Exercise Valves</td>
<td>Annually</td>
</tr>
<tr>
<td>Drain and Clean Reservoirs</td>
<td>Every 5 years</td>
</tr>
</tbody>
</table>

EMERGENCY RESPONSE PROGRAM

Water utilities have the responsibility to provide an adequate and reliable quantity and quality of water at all times. To meet this requirement, utilities must reduce or eliminate the effects of natural disasters, accidents, and intentional acts. Although it is not possible to anticipate all potential disasters affecting the City’s system, formulating procedures to manage and remedy common emergencies is appropriate.

NOTIFICATION PROCEDURES

A procedure for quickly notifying all City staff, customers, other utilities, and if necessary, the local health department and DOH, of a water system related emergency is a necessary component of an Emergency Response Program.

Public Notification

In response to certain water system emergencies, it may be necessary to notify the public of drinking water quality concerns. WAC 246-290-320 indicates the follow-up actions...
that must be taken in the event of water quality emergencies. The public notification requirements of WAC 246-290-320 refer to the Environmental Protection Agency’s (EPA’s) Public Notification (PN) Rule, which is codified in the Code of Federal Regulations (CFR) beginning at section 40 CFR 141.201. In addition to notifying its own customers, the City must notify any wholesale customers of water quality emergencies. The public notifications must provide specific health effects language provided by EPA.

The City notifies local television and radio resources by social media and press release to provide news releases during an emergency situation or other event that requires public notification.

**Water System Personnel Emergency Contact List**

The water system emergency phone list in summarized in Table 6-8 below.

**TABLE 6-8**

<table>
<thead>
<tr>
<th>Agency/Group/Business</th>
<th>Contact</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire/Police Emergency</td>
<td>--</td>
<td>911</td>
</tr>
<tr>
<td>Snoqualmie Police Department</td>
<td>--</td>
<td>(425) 888-3333</td>
</tr>
<tr>
<td>King County Police</td>
<td>--</td>
<td>(206) 296-3311</td>
</tr>
<tr>
<td>Washington State Patrol</td>
<td>--</td>
<td>(425) 401-7288</td>
</tr>
<tr>
<td>Sallal Water District</td>
<td>--</td>
<td>(425) 888-3650</td>
</tr>
<tr>
<td>East Side Fire and Rescue</td>
<td>--</td>
<td>(425) 313-3200</td>
</tr>
<tr>
<td>Telemetry and Meter Calibration</td>
<td>Chris Cole</td>
<td>(425) 888-7688</td>
</tr>
<tr>
<td>Chemical Supplies</td>
<td>Northstar Chemical</td>
<td>(888) 793-9476</td>
</tr>
<tr>
<td>Chemical Supplies</td>
<td>Jones Chemical</td>
<td>(253) 274-0104</td>
</tr>
<tr>
<td>Pump Repair</td>
<td>Grundfos</td>
<td>(425) 644-8501</td>
</tr>
<tr>
<td>Pipe/Fitting Supplies</td>
<td>Core &amp; Main</td>
<td>(425) 393-4930</td>
</tr>
<tr>
<td>Pipe/Fitting Supplies</td>
<td>HD Fowler</td>
<td>(425) 746-8400</td>
</tr>
<tr>
<td>Control Valve Repair and Maintenance</td>
<td>G.C. Systems, Inc.</td>
<td>(253) 939-8322</td>
</tr>
<tr>
<td>Testing Lab (Coliform)</td>
<td>Am Test (Business Hours)</td>
<td>(425) 885-1664</td>
</tr>
<tr>
<td></td>
<td>Am Test (After Hours)</td>
<td>(425) 770-7037</td>
</tr>
<tr>
<td>Washington State Department of Health</td>
<td>NW Regional Office, Bob James</td>
<td>(253) 395-6768</td>
</tr>
<tr>
<td></td>
<td>After-hours (Utility staff use only)</td>
<td>(877) 481-4901</td>
</tr>
<tr>
<td>Washington State</td>
<td>Emergency Management</td>
<td>(800) 258-5900</td>
</tr>
<tr>
<td>King County</td>
<td>Emergency Management</td>
<td>(206) 296-3830</td>
</tr>
<tr>
<td>State Wide One-Call</td>
<td>Utility Locates</td>
<td>811</td>
</tr>
<tr>
<td>North Bend Public Works – Director of Public Works</td>
<td>Mark Rigos</td>
<td>(425) 888-7650</td>
</tr>
<tr>
<td>North Bend Public Works – Water System Supervisor</td>
<td>Kraig Kramer</td>
<td>(425) 888-7655</td>
</tr>
<tr>
<td>City of North Bend After Hours Dispatch</td>
<td>North Bend Public Works</td>
<td>(425) 736-7697</td>
</tr>
<tr>
<td>Consulting Engineer</td>
<td>Gray &amp; Osborne</td>
<td>(206) 284-0860</td>
</tr>
</tbody>
</table>
EMERGENCY PROCEDURES

Although is not possible to anticipate all potential disasters affecting the City’s water system, formulating procedures to manage and remedy common emergencies is appropriate.

In the event an emergency situation should arise, the City has an emergency intertie with the Sallal Water District water system. The City can receive water through this intertie when disruptions to supply cause shortages. Additionally, the City has two sources of supply, providing redundancy and allowing either source to be temporarily removed from service in an emergency.

Water Shortage Emergency/Drought

The City has prepared a Water Shortage Response Plan, which can be found in Appendix M. This plan details the actions the City would take in a water shortage emergency to reduce water usage and inform the public of the water shortage.

Bacteriological Presence Detection Procedure

The most common problem for small systems is the detection of coliform bacteria, though all public systems may occasionally experience detection of bacteriological contaminants. Such detections are typically the result of sample tap contamination or improper bacteriological sample collection procedures. However, bacterial contamination of water systems can result from such events as main breaks or pollution from an isolated source. The persistent detection of coliform bacteria in the supply, particularly *E. coli* or fecal coliform, may require the issuance of a public boil water notice to ensure the health and safety of customers is not compromised. Emergencies such as floods, earthquakes, and other disasters can result in damage to the system infrastructure, which may also warrant a boil water notice as a precautionary measure.

The Revised Total Coliform Rule only requires public notification within 24 hours when two related samples (a routine and one or more of its corresponding repeat samples) test positive for total coliform bacteria — and there is *E. coli* bacteria in one or more of the samples. All customers should be notified through a boil water notice, a sample of which is provided in Appendix M. In the event a bacteriological presence is detected, the City’s procedure is outlined in Table 6-9. WAC 246-290-320 requires utilities to follow specific procedures in the event coliform bacteria are detected in the system, as further discussed in the City’s Coliform Monitoring Plan, which is included in Appendix H.
TABLE 6-9

Water Contamination Response

<table>
<thead>
<tr>
<th>Distribution System Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Perform chemical and free chlorine residual analysis at various locations within the system, including the reservoirs and the system extremities.</td>
</tr>
<tr>
<td>• Disinfect distribution lines as dictated by the nature of the contamination.</td>
</tr>
<tr>
<td>• Routine and repeat sampling to confirm continued presence or absence of contaminant.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reservoir Contamination</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Isolate reservoir from system.</td>
</tr>
<tr>
<td>• Resample to confirm contamination.</td>
</tr>
<tr>
<td>• Check distribution system for presence of contamination.</td>
</tr>
<tr>
<td>• Inspect vent screens, hatches, and piping to identify source of contamination.</td>
</tr>
<tr>
<td>• If reservoir water is contaminated and therefore considered unsuitable for consumption, drain and clean reservoir.</td>
</tr>
<tr>
<td>• Consider disinfecting reservoir if bacteriological standards are exceeded. Follow AWWA Standards. A 50-ppm chlorine solution in the reservoir can be obtained by adding 97 gallons of 5.25-percent chlorine bleach per 100,000 gallons of storage.</td>
</tr>
</tbody>
</table>

VOC and SOC Detection Procedures

Volatile organic chemical (VOC) and synthetic organic chemical (SOC) samples are routinely taken from supply sources. VOC and SOC tests include numerous different chemicals. VOCs and SOCs are generally not detected in supply sources. Therefore, any detection of VOCs or SOCs may warrant follow-up investigation even if it does not exceed an MCL. If routine VOC or SOC samples detect one or more chemicals, additional samples may be taken specifically for that chemical or possibly for a surrogate such as Total Organic Carbon if it reduces follow-up chemical testing costs. Follow-up procedures in the event of VOC or SOC detection are specified in WAC 246-290-320 (6). Follow-up actions may vary depending upon the specific chemical detected and the level at which it is detected. The DOH area representative should be contacted to coordinate follow-up sampling and appropriate responses.

Inorganic Chemical Detection Procedures

Inorganic chemical/physical characteristics (IOC) samples are routinely collected from sources. IOC tests include numerous different chemicals. If routine IOC samples detect one or more samples in excess of an MCL, additional samples may be collected specifically for that sample if it reduces follow-up chemical testing costs. Follow-up procedures in the event of an inorganic chemical/physical characteristics MCL violation are specified in WAC 246-290-320 (3). Follow-up actions may vary depending on the specific chemical detected and the level at which it is detected. The DOH area
representative should be contacted to coordinate follow-up sampling and appropriate responses. In the case of a lead and/or copper action level violation, follow-up procedures are specified in WAC 246-290-320 (4).

**Power Failure**

Various types of weather can cause a loss of power, including wind, lightning, freezing rain, or freezing snowstorm. Additionally, power can be lost through traffic accidents. The City’s Centennial Well, 710 Booster Station, and 780 Booster Stations have backup generators on site, and the Mount Si Springs source is capable of connecting to a portable backup generator. The combined storage of 3.2 MG will provide average day demand to the City for 2.7 days in 2020, 1.9 days in 2030, and 1.4 days in 2040 while also ensuring required fire flow to all zones. City personnel will first check reservoir levels visually on a reader board at the tanks. Puget Sound Energy will be contacted at 1-888-225-5773 to determine the length of the power outage. Then customers will be notified of the emergency. Water conservation will be requested through social media, radio, television, newspaper, and/or police loudspeaker.

**Water Main Break**

The City has a Water Main Break Response Plan, which can be found in Appendix M. The plan outlines contact information, customer outreach, and protocols.

**Chlorine Gas Leak**

The city uses chlorine gas at the Mount Si Springs for disinfection. In the event of a chlorine gas leak, stopping the gas flow is critical to preventing the concentration from reaching toxic and corrosive levels. The City’s chlorine gas facilities at Mount Si Springs are equipped with chlorine gas monitors which continuously measure the chlorine concentration in the chlorine rooms. Upon detection of a leak, the City’s SCADA system would issue an alarm and operators would manually close valves to shut off gas supply.

If the gas flow from the leak is not immediately shut down, the evacuation of people who may be inside the chlorination buildings is critical. In the case of a life-threatening situation, the Fire Department is notified (Eastside Fire & Rescue) and emergency vehicles are dispatched to the location. Self-contained breathing apparatuses (SCBAs) are provided for personnel protection when entering the leak area. An eyewash is also provided on-site outside of the chlorine rooms for immediate personnel protection. After the building is cleared and the chlorine gas concentration has reached acceptable levels, trained Water Division personnel, along with the Fire Department, are sent to the site to repair the leak.

The City’s Chlorine Storage and Use Procedures Manual, which includes emergency response procedures, is included in Appendix N.
Severe Earthquake

A severe earthquake can result in transmission line breaks, distribution system breaks and structural damage to the pump station, treatment facility, wells, reservoirs and vaults which house critical valving and meters.

Table 6-10 provides procedures to follow in the event of a severe earthquake.

**TABLE 6-10**

**Severe Earthquake Response**

<table>
<thead>
<tr>
<th>System Component</th>
<th>Proposed Actions</th>
</tr>
</thead>
</table>
| Reservoirs       | • Observe structures for visual signs of structural damage.  
                  | • If structural damage is apparent, drain reservoir and inspect the interior of the tank  
                  | • Check storm drainage system for significant flows, indicating possible reservoir leakage  
                  | • If leakage is suspected, isolate one reservoir at a time and monitor level for at least 24 hours |
| Distribution Lines | • Close valves to isolate breaks  
                          | • Check reservoir level  
                          | • Notify customers of emergency and request water conservation |
| Transmission Lines | • Shut down source pumps  
                          | • Isolate break and check the base system section maps for valve locations  
                          | • Repair break  
                          | • Disinfect isolated section |
| Booster Stations, Wells, Treatment Facilities & Meters | • Inspect for joint leakage and leaking chemical storage tanks  
                                                          | • Inspect wells for operation  
                                                          | • Inspect well seals to prevent contamination from entering the wellhead  
                                                          | • Inspect for alignment of pump column and casing  
                                                          | • Inspect screen integrity |
| Supply Facilities | • Inspect for leakage or other structural damage |

Major Fire

In the event of a major fire within the service area, low-pressure conditions could result in the extremities of the distribution system due to fire suppression demand. Proper functioning of booster pump and PRV stations should offset this effect. In the event of fire or drastically low static pressures, valves should be checked, followed by the system
setpoints of pumps, reservoirs and PRV stations. The East Pierce Fire and Rescue is the first responder to a fire in the City.

**Cold Weather Conditions**

Extended cold weather conditions could cause freezing problems at shallow service connections, valve vaults without an insulating earth cover, reservoirs, supply and treatment facilities. Frozen lines can be wrapped with heat tape or space heaters can be used.

**Distribution System Low/High Pressure**

The water surface elevation in the storage reservoirs and booster station settings control distribution system pressures. Under normal conditions, the reservoir overflow levels set the maximum pressure within the 710 and 594 pressure zones. However, excess pressure may accumulate in these pressure zones if the distribution and transmission system is isolated from a reservoir. Pressure within the 780 pressure zone is contingent upon the settings of the two booster stations that service it, namely the 780 booster stations. The following table proposes investigative and corrective actions for both low and high pressure conditions.

**TABLE 6-11**

**Distribution System High/Low Pressure Response**

<table>
<thead>
<tr>
<th>System Component</th>
<th>Proposed Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Pressure</strong></td>
<td><strong>Low Pressure</strong></td>
</tr>
<tr>
<td>Reservoirs</td>
<td>• Check reservoir levels</td>
</tr>
<tr>
<td></td>
<td>• Manually discharge valves</td>
</tr>
<tr>
<td>Distribution and Transmission</td>
<td>• Excess pressure may cause damage to some older pipes. Open hydrants at various</td>
</tr>
<tr>
<td>Lines</td>
<td>locations to reduce system pressure</td>
</tr>
<tr>
<td>Booster &amp; PRV Stations and Well</td>
<td>• Check pressure upstream and downstream at each facility</td>
</tr>
<tr>
<td>Pumps</td>
<td>• Reset PRVs</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CROSS-CONNECTION CONTROL PROGRAM

The City’s Cross-Connection Control Program was enacted through Ordinance 391 in 1974. The specifics of this ordinance are set forth in the North Bend Municipal Code Chapter 13.16. A copy of the ordinance, the most recent municipal code, and the City’s Cross-Connection Control manual is located in Appendix O.

CROSS-CONNECTION DEVICE INVENTORY AND TESTING

The City’s system contains approximately 586 cross-connection control devices as of September 2019.

It is the responsibility of the customer to ensure proper testing of the devices on an annual basis. The City must test its own cross-connection control devices annually as well. Customers are given up to three notices by the water department to comply with assembly testing. If compliance is not reached, the water service supplying the assembly in question is turn off. In recent years this City has maintained complete compliance.

NEW CROSS-CONNECTION DEVICE

New service applications are evaluated by the cross-connection control specialist to determine what type of backflow prevention device is needed, if any. New cross connection devices are catalogued and checked initially by City staff. Backflow prevention devices are required on all new cross connections. A condition for new services will be an evaluation by the cross-connection control certified City staff to determine what type of backflow device is needed.

CROSS-CONNECTION CONTROL PROGRAM RECORD KEEPING

A critical program element of a cross-connection control program is the maintenance of accurate records. The City maintains a computerized database of backflow prevention devices. Information kept includes address of device, type, size, date of last test and date of next test. Annual testing results for the devices are recorded and annual reports summary reports are prepared and sent to DOH. Kraig Kramer is the City’s Cross-Connection Control Program manager.

WELLHEAD PROTECTION PLAN

The City’s Wellhead Protection Plan is being updated in the spring of 2020.
CUSTOMER COMPLAINT PROGRAM

The City's water customers are encouraged to deliver their complaints and water infrastructure concerns by calling City Hall. If action or investigation is required to resolve the issue, an administrative official at City Hall shall write a Public Works Department work order. One of more Public Works employee(s) is then dispatched and the issue investigated and resolved. Upon resolution, a Public Works summary and response is generated and sent to the City's Billing Department for filing and record keeping.

RECORD KEEPING AND REPORTING

Record keeping and reporting requirements for public water systems are given in WAC 246-290-480. All records concerning water system operation as well as all DOH water main distribution system project construction completions reports, are located at the City’s Public Works shop. Billing records and other official City records are retained at the City Clerk’s Office.

OPERATION AND MAINTENANCE DEFICIENCIES

The City needs to finalize its Water Shortage Plan. As discussed in Chapter 3, this plan is crucial to the effort of minimizing peak seasonal demands during prolonged dry periods. The plan will ultimately help control and lowering the mitigation requirements and address mitigation capacity concerns.

Additionally, the City’s SCADA system will undergo a series of upgrades over the next 5 years. These upgrades help will ensure proper water system operations and monitoring continues and are detailed in Chapter 7.
CHAPTER 7

CAPITAL IMPROVEMENT PLAN

INTRODUCTION

This Chapter presents the proposed schedule for the City’s 10-year Capital Improvement Plan (CIP) in accordance with the requirements of WAC 246-290. Water system capital improvements are scheduled and prioritized on the basis of water quality concerns, growth, regulatory requirements, component reliability, system benefit, and financial priority. For the proposed projects identified in this Chapter, individual project descriptions, and preliminary project cost estimates for the 10-year CIP are provided in Appendix Q. Additional projects for the 20-year planning period have also been identified. When the Water System Plan is updated after 10 years, the projects presented for the 20-year planning period should be reevaluated and scheduled for the subsequent 10-year planning period, as necessary. A water system base map indicating proposed improvement projects is included as Figure 7-1.

In the future, other projects may arise that are not identified as part of the City’s CIP. Such projects may be deemed necessary for ensuring water quality, preserving emergency water supply, accommodating transportation improvements proposed by other agencies, or addressing unforeseen problems within the City’s water system. Due to budgetary constraints, the completion of these projects may require that the proposed completion date for projects in the CIP be rescheduled. The City retains the authority to reschedule proposed projects and to expand or reduce the scope of proposed projects, as best determined by the City Council. As the proposed completion date for the project approaches, each capital improvement project should be re-evaluated to consider the most recent planning efforts.

CAPITAL IMPROVEMENT PLAN

Table 7-1 summarizes the proposed capital improvement projects for the 10-year and 20-year planning periods. Project locations can be seen in Figure 7-1. All costs discussed in this Chapter are in February 2020 dollars, which corresponds to an Engineering News Record (ENR) Construction Cost Index (CCI) of 12,117 for the Seattle metropolitan area. Each project is discussed further in the following sections. Detailed cost estimates for the capital improvement projects are included in Appendix S. All project costs contain a 20 percent contingency and a 30 percent engineering and administration cost.
STORAGE IMPROVEMENTS

ST-1: I-90 Reservoir Recoating and Improvements

This project consists of interior and exterior recoating of the 0.5 MG I-90 Reservoir as well as seismic and security improvements. Security improvements include ladder access security, fencing improvements, and the installation of intrusion switches. The reservoir will also be retrofitted with a seismic valve in order to improve resiliency in the event of a seismic event. **Estimated Project Cost:** $831,000

ST-2: Forster Woods Reservoir Recoating and Improvements

This project consists of interior and exterior recoating of the 0.75 MG Forster Wood Reservoir as well as seismic and security improvements. Security improvements include restricting stair access and incorporating new intrusion switches. The reservoir will also be retrofitted with a seismic valve in order to improve resiliency in the event of a seismic event. **Estimated Project Cost:** $979,000

ST-3: New Reservoir at I-90 Site

A new 0.5 MG steel reservoir shall be constructed at the I-90 Reservoir site. The storage analysis summarized in Table 3-16 shows that the City will have adequate storage capacity through 2040 through nesting; however, the City wishes to ensure extra redundancy and flexibility by constructing an additional 500,000-gallon reservoir. The existing I-90 reservoir site has space and existing site piping installed in anticipation of expansion. This project will increase total storage capacity by 0.5 MG and would allow for greater flexibility when the I-90 or Forster Woods Reservoirs undergo maintenance or emergency repairs, if needed. **Estimated Project Cost:** $2,422,000

SOURCE IMPROVEMENTS

SO-1: Centennial Well Variable Frequency Drive

This project consists of equipping the existing Centennial Well with a variable frequency drive (VFD). The VFD will allow for greater pump control as well as improved efficiency. **Estimated Project Cost:** $85,000

SO-2: Centennial Well Pump Replacement

The Centennial Well assembly will likely need to be replaced at some point during the 20-year planning period. This could be as soon as following the Centennial well inspection (depending on inspection results) or past the 10-year planning horizon. This project would ensure source availability. **Estimated Project Cost:** $229,000
SO-3: Mount Si Springs Air Gap Study (2021)

The Washington Department of Health has documented potential cross connection contamination concerns at the inlet of Mount Si Springs Pond in previous Sanitary Surveys. This project would fund a study and predesign report that would assess alternative solutions to eliminate this cross-connection and conclude with a recommended alternative. **Estimated Project Cost: $30,000**

SO-4: Mount Si Air Gap Project (2023)

This project would implement the preferred solution determined form the air gap study detailed in SO-4. **Estimated Project Cost: $500,000**

MITIGATION IMPROVEMENTS

MT-1: Golf Course Mitigation Well Improvements

In 2018 the City purchased the Cascade Golf Course, well, and irrigation water right with the intention of using it as a mitigation source. Presently, a well pump discharges to a pond, which provided equalizing storage for the irrigation system. In order to convert this system to a mitigation source the irrigation pump must be replaced and the PLC must be integrated with the City’s SCADA system. In addition, roughly 1400 feet of 6-inch HDPE pipe must be installed to connect the pond with the South Fork of the Snoqualmie River. The Department of Ecology has indicated the presence of an abandoned well on the the Cascade Golf Course property. There is no documentation that the well was properly decommission as required by WAC 173-160-381. Investigation and proper decommissioning of this well is also part of the well improvements project. **Estimated Project Cost: $371,000**

MT-2: Hobo Springs Improvement

Hobo Springs is the City’s primary source of mitigation water. The intake and transmission main convey water from Hobo Springs to Boxley Creek (a Snoqualmie River tributary). The intake and transmission system were constructed in 2008. Excess water flows over the weir and could be captured with the construction of an additional caching basin. This project would increase the total mitigation water which could be conveyed from Hobo Springs. **Estimated Project Cost: $302,000**

MT-3: Mitigation Well

The mitigation well located off Southeast Tanner Road was drilled but never equipped. This project would equip the well and add the piping necessary to discharge mitigation flow to the Middle Fork of the Snoqualmie River. This project is contingent on the City being awarded a previously applied for water right and would ultimately increase the City’s mitigation capabilities. **Estimated Project Cost: $1,027,000**
MT-4: Sallal Mitigation Intertie

The majority of the infrastructure for the Sallal intertie was constructed in 2008. What remains are SCADA and telemetry upgrades, and constructing approximately 400 feet of 12-inch DI main to connect the intertie to Sallal’s Well 2. This project would increase the City’s access to mitigation water and is contingent on the City and Sallal reaching a wholesale water agreement. **Estimated Project Cost: $312,000**

MT-5: Mitigation Reservoir

The City is completing a feasibility study, analyzing potential sites for a 10 MG mitigation reservoir. This reservoir would be filled using diverted Snoqualmie River water during periods of high in-stream flow and water would then be released when mitigation water is required. **Estimated Project Cost: $12,000,000**

**DISTRIBUTION IMPROVEMENTS**

Sections of the City’s distribution system need to be replaced to ensure water supply reliability. These projects fall under two categories: (1) fire flow improvements and (2) replacement of aging water mains. The cost of projects with similar distances of pipe may vary due to the number of service connections and connections to the existing distribution system that are required.

D-1: Main Avenue North and West 4th Street

Replacement of 100 linear feet of 6-inch AC with 8-inch DI main at the intersection of Main Avenue North and West 4th Street. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost: $83,000**

D-2: West 2nd Street

Replacement of 400 lineal feet of 6-inch AC with 10-inch DI main on West Second Street between Main Avenue North and Bendigo Boulevard North. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost: $238,000**

D-3: West North Bend Way

Replacement of 400 linear feet of 6-inch AC with 12-inch DI main on West North Bend Way between Sydney Avenue North and Bendigo Boulevard North. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost: $268,000**
D-4: East North Bend Way and Thrasher Avenue NE

Replacement of 800 linear feet of 6-inch AC with 8-inch DI main on the north side of East North Bend Way between the Torguson Park entrance and Thrasher Avenue NE. This project will improve fire flow availability (see Table 4-10).  **Estimated Project Cost:** $332,000

D-5: Riverside Drive

Replacement of 2,000 linear feet of 6-inch and 4-inch AC with 8-inch DI main on Riverside Drive SE and SE Alder Drive. This project will improve fire flow availability (see Table 4-10).  **Estimated Project Cost:** $828,000

D-6: End of East 2nd Street

Replacement of 200 linear feet of 8-inch DI main with 16-inch DI main at the end of East 2nd Street at East 2nd Street and Downing Avenue North. This project will improve fire flow availability (see Table 4-10).  **Estimated Project Cost:** $204,000

D-7: SE 123rd Street and 415th Avenue

Replacement of approximately 750 linear feet of AC with 8-inch DI water main.  **Estimated Project Cost:** $359,000

D-8: SE 136th Street

Replacement of 300 linear feet of existing 6-inch AC water main with 8-inch DI water main on Southeast 136th from 422nd Avenue Southeast to 423rd Avenue Southeast. This project will improve fire flow availability.  **Estimated Project Cost:** $146,000

D-9: End of SE 108th Street

Replacement of 750 linear feet of 6-inch AC with 8-inch DI main on Southeast 108th Street from 428th Avenue SE to the dead end. This project will improve fire flow availability (see Table 4-10).  **Estimated Project Cost:** $300,000

D-10: Borst Avenue NE and NE 9th Street

Replacement of 350 linear feet of 4-inch AC with 8-inch DI main on Borst Avenue NE between NE 9th Street and NE 8th Street. This project will improve fire flow availability (see Table 4-10).  **Estimated Project Cost:** $176,000
D-11: Borst Avenue NE and NE 6th Street

Replacement of 350 linear feet of 6-inch AC with 8-inch DI main on Borst Avenue NE from NE 6th Street to the street’s dead end. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost: $169,000**

D-12: Thrasher Avenue NE

Replacement of 200 linear feet of 6-inch main with 8-inch DI main where the main branches off Thrasher Avenue NE between East North Bend Way and NE 2nd Street behind the Ranger Station. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost: $112,000**

D-13: Picket Avenue NE

Replacement of existing 6-inch AC water main with 600 linear feet of 8-inch DI main from NE 5th Street to the end of Picket Avenue NE. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost: $290,000.**

D-14: Taylor Place NE, Boxley Place NE, and NE 5th Street

Replacement of existing 6-inch AC water main with 600 linear feet of 8-inch DI main on Taylor Place NE, NE 5th Street and Boxley Place NE. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost: $291,000**

D-15: Merritt Avenue NE

Extension and replacement of existing 4-inch AC water main with 500 linear feet of 8-inch DI main on Merritt Avenue NE, south of NE 6th Street. This project will improve fire flow availability. **Estimated Project Cost: $229,000**

D-16: 436th Avenue NE

Replacement of existing 6-inch water main with 1,400 linear feet of 12-inch DI main on 436th Avenue NE from SE 92nd Street to 436th Place SE. This project will improve fire flow availability. **Estimated Project Cost: $770,000**

D-17: Mount Si Business Park Fire Flow Improvements

This project should only occur after the completion of Developer Extensions 5, 6, and 7 and include the replacement of 1,750 linear feet of 12-inch main with 16-inch DI main on North Bend Boulevard. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost: $1,132,000**
D-18: Middle Fork River Crossing

Replacement of existing 12-inch CI water main with 100 linear feet of 16-inch DI and 500 LF of 16-inch HDPE. The existing water main was installed under the river, may be seismically deficient, and is nearing the end of its useful life. The crossing is also suspected to be a contributor to the City’s DSL. The new water main will be installed via horizontal directional drilling. Estimated Project Cost: $558,000

D-19: South Fork River Crossing

Replacement of existing 12-inch DI water main with 100 linear feet of 12-inch DI and 600 LF of 16-inch HDPE. The existing water main was installed under the river, may be seismically deficient, and is nearing the end of its useful life. The crossing is also suspected to be a contributor to the City’s DSL. The new water main will be installed via horizontal directional drilling. Estimated Project Cost: $533,000

D-20: 428th Avenue SE to River Crossing

Replacement of existing 12-inch AC water main with 5,000 linear feet of 16-inch DI main along 428th Avenue SE from NE 12th street to the Middle Fork river crossing. This project will replace aging AC water mains. Estimated Project Cost: $3,225,000

D-21: 428th Avenue SE and SE 92nd Street

Replacement of existing 12-inch AC water main with 2,750 linear feet of 16-inch DI main on 428th Avenue SE north of the Middle Fork river crossing and along SE 92nd Street. This project will replace aging AC water mains. Estimated Project Cost: $1,730,000.

DEVELOPER EXTENSIONS

The following improvements will largely be financed by private developers, as future areas of growth are platted and developed. The projects listed below identify the transmission main size and configuration required to serve the proposed areas of development. Actual alignments may vary depending on the dedication of future rights-of-way. Local distribution system piping will be provided by the developer, as necessary. The improvements listed represent the minimum modifications to the transmission system. Water mains should be looped as indicated on the capital improvements map. If lines are not immediately looped, water lines may be oversized in order to meet the required fire flow demand.
DE-1: 420th Avenue SE and SE 102nd Street

This transmission main will be constructed on 420th Avenue SE north of NE 12th Street and continue on SE 102nd Street until it connects with 428th Avenue SE. This project will consist of approximately 4,000 linear feet of 12-inch DI main. **Estimated Project Cost:** $2,128,000

DE-2: SE North Bend Way

This transmission main will be constructed from the City’s Centennial Well down East North Bend Way to 436th Avenue SE. This project will consist of approximately 3,200 linear feet of 16-inch DI main. **Estimated Project Cost:** $2,014,000

DE-3: 417th Avenue SE

This transmission main will be constructed on 417th Avenue SE. It is the first half of the project to loop a transmission line through the Circle River area. The project will consist of the construction of approximately 2,500 linear feet of 12-inch DI main. **Estimated Project Cost:** $1,336,000

DE-4: SE 101st Street

This transmission main will be constructed on SE 101st Street. It is the second half of the project to loop a transmission line through the Circle River area. The project will consist of the construction of approximately 1,700 linear feet of 12-inch DI main. **Estimated Project Cost:** $917,000

DE-5: NW 14th Street

This transmission main will be constructed on NW 14th Street. The project will consist of the construction of approximately 1,500 linear feet of 12-inch DI main. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost:** $814,000

DE-6: NW 8th Street

This transmission main will be constructed on NW 8th Street and will connect to the existing 20-inch main north of the Nintendo campus. The project will consist of the construction of approximately 3,000 linear feet of 16-inch main. This project will improve fire flow availability (see Table 4-10). **Estimated Project Cost:** $1,899,000
DE-7: NW 8th Street to NW 14th Street

This transmission main will be constructed to loop the main extensions on NW 8th Street and NW 14th Street. The project will consist of the construction of approximately 2,000 linear feet of 16-inch main. This project will improve fire flow availability (see Table 4-10). Estimated Project Cost: $1,264,000

DE-8: NE 10th Street from 428th Avenue to Borst Avenue NE

Construction of 2,000 linear feet of 12-inch DI main on NE 10th from 428th Avenue to Borst Avenue NE and from Ballarat Avenue to the east. Estimated Project Cost: $1,264,000

DE-9: SE 87th Street, 436th Place SE, and 438th Place SE Loop

This transmission main will comprise a 1,500 linear foot loop extension of 12-inch DI main on SE 87th Street, 436th Place SE, and 438th Place SE. Estimated Project Cost: $226,000

MISCELLANEOUS IMPROVEMENTS

MSC-1: Meter Replacement Program

In 2019 the City Council approved funding for a 15-year customer meter replacement program. All meters will be replaced by 2033. Estimated Project Cost: $525,000, $35,000 annually (2020-2033)

MSC-2: Source and Storage SCADA and PLC Upgrades

The PLCs and SCADA system at the Centennial Well, Mount Si Springs, I-90 Reservoir, Nintendo Reservoir, and Forster Woods Reservoir all need to be upgraded to be Ethernet compatible. These water system components operated in tandem and should be replaced at the same time. Estimated Project Cost: $178,000

MSC-3: Booster Pump Station SCADA and PLC Upgrades

The PLCs and SCADA system at the 710 and 780 Booster Pump Stations all need to be upgraded to be Ethernet compatible. These system components can be upgraded after the source and storage upgrades. Estimated Project Cost: $51,000

ASBESTOS CONCRETE REPLACEMENT

The City has inventoried all asbestos concrete (AC) water mains that will not be replaced in the distribution system improvements discussed above. All remaining AC mains can be seen in Figure 7-2. Table 7-1 provides a quantitative summary as well.
TABLE 7-1

Asbestos Cement Water Main Inventory

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Total Length</th>
<th>Percentage of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>7,057</td>
<td>16.1%</td>
</tr>
<tr>
<td>6</td>
<td>24,059</td>
<td>54.9%</td>
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<tr>
<td>8</td>
<td>5,012</td>
<td>11.4%</td>
</tr>
<tr>
<td>10</td>
<td>7,656</td>
<td>17.5%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>43,784</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Beginning in 2028, the City will dedicate $600,000 every other year towards replacing approximately 1,400 linear feet of AC mains. AC main replacement projects will be coordinated annually with scheduled overlay, sewer, and water projects in order to maximize the beneficial use of these funds.

Replacing all the City’s AC mains that are not part of the previously described distribution system improvements would cost approximately $19,000,000. The City will be on pace to replace 10 percent of these pipes by 2030 and 26 percent by 2040.

SUMMARY OF RECOMMENDED IMPROVEMENTS

A prioritized schedule and cost summary for the recommended 10-year capital improvements are shown in Table 7-2. All costs shown are in 2020 dollars. The City may adjust and reschedule its capital improvement projects to accommodate unforeseen changes to projects and finances.
<table>
<thead>
<tr>
<th>Project Number</th>
<th>Project Description</th>
<th>Year to be Completed</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS-1</td>
<td>Meter Replacement Program</td>
<td>2019-2033</td>
<td>$35,000/year</td>
</tr>
<tr>
<td>AC-1</td>
<td>AC Main Replacement</td>
<td>2028 &amp; 2030</td>
<td>$600,000/year</td>
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<tr>
<td>MT-1</td>
<td>Golf Course Well Improvements</td>
<td>2020</td>
<td>$371,000</td>
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<td>SO-1</td>
<td>Centennial Well Variable Frequency Drive</td>
<td>2021</td>
<td>$85,000</td>
</tr>
<tr>
<td>SO-3</td>
<td>Mt Si Spring Air Gap Study</td>
<td>2021</td>
<td>$30,000</td>
</tr>
<tr>
<td>MT-2</td>
<td>Hobo Springs Improvement</td>
<td>2021</td>
<td>$302,000</td>
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<tr>
<td>D-13</td>
<td>Picket Avenue Northeast</td>
<td>2021</td>
<td>$290,000</td>
</tr>
<tr>
<td>MS-2</td>
<td>Source and Storage SCADA and PLC Upgrades</td>
<td>2022</td>
<td>$178,000</td>
</tr>
<tr>
<td>SO-4</td>
<td>Mt Si Spring Air Gap Project</td>
<td>2023</td>
<td>$500,000</td>
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<tr>
<td>D-18</td>
<td>Middle Fork River Crossing</td>
<td>2023</td>
<td>$442,000</td>
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<tr>
<td>SO-2</td>
<td>Centennial Well Pump Replacement</td>
<td>2024</td>
<td>$229,000</td>
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<td>MT-4</td>
<td>Sallal Mitigation Intertie</td>
<td>2025</td>
<td>$312,000</td>
</tr>
<tr>
<td>MS-3</td>
<td>Booster Pump Station SCADA and PLC Upgrades</td>
<td>2025</td>
<td>$51,000</td>
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<td>D-21</td>
<td>Avenue Southeast and Southeast 92nd Street</td>
<td>2025 &amp; 2026</td>
<td>$1,483,000</td>
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<td>D-19</td>
<td>South Fork River Crossing</td>
<td>2026</td>
<td>$558,000</td>
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<td>D-1</td>
<td>Main Avenue North and West 4th Avenue</td>
<td>2027</td>
<td>$83,000</td>
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<td>End of East 2nd Street</td>
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<td>ST-1</td>
<td>0.5 MG I-90 Reservoir Recoating and Improvements</td>
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<td>D-3</td>
<td>Main Avenue North and Sydney Avenue North</td>
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<td>0.75 MG Forster Woods Reservoir Recoating and Improvements</td>
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<td>D-2</td>
<td>North Bend Way and West 2nd Avenue</td>
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<td>$238,000</td>
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<td>D-8</td>
<td>SE 136th Street and 424th Avenue SE</td>
<td>2030</td>
<td>$146,000</td>
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(1) All cost estimates are shown in 2020 dollars. ENR CCI= 12,117 (February 2020).
CHAPTER 8
FINANCING PROGRAM

INTRODUCTION

This section outlines the City’s financial plan for implementing the recommended capital improvement plan, paying operation and maintenance (O&M) expenses, and meeting debt service. This section also reviews the City’s past and present financial status, available revenue sources, allocation of revenue sources, as well as the fiscal impact of the recommended capital improvements and rates.

WATER RATES

The City’s water service rates were established by Ordinance No. 1707 effective January 1, 2020. These rates are summarized in Table 8-1. The rates include a base charge and a use charge. The base rate is dependent on the type and location of the customer. Use charges are based on an inclined block rate model for single-family and irrigation customers.

<table>
<thead>
<tr>
<th>Table 8-1</th>
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<tr>
<td>2019 Water Service Rates</td>
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<table>
<thead>
<tr>
<th>Customer Type</th>
<th>5/8&quot; Meter</th>
<th>3/4&quot; Meter</th>
<th>1&quot; Meter</th>
<th>1.5&quot; Meter</th>
<th>2&quot; Meter</th>
<th>0-20 m³</th>
<th>21-30 m³</th>
<th>30+ m³</th>
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</thead>
<tbody>
<tr>
<td>Inside City Customers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-Family Residential</td>
<td>$18.91</td>
<td>$26.87</td>
<td>$42.77</td>
<td>$82.49</td>
<td>$130.16</td>
<td>$1.80</td>
<td>$2.37</td>
<td>$2.89</td>
</tr>
<tr>
<td>Senior/Disabled(1)</td>
<td>$9.47</td>
<td>$13.44</td>
<td>$21.35</td>
<td>$41.27</td>
<td>$65.11</td>
<td>$0.89</td>
<td>$1.19</td>
<td>$1.45</td>
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<tr>
<td>Multi-Family Residential</td>
<td>$14.68</td>
<td>$20.13</td>
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<tr>
<td>Commercial</td>
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<td>$40.40</td>
<td>$65.31</td>
<td>$127.53</td>
<td>$202.23</td>
<td>$2.01</td>
<td></td>
<td></td>
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<tr>
<td>Irrigation</td>
<td>$4.46</td>
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<td>Outside City Customers</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-Family Residential</td>
<td>$31.24</td>
<td>$44.36</td>
<td>$70.58</td>
<td>$136.13</td>
<td>$214.79</td>
<td>$2.98</td>
<td>$3.93</td>
<td>$4.81</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>$24.26</td>
<td>$33.21</td>
<td>$51.06</td>
<td>$95.68</td>
<td>$149.29</td>
<td></td>
<td>$4.06</td>
<td></td>
</tr>
<tr>
<td>Commercial</td>
<td>$46.11</td>
<td>$66.66</td>
<td>$107.72</td>
<td>$210.45</td>
<td>$333.70</td>
<td></td>
<td>$3.28</td>
<td></td>
</tr>
</tbody>
</table>

(1) Indicates low income/senior/disability rates, determined by the US Department of Housing and Urban Development.
CONNECTION FEES

City water utilities are authorized by RCW 35.92.025 to charge connection fees based on an equitable share of existing and planned water system costs. The present City of North Bend connection fees were established by Ordinance No. 1707 effective January 1, 2020. The current City connection fees include a meter installation fee plus water system development charges based on meter size. The current connection fees schedule is illustrated in Table 8-2 below.

TABLE 8-2

2019 Connection Fees

<table>
<thead>
<tr>
<th>Meter Size</th>
<th>ERUs(1)</th>
<th>General Facility Charge(2)</th>
<th>Meter Installation Fee</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/8&quot; or 3/4&quot;</td>
<td>1</td>
<td>$7,960.00</td>
<td>$2,450.00</td>
<td>$10,410.00</td>
</tr>
<tr>
<td>1&quot;</td>
<td>2.5</td>
<td>$19,830.00</td>
<td>$2,450.00</td>
<td>$22,280.00</td>
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<tr>
<td>1-1/2&quot;</td>
<td>5</td>
<td>$39,610.00</td>
<td>$3,000.00</td>
<td>$39,910.00</td>
</tr>
<tr>
<td>2&quot;</td>
<td>8</td>
<td>$63,370.00</td>
<td>$3,300.00</td>
<td>$66,670.00</td>
</tr>
</tbody>
</table>

(1) Based on meter size.
(2) The GFC charge is automatically increased each year on January 1st by the percentage reflected in the Seattle ENR Construction Cost Index (CCI).

FINANCIAL STATUS OF EXISTING UTILITY

The City maintains separate water and sewer utilities. Table 8-3 shows historical water utility revenues and expenditures for 2013 through 2019. Expenditure and revenue totals include money from the water fund and water capital improvement fund. In each year, water utility revenues have exceeded expenditures.
TABLE 8-3
Historical Water Utility Revenues and Expenses

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Starting Balance</strong></td>
<td>$636,123(1)</td>
<td>$1,429,140</td>
<td>$1,468,421</td>
<td>$2,308,697</td>
<td>$2,799,873</td>
<td>$3,369,338</td>
</tr>
<tr>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Sales</td>
<td>$1,514,605</td>
<td>$1,612,631</td>
<td>$1,818,563</td>
<td>$1,822,435</td>
<td>$2,043,463</td>
<td>$1,997,744</td>
</tr>
<tr>
<td>Connection Fees</td>
<td>$616,286</td>
<td>$183,302</td>
<td>$90,145</td>
<td>$205,662</td>
<td>$814,020</td>
<td>$1,151,599</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>$756</td>
<td>$2,015</td>
<td>$12,316</td>
<td>$2,667</td>
<td>$3,479</td>
<td>$80</td>
</tr>
<tr>
<td>Interest Income</td>
<td>$2,032</td>
<td>$3,295</td>
<td>$5,523</td>
<td>$11,724</td>
<td>$26,168</td>
<td>$51,886</td>
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<tr>
<td>Loan Proceeds</td>
<td>$0</td>
<td>$529,266</td>
<td>$602,291</td>
<td>$0</td>
<td>$0</td>
<td>$3,145</td>
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<tr>
<td>Grant Proceeds</td>
<td>$38</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
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<tr>
<td>Transfers</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td>$2,133,717</td>
<td>$2,330,510</td>
<td>$2,528,839</td>
<td>$2,042,489</td>
<td>$2,887,130</td>
<td>$3,204,453</td>
</tr>
<tr>
<td><strong>Expenditures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wages and Benefits</td>
<td>$504,820</td>
<td>$510,535</td>
<td>$622,151</td>
<td>$705,757</td>
<td>$832,318</td>
<td>$929,920</td>
</tr>
<tr>
<td>Utilities</td>
<td>$73,184</td>
<td>$75,364</td>
<td>$69,089</td>
<td>$63,212</td>
<td>$171,045</td>
<td>$179,213</td>
</tr>
<tr>
<td>Maintenance/Repairs</td>
<td>$8,751</td>
<td>$13,671</td>
<td>$27,270</td>
<td>$54,883</td>
<td>$64,947</td>
<td>$90,573</td>
</tr>
<tr>
<td>Administration</td>
<td>$50,067</td>
<td>$92,850</td>
<td>$103,482</td>
<td>$62,424</td>
<td>$61,053</td>
<td>$65,722</td>
</tr>
<tr>
<td>Equipment</td>
<td>$150,920</td>
<td>$169,066</td>
<td>$162,383</td>
<td>$132,560</td>
<td>$150,352</td>
<td>$155,182</td>
</tr>
<tr>
<td>Mitigation Water</td>
<td>$57,208</td>
<td>$65,881</td>
<td>$64,547</td>
<td>$71,867</td>
<td>$90,360</td>
<td>$327,672</td>
</tr>
<tr>
<td>Tax</td>
<td>$74,502</td>
<td>$76,160</td>
<td>$81,770</td>
<td>$85,851</td>
<td>$105,258</td>
<td>$112,286</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>$15,351</td>
<td>$19,977</td>
<td>$12,857</td>
<td>$13,816</td>
<td>$85,556</td>
<td>$151,602</td>
</tr>
<tr>
<td><strong>Operation Expenditures</strong></td>
<td>$934,802</td>
<td>$1,023,504</td>
<td>$1,143,549</td>
<td>$1,190,187</td>
<td>$1,560,889</td>
<td>$2,012,170</td>
</tr>
<tr>
<td>Capital Projects</td>
<td>$121,373</td>
<td>$978,544</td>
<td>$208,373</td>
<td>$94,077</td>
<td>$257,869</td>
<td>$2,951,648</td>
</tr>
<tr>
<td>Debt Services</td>
<td>$284,525</td>
<td>$289,330</td>
<td>$336,641</td>
<td>$250,653</td>
<td>$410,972</td>
<td>$247,970</td>
</tr>
<tr>
<td>Fund Transfers</td>
<td>$0</td>
<td>$0</td>
<td>$16,395</td>
<td>$87,935</td>
<td>$90,932</td>
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</tr>
<tr>
<td><strong>Total Expenses</strong></td>
<td>$1,340,700</td>
<td>$2,291,378</td>
<td>$1,688,563</td>
<td>$1,551,313</td>
<td>$2,317,665</td>
<td>$5,302,719</td>
</tr>
<tr>
<td><strong>Ending Balance</strong></td>
<td>$1,429,140</td>
<td>$1,468,271</td>
<td>$2,308,697</td>
<td>$2,799,873</td>
<td>$3,369,338</td>
<td>$1,271,073</td>
</tr>
</tbody>
</table>

(1) 2012 Ending Balance.
Over the last 7 years, revenues and operational expenditures have increased steadily. The water utility also continued to pay off debt service and invest in capital projects. At the end of 2019 the water fund had an end-of-year balance of $1,172,761.

WATER UTILITY FINANCIAL ANALYSIS

Tables 8-3 shows the historical data upon which the future projections are based. Forecast factors used to determine the projections are shown in Table 8-4. The ERU growth rate reflects the City’s anticipated population growth rate, which is detailed in Chapter 2.

### TABLE 8-4
Forecast Factors

<table>
<thead>
<tr>
<th>Forecast Factors</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water ERU Growth Rate</td>
<td>2.5%</td>
</tr>
<tr>
<td>Annual Rate Increase</td>
<td>2021, 2024, 2027: 6.0% Other Years: 3.0%(1)</td>
</tr>
<tr>
<td>Cost-of-Living Adjustment</td>
<td>4.0%</td>
</tr>
<tr>
<td>General Inflation Rate</td>
<td>3.0%</td>
</tr>
</tbody>
</table>

(1) Per City Ordinance 1314.

FUTURE REVENUES AND EXPENDITURES

Future water utility revenues and expenditures for 2020 through 2030 are summarized in Table 8-6.

**Revenues**

Future revenues have been projected based on a review of the historical financial data provided by the City, in conjunction with the forecast factors given in Table 8-4. Water sales are expected to increase as a result of the ERU growth rate and annual rate increases. A typical rate increase of 3.0 percent shall occur most years; however, in 2021, 2024, and 2027 the rate increase will be 6.0 percent in order to assure adequate funding for O&M and capital expenses. All other revenues shall increase at the 3.0 percent inflation rate as shown in Table 8-4.

**Expenditures**

Future expenses have been projected based on a review of the historical financial data provided by the City, in conjunction with the forecast factors given in Table 8-4. Wages and benefits will increase at the 4.0 percent cost-of-living adjustment while all other expenses shall increase at the 3.0 percent general inflation rate. A new expenditure line item, Water Use Efficiency (WUE) Measures, was also added to the projected budget, as
required by the Water Loss Control Action Plan detailed in Chapter 5. This line item contains the cost for leak detection once every three years. All other WUE expenses, such as public outreach and capital projects, remain in the O&M and CIP budget line items. Finally, the Capital Improvement Program schedule, with costs adjusted for inflation, is summarized in Table 8-5 below.
TABLE 8-5

Capital Improvement Plan Project Cost Summary\(^{(1)}\)

<table>
<thead>
<tr>
<th>Project Number</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>ST-1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$1,053,000</td>
<td>$1,277,000</td>
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</tr>
<tr>
<td>ST-2</td>
<td>$88,000</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>SO-1</td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>SO-2</td>
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</tr>
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<td>SO-3</td>
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<td>SO-4</td>
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</tr>
<tr>
<td>MT-1</td>
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<td>$320,000</td>
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</tr>
<tr>
<td>D-1</td>
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<td>$885,000</td>
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<td>$36,000</td>
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<td>$39,000</td>
<td>$40,000</td>
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<td>$43,000</td>
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<td>$872,085</td>
<td>$1,435,000</td>
<td>$2,093,426</td>
<td>$1,674,000</td>
</tr>
</tbody>
</table>

\(^{(1)}\) Priced in project year's dollars, 3.0 percent inflation assumed.
### TABLE 8-6

#### Projected Revenues and Expenses Summary

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
<th>2027</th>
<th>2028</th>
<th>2029</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenue</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Water Sales</strong></td>
<td>$2,107,600</td>
<td>$2,286,700</td>
<td>$2,412,500</td>
<td>$2,545,200</td>
<td>$2,761,500</td>
<td>$2,913,400</td>
<td>$3,073,600</td>
<td>$3,334,900</td>
<td>$3,518,300</td>
<td>$3,711,800</td>
<td>$3,915,900</td>
</tr>
<tr>
<td><strong>Connection Fees</strong></td>
<td>$500,000</td>
<td>$515,000</td>
<td>$530,500</td>
<td>$546,400</td>
<td>$562,800</td>
<td>$579,700</td>
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<td>$615,000</td>
<td>$633,500</td>
<td>$652,500</td>
<td>$672,100</td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>$3,600</td>
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<td>$3,800</td>
<td>$3,900</td>
<td>$4,000</td>
<td>$4,100</td>
<td>$4,200</td>
<td>$4,300</td>
<td>$4,400</td>
<td>$4,500</td>
<td>$4,600</td>
</tr>
<tr>
<td><strong>Interest Income</strong></td>
<td>$26,800</td>
<td>$27,600</td>
<td>$28,400</td>
<td>$29,300</td>
<td>$30,200</td>
<td>$31,100</td>
<td>$32,000</td>
<td>$33,000</td>
<td>$34,000</td>
<td>$35,000</td>
<td>$36,100</td>
</tr>
<tr>
<td><strong>Loan Proceeds</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Grant Proceeds</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Transfers</strong></td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
<td>$0</td>
</tr>
<tr>
<td><strong>Total Revenue</strong></td>
<td>$2,638,000</td>
<td>$2,833,000</td>
<td>$2,975,200</td>
<td>$3,124,800</td>
<td>$3,358,500</td>
<td>$3,706,900</td>
<td>$3,987,200</td>
<td>$4,190,200</td>
<td>$4,403,800</td>
<td>$4,628,700</td>
<td></td>
</tr>
</tbody>
</table>

| **Expenditures**     |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |                       |
| **Wages and Benefits**| $967,100              | $1,005,800            | $1,046,000            | $1,087,800            | $1,131,300            | $1,176,600            | $1,223,700            | $1,272,600            | $1,325,300            | $1,376,400            | $1,431,500            |
| **Utilities**        | $184,600              | $190,100              | $195,800              | $201,700              | $207,800              | $214,000              | $220,400              | $227,000              | $233,800              | $240,800              | $248,000              |
| **Maintenance/Repairs**| $93,300              | $96,100               | $99,000               | $102,000              | $105,100              | $108,300              | $111,500              | $114,800              | $118,200              | $121,700              | $125,400              |
| **Administration**   | $67,700               | $69,700               | $71,800               | $74,000               | $76,200               | $78,500               | $80,900               | $83,300               | $85,800               | $88,400               | $91,100               |
| **Equipment**        | $159,800              | $164,600              | $169,500              | $174,600              | $179,800              | $185,200              | $190,800              | $196,500              | $202,400              | $208,500              | $214,800              |
| **Mitigation Water** | $337,500              | $347,600              | $358,000              | $368,700              | $379,800              | $391,200              | $402,900              | $415,000              | $427,500              | $440,300              | $453,500              |
| **Tax**              | $115,700              | $119,200              | $122,800              | $126,500              | $130,300              | $134,200              | $138,200              | $142,300              | $146,600              | $151,000              | $155,500              |
| **Miscellaneous**    | $51,400               | $52,900               | $54,500               | $56,100               | $57,800               | $59,500               | $61,300               | $63,100               | $65,000               | $67,000               | $69,000               |
| **Water Use Efficiency Measures**| $0                | $0                    | $6,500                | $0                    | $7,100                | $0                    | $7,800                | $0                    | $0                    | $0                    | $0                    |
| **Total Operation Expenditures** | $1,977,100 | $2,046,000            | $2,123,900            | $2,191,400            | $2,268,100            | $2,354,600            | $2,429,700            | $2,514,600            | $2,610,600            | $2,694,100            | $2,788,800            |
| **Capital Projects** | $406,000              | $765,000              | $442,000              | $1,067,000            | $297,000              | $1,321,000            | $1,562,000            | $872,085              | $1,435,000            | $2,039,426            | $1,674,000            |
| **Debt Service**     | $245,500              | $245,000              | $212,400              | $211,200              | $210,100              | $208,900              | $207,800              | $65,200               | $64,900               | $64,600               | $64,300               |
| **Fund Transfers**   | $0                    | $0                    | $0                    | $0                    | $0                    | $0                    | $0                    | $0                    | $0                    | $0                    | $0                    |
| **Total Expenses**   | $2,628,600            | $3,056,000            | $2,778,300            | $3,469,600            | $3,775,200            | $3,884,500            | $4,199,500            | $4,351,885            | $4,410,500            | $4,852,126            | $4,527,100            |

| **Ending Balance**   | $1,182,161            | $959,161              | $1,156,061            | $811,261              | $1,394,561            | $1,038,361            | $545,761              | $1,081,076            | $1,160,776            | $712,450              | $814,050              |

(1) 2019 Ending Balance.
(2) Increases at ERU growth rate and annual rate increase (see Table 8-4).
(3) Increases at general inflation rate (see Table 8-4).
(4) Increases at cost of living adjustment rate (see Table 8-4).
The City’s water utility fund is projected to have adequate funding to meet all of its O&M, debt service, capital projects, and water use efficiency needs. The ending balance for each year is in surplus, culminating with an end-of-year balance of $921,561 in 2030.

AVAILABLE CAPITAL PROJECT FUNDING SOURCES

The City would prefer to complete capital improvements with revenue collected from rates to the extent possible. However, the City has several large projects on its 20-year CIP program that may need to be funded through grants or low interest loans to be completed in a timely manner. This section describes several funding sources available to the City without reference to any specific project, including information on the following, which were considered by the City:

Loans: Public Works Trust Fund Loan
Drinking Water State Revolving Fund
USDA Rural Development (RD)
Community Economic Revitalization Board

Bonds: Revenue Bonds

KING COUNTY COMMUNITY DEVELOPMENT BLOCK GRANT

King County offers community development block grants for Cities throughout the County. Utility projects are eligible if they meet at least one of the objectives of the Community Development Block Grant Program, which are to benefit low- and moderate-income persons, to aid in the prevention or elimination of slums or blight, and to meet community development needs having a particular urgency.

PUBLIC WORKS TRUST FUND

The Public Works Trust Fund (PWTF) is a revolving loan fund designed to help local governments finance needed public works projects through low-interest loans and technical assistance. The PWTF, established in 1985 by legislative action, offers loans substantially below market rates, payable over periods ranging up to 20 years.

Interest rates are 0.5 percent, 1 percent, or 2 percent, with the lower interest rates providing an incentive for a higher financial share. A minimum of 5 percent of project costs must be provided by the local community to qualify for a 2 percent loan. A 10 percent local share qualifies the applicant for a 1 percent interest rate and a 15 percent local share qualifies for a 0.5 percent loan. The useful life of the project determines the loan term, with a maximum term of 20 years.

To be eligible, an applicant must be a local government such as a city, town, county, or special purpose utility district, and have a long-term plan for financing its public work
needs. If the applicant is a city, town, or county it must adopt a 1/4-percent real estate excise tax dedicated to capital purposes. Eligible public works systems include streets and roads, bridges, storm sewers, sanitary sewers, and domestic water. Loans are presently offered only for purposes of repair, replacement, rehabilitation, reconstruction or improvement of existing service users. A recent change has now made projects intended to meet reasonable growth (as detailed in a 20-year growth management plan) eligible for PWTF funding.

An applicant can apply to the construction program for up to $10,000,000 per biennium. Applications for the construction program are due in May of each year, with funds available approximately 1 year later. Preconstruction loans are limited to $1,000,000 per biennium and can be submitted throughout the year. A preconstruction application must be submitted to the Public Works Board on or before the 15th of each month. The Board meets on a monthly basis and makes the award decisions at that time. Preconstruction funds are available as soon as the contracts can be issued.

**DRINKING WATER STATE REVOLVING FUND**

DWSRF will provide loan funding for water system projects. Health and safety projects will receive the highest rankings and receive funding. Water main projects, even those projects that improve fire flow typically do not receive a ranking high enough to receive funding.

**COMMUNITY ECONOMIC REVITALIZATION BOARD (CERB)**

The Community Economic Revitalization Board’s prime mission is to partner with business and industry and local governments to maintain and create jobs. Established by the Legislature in 1982, CERB provides low-interest loans or, in unique circumstances, grants to help finance local public infrastructure necessary to develop or retain stable business and industrial activities. Projects eligible for funding include domestic and industrial waters systems, sanitary and storm sewers, port facilities, and telecommunications.

Typically, CERB provides loans in the amount of $1 million and, where applicable, grants in the amount of $300,000. The interest rate is tied to the current cost of a 10-year bond and a local match of 10 percent is required.

Eligible applicants include Washington State subdivisions in partnership with private enterprise. If there is no economic partner, a local government can produce a feasibility study that documents realistic job retention or creation. Applications must be submitted 45 days prior to a regularly scheduled CERB Meeting, which typically meets in January, March, July, and November.
**REVENUE BONDS**

The most common source of funds for construction of major utility improvements is the sale of revenue bonds. These are tax-free bonds are issued by a city or town. The major source of funds for debt service on revenue bonds is from monthly water or sewer service charges. In order to qualify to sell revenue bonds marketable to investors, the bonds typically have contractual provisions for the city or town to meet debt coverage requirements. The city or town must show that its annual net operating income (gross income less operation and maintenance expenses) must be equal to or greater than a factor, typically 1.2 to 1.4 times the annual debt service on all par debt. If a coverage factor has not been specified it will be determined at the time of any future bond issues.

**GENERAL OBLIGATION BONDS**

The City, by special election, may issue general obligation bonds to finance almost any project of general benefit to the City. The bonds are to be paid through assessments levied against all privately owned properties within the City. This includes vacant property which otherwise would not contribute to the cost of such general improvements. This type of bond issue is usually reserved for municipal improvements that are of general benefit, to the public, such as arterial streets, bridges, lighting, municipal buildings, firefighting equipment, parks, and water and wastewater facilities. General obligation bonds have the best market value and carry the lowest rate of interest of all types of bonds available to the City. Disadvantages of general obligation bonds include the following:

- Voter approval is required, which may be time-consuming, with no guarantee of successful approval of the bond.
- The City may have a practical or legal limit for the total amount of general obligation debt. Financing large capital improvements through general obligation debt reduces the ability of the utility to issue future debt.

**UTILITY LOCAL IMPROVEMENT DISTRICTS**

Another potential source of funds for improvements comes through the formation of Utility Local Improvement Districts (ULIDs) involving an assessment made against properties benefited by the improvements. ULID bonds are further guaranteed by the revenues and are financed by issuance of revenue bonds.

ULID financing is frequently applied to water system extensions into areas previously not served. Typically, ULIDs are formed by the City at the written request (by petition) of the property owners within a specific area of the City. Upon receipt of a sufficient number of signatures on petitions, the local improvement area is defined. Each separate property in the ULID is assessed in accordance with the special benefits the property receives from the water system improvements.
A City-wide ULID could form part of a financing package for large-scale capital projects such as water supply or storage improvements. These capital improvements typically benefit all residents in the service area. The Citywide ULID would be formed by a majority vote of the City Council.

There are several benefits to the City in selecting ULID financing. The assessment places a lien on the property and must be paid in full upon sale of the property. Further, property owners may pay the assessment immediately upon receipt, thus reducing the costs financed by the ULID. The advantages of ULID financing, as opposed to rate financing, to the property owner include:

1. The ability to avoid interest costs by early payment of assessments.
2. Low-income senior citizens may be able to defer assessment payments until the property is sold.
3. Some Community Development Block Grant funds are available to property owners with incomes near or below the poverty level. Funds are available only to reduce assessments.

The major disadvantage to the ULID process is that it may be politically difficult to approve formation. The ULID process may be stopped if owners of 40 percent of the property within the ULID boundary protest its formation.

DEVELOPER FINANCING

Developers may fund the construction of extensions to the water system to property within new plats. The developer extensions are turned over to the City for operation and maintenance when completed.

It may be necessary, in some cases, to require the developer to construct more facilities that those required by the development in order to provide either extensions beyond the plat and/or larger pipelines for the ultimate development of the water system. The City may, by policy, reimburse the Developer through either direct outlay, latecomer charges, or reimbursement agreements for the additional cost of facilities, including increased size of pipelines over those required to serve the property under development. Compensation for oversizing is usually considered when it is necessary to construct a pipe larger than eight inches in diameter in a residential area to comply with the intent of the City’s comprehensive plan. Construction of any pipe in commercial or industrial areas that is larger than the size required to serve the development should also be considered as an oversized line, therefore possibly eligible for compensation. Developer reimbursement (latecomer) agreements provide up to 10 years or more for developers to receive payment form other connections made to the developer-financed improvements.
GENERAL FACILITIES CHARGES

The City has adopted General Facilities Charges to finance improvements of general benefit to the total water system which are required to meet future growth. General Facilities Charges are generally established as one-time charges assessed against new water customers as a way to recover a part of the cost of additional system capacity constructed for new customer use.

The General Facilities Charges are deposited in a construction fund to construct such facilities. The intent is that all new system customers will pay an equitable share of the cost of the system improvements needed to accommodate growth. Typical items of construction financed by the system development charge are water treatment facilities, pump stations, transmission lines, and other general improvements that benefit the entire system.
APPENDIX A

DOH WATER SYSTEM PLAN SUBMITTAL FORMS
Water System Plan Submittal Form

This form must be completed and submitted along with the Water System Plan (WSP). It will expedite review and approval of your WSP. **All water systems should contact their regional planner before developing any planning document for submittal.**

<table>
<thead>
<tr>
<th>City of North Bend</th>
<th>60100 A</th>
<th>City of North Bend</th>
<th>Water Systems Owner’s Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Water System Name</td>
<td>PWS ID# or Owner ID#</td>
<td>Mark Rigos</td>
<td>Public Works Director</td>
</tr>
<tr>
<td>Contact Name for Utility</td>
<td>Phone Number</td>
<td>(425) 888-7650</td>
<td>Title</td>
</tr>
<tr>
<td>920 SE Cedar Falls Way</td>
<td>North Bend</td>
<td>Washington</td>
<td>98045</td>
</tr>
<tr>
<td>Contact Address</td>
<td>City</td>
<td>State</td>
<td>Zip</td>
</tr>
<tr>
<td>Russell Porter, P.E.</td>
<td>206-284-0860</td>
<td>Professional Engineer</td>
<td>Title</td>
</tr>
<tr>
<td>2. Project Engineer</td>
<td>Phone Number</td>
<td>1130 Rainier Ave S #300</td>
<td>Seattle</td>
</tr>
<tr>
<td>Project Engineer Address</td>
<td>City</td>
<td>Washington</td>
<td>98144</td>
</tr>
<tr>
<td>Billing Contact Name (required if not the same as #1)</td>
<td>Billing Phone Number</td>
<td>Billing Fax Number</td>
<td></td>
</tr>
<tr>
<td>4. How many services are presently connected to your system?</td>
<td>2,745</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Is your system expanding (circle what applies: seeking to extend service area or increase number of approved connections)?</td>
<td>505</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. If the number of services is expected to increase, how many new connections are proposed in the next six years?</td>
<td>505</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. If your system is private-for-profit, is it regulated by the State Utilities and Transportation Commission?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Is the system located in a Critical Water Supply Service Area (i.e., have a Coordinated Water System Plan)?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Is your system a customer of a wholesale water system?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Will your system be pursuing additional water rights from the Department of Ecology in the next 20 years?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Is your system proposing a new intertie?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Do you have projects currently under review by us?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Are you requesting distribution main project report and construction document submittal exception and if so, does the WSP contain standard construction specifications for distribution mains?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. The water system is responsible for sending a copy of the WSP to adjacent utilities for review or a letter notifying them that a copy of the WSP is available for their review and where the review copy is located. Has this been completed?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. The purveyor is responsible for sending a copy of the WSP to all local governments within the service area (county and city planning departments, etc.). Has this been completed?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Are you proposing a change in the place of use of your water right?</td>
<td>No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. What is the last year of the plan approval period (the year the shortest WSP projection is made)?</td>
<td>2030</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If answer to questions 7, 8, 11, 14 and/or 15 is “yes,” list who you sent the WSP to: **King County, Sallal Water Association, Seattle Public Utilities, City of Snoqualmie, Wilderness Rim HOA, River Bend HOA**

| 18. Is this plan: | ☑ an Initial Submittal | ☐ a Revised Submittal |

Please enclose the following number of copies of the WSP:

- 3 copies for Northwest and Southwest Regional Offices OR 2 copies for Eastern Regional Office (We will send one copy to Ecology)
- 1 additional copy if you answered “yes” to question 7.
- 3 Total copies attached

Please return completed form to the Office of Drinking Water regional office checked below.

- ☑ Northwest Drinking Water Operations
  Department of Health
  20425 72nd Avenue South, Suite 310
  Kent, WA 98032-2358
  253-395-6750
- ☐ Southwest Drinking Water Operations
  Department of Health
  PO Box 47823
  Olympia, WA 98504-7823
  360-236-3030
- ☐ Eastern Drinking Water Operations
  Department of Health
  16201 East Indiana Avenue Suite 1500
  Spokane Valley, WA 99216
  509-329-2100

For people with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TDD/TTY call 711).

DOH Form 331-397-F (Updated 01/17)
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Content Description</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>Description of Water System</strong></td>
</tr>
<tr>
<td>1</td>
<td>(√) Ownership and management</td>
</tr>
<tr>
<td></td>
<td>(√) System history and background</td>
</tr>
<tr>
<td></td>
<td>(√) Inventory of existing facilities</td>
</tr>
<tr>
<td></td>
<td>(√) Related plans: Coordinated Water System Plan (CWSP), Comp./Community</td>
</tr>
<tr>
<td></td>
<td>(√) Information &amp; Maps: Service area, retail service area, designate land use and zoning, future comprehensive plan request for changes to land use, &amp; agreements for plan approval period.</td>
</tr>
<tr>
<td></td>
<td>(√) Policies: Service area, SMA, conditions of service, annexation</td>
</tr>
<tr>
<td></td>
<td>(√) Consistency from local planning agency</td>
</tr>
<tr>
<td></td>
<td>WSP Page #</td>
</tr>
<tr>
<td></td>
<td>1-1, 1-1→1-3, 1-3→1-14, 1-14→1-16, Fig 1-1→Fig 1-9, 1-20→1-24, 1-16, Appendix D</td>
</tr>
<tr>
<td>2</td>
<td><strong>Basic Planning Data</strong></td>
</tr>
<tr>
<td></td>
<td>(√) Current water use: Population, service connections, &amp; ERUs</td>
</tr>
<tr>
<td></td>
<td>(√) Demand forecast for 10 year period and a minimum of a 20 year period* for population, service connections, &amp; demand forecasts with &amp; w/o expected efficiency savings.</td>
</tr>
<tr>
<td></td>
<td>(√) Monthly and annual production. Totals per source. Water supply Characteristics &amp; Demand Characteristics (see Ch.4). Add subtitles with description &amp; discussion on effect of water use</td>
</tr>
<tr>
<td></td>
<td>(√) Annual usage for water supplied to other systems</td>
</tr>
<tr>
<td></td>
<td>(√) Annual usage by customer class</td>
</tr>
<tr>
<td></td>
<td>(√) Historical total water loss (DSL) – percent and volumes</td>
</tr>
<tr>
<td></td>
<td>(√) &gt;1000, seasonal variations in consumption by customer class</td>
</tr>
<tr>
<td></td>
<td>WSP Page #</td>
</tr>
<tr>
<td></td>
<td>2-1→2-11, 2-11→2-14, 2-2→2-5, 2-7→2-8, 2-6</td>
</tr>
<tr>
<td>3</td>
<td><strong>System Analysis</strong></td>
</tr>
<tr>
<td></td>
<td>(√) Capacity analysis with water right self-assessment (3 forms DOH/ECY per MOU): existing, 10 year period, and 20th year projections</td>
</tr>
<tr>
<td></td>
<td>(√) System design standards</td>
</tr>
<tr>
<td></td>
<td>(√) Water quality analysis</td>
</tr>
<tr>
<td></td>
<td>(√) System inventory, description and analysis</td>
</tr>
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<td></td>
<td>(√) Source</td>
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<td></td>
<td>(√) Treatment</td>
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<td></td>
<td>(√) Storage</td>
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<td></td>
<td>(√) Distribution system/hydraulics</td>
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<tr>
<td></td>
<td>(√) Summary of system deficiencies</td>
</tr>
<tr>
<td></td>
<td>(√) Analysis of possible improvement projects</td>
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<td></td>
<td>WSP Page #</td>
</tr>
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<td></td>
<td>3-17→3-18, 3-1→3-5, 3-6→3-17, 3-17→3-20, 3-21, 3-21→3-23, 3-21→3-23, 3-21→3-23, 3-29→3-30, 3-21→3-23, 3-72, 3-29, 3-30, 4-8→4-10</td>
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<td>Chapter</td>
<td>Content Description</td>
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<tr>
<td>---------</td>
<td>---------------------</td>
</tr>
<tr>
<td>4</td>
<td><strong>Water Use Efficiency Program &amp; Water Resource Analysis</strong></td>
</tr>
<tr>
<td>✓</td>
<td>Water Use Efficiency Program per WAC 246-290-810</td>
</tr>
<tr>
<td>✓</td>
<td>&gt;1,000 Estimate water savings from measures past six years.</td>
</tr>
<tr>
<td>✓</td>
<td>If DSL is &gt; 10% water loss control action plan required for compliance with a schedule &amp; activities to minimize leakage in budget</td>
</tr>
<tr>
<td>✓</td>
<td>Source of supply analysis and evaluation of supply alternatives</td>
</tr>
<tr>
<td>✓</td>
<td>≥1,000 connections explore reclaimed water opportunities</td>
</tr>
<tr>
<td>5</td>
<td><strong>Source Water Protection (Check One or Both)</strong></td>
</tr>
<tr>
<td>✓</td>
<td>Wellhead protection program</td>
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<tr>
<td></td>
<td>Watershed control program</td>
</tr>
<tr>
<td>6</td>
<td><strong>Operation and Maintenance Program</strong></td>
</tr>
<tr>
<td>✓</td>
<td>Water system management and personnel</td>
</tr>
<tr>
<td>✓</td>
<td>Operator certification</td>
</tr>
<tr>
<td>✓</td>
<td>Routine operating procedures and preventive maintenance</td>
</tr>
<tr>
<td>✓</td>
<td>Water quality sampling procedures &amp; program – Identify WQ PN Requirements</td>
</tr>
<tr>
<td>✓</td>
<td>Coliform monitoring plan/map. Add RTCR and Ground Water Rule (GWR) narrative, actions</td>
</tr>
<tr>
<td>✓</td>
<td>Emergency program, water shortage plan, service reliability per WAC 246-290-420</td>
</tr>
<tr>
<td>✓</td>
<td>Address sanitary survey findings</td>
</tr>
<tr>
<td>✓</td>
<td>Cross-connection control program – Summarize next actions to address</td>
</tr>
<tr>
<td>✓</td>
<td>Recordkeeping, reporting, and customer complaint program</td>
</tr>
<tr>
<td>✓</td>
<td>Summary of O&amp;M deficiencies</td>
</tr>
<tr>
<td>7</td>
<td><strong>Distribution Facilities Design and Construction Standards</strong></td>
</tr>
<tr>
<td>✓</td>
<td>Standard construction specification for distribution mains</td>
</tr>
<tr>
<td>8</td>
<td><strong>Improvement Program</strong></td>
</tr>
<tr>
<td>✓</td>
<td>Capital improvement schedule for 10 years and up to 20th year</td>
</tr>
<tr>
<td>9</td>
<td><strong>Financial Program</strong></td>
</tr>
<tr>
<td>✓</td>
<td>Balanced budget for 10 year planning period and demonstrate financial viability</td>
</tr>
<tr>
<td>✓</td>
<td>Revenue &amp; cash flow stability to fund capital &amp; emergency improvements.</td>
</tr>
<tr>
<td>✓</td>
<td>Evaluation of affordable rate structure that encourages water demand efficiency. Budget line item if Water Loss Control Action Plan is required</td>
</tr>
<tr>
<td></td>
<td><strong>Miscellaneous Documents</strong></td>
</tr>
<tr>
<td>Required</td>
<td>Content Description</td>
</tr>
<tr>
<td>----------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>✓</td>
<td>Meeting of the consumers (documentation). Approval by EGB prior to DOH Approval</td>
</tr>
<tr>
<td>✓</td>
<td>County/Adjacent Utility Correspondence</td>
</tr>
<tr>
<td></td>
<td>≥1000 connections - State Environmental Policy Act (SEPA) Threshold</td>
</tr>
<tr>
<td>?</td>
<td>Agreements (intertie, service area, franchise, etc.)</td>
</tr>
<tr>
<td>?</td>
<td>Satellite Management Program</td>
</tr>
</tbody>
</table>
APPENDIX B

WFI REPORT
<table>
<thead>
<tr>
<th>1. SYSTEM ID NO.</th>
<th>2. SYSTEM NAME</th>
<th>3. COUNTY</th>
<th>4. GROUP</th>
<th>5. TYPE</th>
<th>6. PRIMARY CONTACT NAME &amp; MAILING ADDRESS</th>
<th>7. OWNER NAME &amp; MAILING ADDRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>60100 A</td>
<td>NORTH BEND, CITY OF</td>
<td>KING</td>
<td>A</td>
<td>Comm</td>
<td>KRAIG S. KRAMER [OPERATOR] PO BOX 896 NORTHBEND, WA 98045</td>
<td>NORTH BEND CITY OF MARK J. RIGOS, P.E. PO BOX 896 NORTHBEND, WA 98045</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STREET ADDRESS IF DIFFERENT FROM ABOVE</th>
<th>STREET ADDRESS IF DIFFERENT FROM ABOVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATTN</td>
<td>ATTN</td>
</tr>
<tr>
<td>ADDRESS</td>
<td>ADDRESS</td>
</tr>
<tr>
<td>CITY</td>
<td>CITY</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. 24 HOUR PRIMARY CONTACT INFORMATION</th>
<th>10. OWNER CONTACT INFORMATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Contact Daytime Phone: (425) 888-0486 x7655</td>
<td>Owner Daytime Phone: (425) 888-0486</td>
</tr>
<tr>
<td>Primary Contact Mobile/Cell Phone: (425) 864-0241</td>
<td>Owner Mobile/Cell Phone: (425) 652-6013</td>
</tr>
<tr>
<td>Primary Contact Evening Phone: (xxx)-xxx-xxxx</td>
<td>Owner Evening Phone: (xxx)-xxx-xxxx</td>
</tr>
<tr>
<td>Fax: (425) 888-3502</td>
<td>E-mail: xxxxxxxxxxxxxxxxxxxxx</td>
</tr>
<tr>
<td>Fax: (425) 888-3502</td>
<td>E-mail: xxxxxxxxxxxxxxxxxxxxx</td>
</tr>
</tbody>
</table>

11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)

- [ ] Not applicable (Skip to #12)
- [ ] Owned and Managed
- [ ] Managed Only
- [ ] Owned Only

12. WATER SYSTEM CHARACTERISTICS (mark all that apply)

- [ ] Agricultural
- [ ] Commercial / Business
- [ ] Day Care
- [ ] Food Service/Food Permit
- [ ] 1,000 or more person event for 2 or more days per year
- [ ] Hospital/Clinic
- [ ] Residential
- [ ] Industrial
- [ ] School
- [ ] Licensed Residential Facility
- [ ] Temporary Farm Worker
- [ ] Lodging
- [ ] Other (church, fire station, etc.):
- [ ] Recreational / RV Park

13. WATER SYSTEM OWNERSHIP (mark only one)

- [ ] Association
- [ ] County
- [ ] Investor
- [ ] City / Town
- [ ] Federal
- [ ] Private
- [ ] Special District
- [ ] State

14. STORAGE CAPACITY (gallons)

<table>
<thead>
<tr>
<th>15</th>
<th>16 SOURCE NAME</th>
<th>17 INTERIE</th>
<th>18 SOURCE CATEGORY</th>
<th>19 USE</th>
<th>20 TREATMENT</th>
<th>21 DEPTH</th>
<th>22 SOURCE LOCATION</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Source Number</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S01</td>
<td>SPRING</td>
<td>X</td>
<td></td>
<td>Y</td>
<td></td>
<td>1250</td>
<td>35 24N 08E</td>
</tr>
<tr>
<td>S02</td>
<td>75560/SALLAL</td>
<td>75560 Q</td>
<td></td>
<td>X</td>
<td></td>
<td>0</td>
<td>00N 00E</td>
</tr>
<tr>
<td>S03</td>
<td>Well (NB-3) APN061</td>
<td>X</td>
<td></td>
<td>Y</td>
<td></td>
<td>153</td>
<td>2500 SE SW 10 23N 08E</td>
</tr>
</tbody>
</table>

Source Number
Example: WELL #1 XY2456

If source is purchased or intertied, list seller’s name.
Example: SEATTLE

DOH 331-011 (Rev. 06/03)
1. SYSTEM ID NO. 60100 A  
2. SYSTEM NAME NORTH BEND, CITY OF  
3. COUNTY KING  
4. GROUP A  
5. TYPE Comm  

<table>
<thead>
<tr>
<th>25. SINGLE FAMILY RESIDENCES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Full Time Single Family Residences (Occupied 180 days or more per year)</td>
<td>1596</td>
</tr>
<tr>
<td>B. Part Time Single Family Residences (Occupied less than 180 days per year)</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>26. MULTI-FAMILY RESIDENTIAL BUILDINGS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Apartment Buildings, condos, duplexes, barracks, dorms</td>
<td>91</td>
</tr>
<tr>
<td>B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied more than 180 days/year</td>
<td>548</td>
</tr>
<tr>
<td>C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied less than 180 days/year</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>27. NON-RESIDENTIAL CONNECTIONS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units)</td>
<td>4</td>
</tr>
<tr>
<td>B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.</td>
<td>239</td>
</tr>
</tbody>
</table>

| 28. TOTAL SERVICE CONNECTIONS | 2387 |

<table>
<thead>
<tr>
<th>29. FULL-TIME RESIDENTIAL POPULATION</th>
<th>5510</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. How many residents are served by this system 180 or more days per year?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>30. PART-TIME RESIDENTIAL POPULATION</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. How many part-time residents are present each month?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. How many days per month are they present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>31. TEMPORARY &amp; TRANSIENT USERS</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. How many total visitors, attendees, travelers, campers, patients or customers have access to the water system each month?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>B. How many days per month is water accessible to the public?</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>32. REGULAR NON-RESIDENTIAL USERS</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. If you have schools, daycares, or businesses connected to your water system, how many students daycare children and/or employees are present each month?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. How many days per month are they present?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>33. ROUTINE COLIFORM SCHEDULE</th>
<th>JAN</th>
<th>FEB</th>
<th>MAR</th>
<th>APR</th>
<th>MAY</th>
<th>JUN</th>
<th>JUL</th>
<th>AUG</th>
<th>SEP</th>
<th>OCT</th>
<th>NOV</th>
<th>DEC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirement is exception from WAC 246-290</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
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<td>6</td>
<td>6</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>34. NITRATE SCHEDULE</th>
<th>QUARTERLY</th>
<th>ANNUALLY</th>
<th>ONCE EVERY 3 YEARS</th>
</tr>
</thead>
<tbody>
<tr>
<td>(One Sample per source by time period)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

35. Reason for Submitting WFI:  
- [ ] Update - Change  
- [ ] Update - No Change  
- [ ] Inactivate  
- [ ] Re-Activate  
- [ ] Name Change  
- [ ] New System  
- [ ] Other  

36. I certify that the information stated on this WFI form is correct to the best of my knowledge.  

SIGNATURE: __________________________ DATE: __________________________  
PRINT NAME: __________________________ TITLE: __________________________
WS ID  WS Name
60100   NORTH BEND, CITY OF

Total WFI Printed: 1

Water Facilities Inventory (WFI)

Report Create Date: 1/30/2020
Water System ld(s): 60100A
Print Data on Distribution Page: ALL
Print Copies For: DOH Copy
Water System Name: ALL
  County: -- Any --
  Region: ALL
  Group: ALL
  Type: ALL
Permit Renewal Quarter: ALL
Water System Is New: ALL
Water System Status: ALL
Water Status Date From: ALL To ALL
Water System Update Date ALL To ALL
Owner Number: ALL
SMA Number: ALL
SMA Name: ALL
Approved Connection Count From: ALL To: ALL
Full-Time Population From: ALL To: ALL
Water System Expanding: ALL
Source Type: ALL
Source Use: ALL
WFI Printed For: On-Demand
APPENDIX C

INTERLOCAL AGREEMENTS
EMERGENCY WATER SYSTEM INTERCONNECTION AGREEMENT

1. Date and Parties. This agreement is made and entered into this 21st day of May, 1987, by and between the City of North Bend, a Municipal Corporation, hereinafter referred to as the CITY, and the Sallal Water Association, a non-profit Washington corporation, hereinafter referred to as SALLAL.

2. General Recitation and Consideration.
   A. The City and Sallal are water purveyors in eastern King County, Washington;
   B. The City and Sallal attempt to cooperate with each other whenever possible in order to provide the best and most cost effective water service to their respective water users;
   C. The City and Sallal recognize the need in case of emergency for a back-up source of water;
   D. The City and Sallal have or are contemplating the construction of water systems contiguous to one another;
   E. The City and Sallal agree to be bound by the terms and conditions set forth below.

3. Water Resources. The City and Sallal have existing water supplies, water sources, and water rights. Each party's water resources shall remain that party's property, free and clear of any claim of the other party.

4. Water Systems. The two systems shall remain separate systems for all legal purposes. The purpose of this agreement is only to allow for an emergency interconnection and not to co-mingle the assets of the two systems. Neither party is the agent of the other; each party shall maintain at their respective expense, the water system existing within their respective boundaries. Neither party shall have any right to in any way affect the flow of water in the other's system.

5. Emergency Water. Emergency water is defined as water which either party can provide to the other on an emergency basis.

6. Emergency Definition. Emergencies are in part defined as follows:
   A. Failure of a water system pump requiring a repair period of longer than eight (8) consecutive hours; and/or,
   B. Extreme loss of pressure occasioned by emergency requirements for such uses as fire-fighting and the like, which loss of pressure lasts for a period in excess
D. The City and Sallal will jointly provide at their common boundary an underground vault to contain the necessary equipment which includes but is not limited to a pressure reducing valve and appurtenances needed to interconnect the above described water mains. Costs for said vault and equipment will be jointly and equally shared by both parties. Said vault is at present to contain the necessary equipment required to allow water to be delivered to the City from Sallal.

E. The City and Sallal will at a date no longer than two years from the date of this agreement provide at their common boundary the necessary pumps, equipment and appurtenances needed to complete the interconnect in such a way as to allow water to be delivered to Sallal from the City. Costs for said future items will be jointly and equally shared by both parties.

F. Each party shall be allowed by the other party to review plans, specifications, engineering calculations and construction details and approve in regards to the common connection point. There shall be no charge by each party to the other for said review.

11. Easements and Right of Ways. Any required easements, right of ways or permits shall be acquired by the party requiring the same at no expense to the other party.

12. Operational Costs and Accounting. Each party shall share equally and pay all costs associated with operation and maintenance of the above described vault at the point of interconnect.

13. System Monitoring. Monitoring of water systems shall be the responsibility of each respective party for their portion of the system.

14. Public Notifications. Public notification will be made in the event of a contamination related condition, as required by State Law, by the party in which the contamination is located.

15. Compliance with Applicable State, Federal and Local Laws and Regulations. Each party shall comply with all applicable Federal, State, County and other applicable laws, and regulations, as they relate to water purveyors of each party’s respective type.

16. Legal Action. Each party, as set forth above, shall maintain its own water system. If either party shall be sued by any third persons as a result of damages alleged to have been sustained as a result of the operation or maintenance of the other party’s system, then the party whose system is alleged to have caused damage shall defend the other party at no expense to said other party in said litigation.
and fidelity shall proceed to determine the question or questions submitted. The decision of the arbitrator or arbitrators shall be rendered within thirty (30) days after their appointment, and such decision shall be in writing and in duplicate, one counterpart thereof to be delivered to each of the parties hereto. The decision of the arbitrator or arbitrators shall be complied with promptly. The award of the arbitrator or arbitrators shall be binding, final and conclusive on the parties, and judgment on such award rendered may be entered in any court having jurisdiction thereof. Fees of the arbitrator or arbitrators and the expenses incident to proceeding shall be borne equally between the parties. Fees of the respective counsel engaged by the parties, and fees of expert witnesses or other witnesses called for the parties shall be paid by the respective party engaging such counsel or calling or engaging such witnesses. In the event that a controversy is submitted to arbitration, all obligations of the parties shall continue.

22. **Legality.** Should any provision of this agreement be judged invalid by a court of competent jurisdiction, the remaining provisions of this agreement shall not be affected, and the same shall remain in full force and effect.

23. **Execution of Documents.** Both parties agree to execute all documents necessary to effectuate the provisions contained herein.
WATER SERVICE CONTRACT

1. Date and Parties. This Agreement, for references purposes only, is dated the 6th day of April, 1993 and is entered into by and between the City of North Bend, herein referred to as the "City" and the Alpine Water Company, herein referred to as the "Water Company".

2. General Recitals.

A. The City is a municipal corporation authorized under the laws of the State of Washington and in that capacity, provides water to its citizens and to persons outside the City within the water service area.

B. The City currently provides water to the Alpine Water Company for the Water Company to distribute to its customers.

C. The existing between the City and the Water Company is outdated and that the parties have desired to enter into a new agreement to define their rights and responsibilities.

3. Term. The term of this Agreement shall be for one year from the date set forth in paragraph 1 above and shall automatically be renewed on an annual basis unless terminated pursuant to the provisions of paragraph 9 below.

4. Backflow Prevention Device. The Water Company, at its expense, shall acquire, install and maintain a backflow prevention device that meets or exceeds City standards. The backflow prevention device shall be installed and inspected by the City no later than May 1, 1993.

5. Water Meter. The City shall replace the existing water meter with a new water meter.

6. Rate.

A. The current rate of a flat fee of $122.43 per month shall continue until the first of the month following the installation of the water meter referenced in paragraph 5 above. On the first day of the month following the installation of the new water meter, the Water Company shall be charged the same rate that is charged to single-metered multi-family users outside the City limits, as said rate is established by ordinance of the North Bend City Council. The current rate is $14.25 per unit plus .69¢ per cubic meter of water used in excess of the total of 10 cubic meters times the number of units being serviced. For example, if there are six units being served through the single meter, then the current rate is $14.25 + (6 units * .69¢/unit) + (6 units * 10 cubic meters * .69¢/cubic meter)
following address:

City Administrator
City of North Bend
P.O. Box 896
North Bend, WA 98045

B. Any notices to be provided under this Agreement to the Water Company by the City shall be sent to the Water Company at the following address:

Alpine Water Company
13134 409th Avenue SE
North Bend, WA 98045

10. Severability. Each and every provision of this Agreement shall be deemed severable. In the event that any portion of this Agreement is determined by final order of a court of competent jurisdiction to be void or unenforceable, such determination shall not affect the validity of the remaining provisions thereof provided the intent of this Agreement can still be furthered without the invalid provision.

11. Time is of the Essence.

Time is of the essence as to each and every provision set forth herein.

12. Authorization by Council. North Bend City Council authorized the execution of this Agreement by Resolution No. 646.

CITY OF NORTH BEND

By: 
CHRIS LODAHL, Mayor

Approved as to form

By: 
LOREN D. COMBS
City Attorney

ATTEST:

By: 
PATTI HEDGES, City Clerk

ALPINE WATER COMPANY

By: 
MARVIN BROWN, President

Attest:

Ken Cabrala

Water Service Contract
Page 3 of 3
AGREEMENT

1. Date and Parties. This Agreement, for reference purposes only, is dated the 27 day of March, 1987, and is entered into by and between the CITY OF NORTH BEND, a Municipal Corporation, hereinafter referred to as the CITY, and the SALLAL WATER ASSOCIATION, a non-profit Washington corporation, hereinafter referred to as SALLAL.

2. General Recitations and Consideration.

A. The CITY and SALLAL are water purveyors in eastern King County, Washington;

B. The CITY and SALLAL attempt to cooperate with each other whenever possible in order to provide the best and most cost effective water service to their respective water users;

C. The CITY is the owner of a parcel of real property legally described in Exhibit A attached hereto and by reference incorporated herein, said real property being located in SALLAL'S water service area;

D. The CITY is desirous of obtaining future potable water service to said real property;

E. SALLAL is desirous of obtaining a future water storage site upon a portion of the CITY'S real property; and

F. The CITY will convey a portion of its property to SALLAL for a water tank site in consideration for the water memberships and waterline construction.

3. Conveyance of Real Property. The CITY does hereby convey to SALLAL the following described real property for the sole purpose of constructing and maintaining a water tank site, with appurtenant structures:

That portion of the Northeast quarter of the Southwest quarter of Section 18, Township 23 North, Range 9 East, W.M., King County, Washington, beginning at the intersection of the South right-of-way line of the S.E. Middle Fork Road with the East line of said Northeast quarter; Thence Southerly along said East line 260.00 feet; Thence Westerly at right angles to the preceding course a
population.

A. Said Membership Certificates are exempt and shall remain exempt from any Area-Wide Fee.

B. In addition to the above Membership Certificates SALLAL does hereby agree to provide as many additional Membership Certificates as needed by the CITY or its grantees in order to serve the real property legally described in Exhibit A, regardless of whether or not said property is subdivided. Said additional memberships, however, shall be subject to all standard debt-service fees and membership fees as any other Membership Certificate and shall not be entitled to the exemption referred to in the previous subparagraph.

7. Inter-Tie. The CITY and SALLAL are actively pursuing inter-tying their two systems. Both parties shall work diligently to develop an inter-tie plan to include associated costs and responsibilities as soon as possible.

8. Arbitration. Any controversy which shall arise between the parties regarding this Agreement, shall be settled by binding arbitration. Such arbitration shall be before one (1) disinterested arbitrator if one can be agreed upon, otherwise before three (3) disinterested arbitrators, one named by the CITY, one by SALLAL, and one by the two chosen; provided, that if said two arbitrators cannot agree upon a third arbitrator within fifteen (15) days, then said third arbitrator shall be appointed by the King County Superior Court upon motion of either party. A "disinterested arbitrator" shall be a person who shall not have a direct or indirect financial interest in the decisions to be made by the board of arbitrators and who shall not be an officer, director, employee, or agent of either party. The arbitrator or arbitrators shall determine the controversy in accordance with the laws of the State of Washington as applied to the facts found by him or them, and in accordance with the rules of the Uniform Arbitration Act. The arbitrator or arbitrators
10. Integrated Document. This Agreement contains the entire agreement between the parties respecting the subject matter herein, and there are no prior or contemporaneous agreements, oral or written, except as specifically stated.

11. Amendments. This Agreement shall not be amended unless the same is amended in writing and signed by the other parties.

12. Binding Upon Successors In Interest. This Agreement shall be binding upon the parties hereto and upon their successors in interest.

13. Execution of Documents. Both parties agree to execute all documents necessary to effectuate the provisions contained herein.

SALLAL WATER ASSOCIATION

By: ________________________
    Gerald Prior, President

As Authorized by Resolution No. 87-51
Dated _____________________

CITY OF NORTH BEND

By: ________________________
    Obe M. Healea, Jr., Mayor

ATTEST:

By: ________________________
    James F. Neher, CMC
    City Administrator

APPROVED AS TO FORM:

Kirshenbaum & Corbes

By: ________________________
    Loren D. Combs
    City Attorney

STATE OF WASHINGTON )
    ss.
COUNTY OF KING )

On this 27th day of March, 1987, before me, the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared GERALD PRIOR, to me known to be the President of SALLAL WATER ASSOCIATION, the corporation that executed the foregoing instrument, and acknowledged the said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned, and on oath stated that he is
Water System Name: City of North Bend  
PWS ID: 60100A

Planning/Engineering Document Title: Water System Plan  
Plan Date: March 2020

Local Government with Jurisdiction Conducting Review: City of North Bend

Before the Department of Health (DOH) approves a planning or engineering submittal under Section 100 or Section 110, the local government must review the documentation the municipal water supplier provides to prove the submittal is consistent with local comprehensive plans, land use plans and development regulations (WAC 246-290-108). Submittals under Section 105 require a local consistency determination if the municipal water supplier requests a water right place-of-use expansion. The review must address the elements identified below as they relate to water service.

By signing this form, the local government reviewer confirms the document under review is consistent with applicable local plans and regulations. If the local government reviewer identifies an inconsistency, he or she should include the citation from the applicable comprehensive plan or development regulation and explain how to resolve the inconsistency, or confirm that the inconsistency is not applicable by marking N/A. See more instructions on reverse.

<table>
<thead>
<tr>
<th>Local Government Consistency Statement</th>
<th>For use by water system</th>
<th>For use by local government</th>
</tr>
</thead>
</table>
| a) The water system service area is consistent with the adopted land use and zoning within the service area. | 1-17 to 1-19  
Fig 1-8,1-9 | Yes |
| b) The growth projection used to forecast water demand is consistent with the adopted city or county’s population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology. | 1-19, 2-1, 2-12 | Yes |
| c) For cities and towns that provide water service: All water service area policies of the city or town described in the plan conform to all relevant utility service extension ordinances. | 1-20 to 1-24 | Yes |
| d) Service area policies for new service connections conform to the adopted local plans and adopted development regulations of all cities and counties with jurisdiction over the service area. | 1-15, 1-20 to 1-24 | Yes |
| e) Other relevant elements related to water supply are addressed in the water system plan, if applicable. This may include Coordinated Water System Plans, Regional Wastewater Plans, Reclaimed Water Plans, Groundwater Management Area Plans, and the Capital Facilities Element of local comprehensive plans. | 1-14 to 1-16 | Yes |

I certify that the above statements are true to the best of my knowledge and that these specific elements are consistent with adopted local plans and development regulations.

David Miller, City Administrator, City of North Bend  
Printed Name, Title, & Jurisdiction
Consistency Review Guidance

For Use by Local Governments and Municipal Water Suppliers

This checklist may be used to meet the requirements of WAC 246-290-108. When using an alternative format, it must describe all of the elements; 1a), b), c), d), and e), when they apply.

For water system plans (WSP), a consistency review is required for the service area and any additional areas where a municipal water supplier wants to expand its water right’s place of use.

For small water system management programs, a consistency review is only required for areas where a municipal water supplier wants to expand its water right’s place-of-use. If no water right place-of-use expansion is requested, a consistency review is not required.

For engineering documents, a consistency review is required for areas where a municipal water supplier wants to expand its water right's place-of-use (water system plan amendment is required). For noncommunity water systems, a consistency review is required when requesting a place-of-use expansion. All engineering documents must be submitted with a service area map (WAC 246-290-110(4)(b)(ii)).

A) Documenting Consistency: The planning or engineering document must include the following when applicable.

a) A copy of the adopted land use/zoning map corresponding to the service area. The uses provided in the WSP should be consistent with the adopted land use/zoning map. Include any other portions of comprehensive plans or development regulations that relate to water supply planning.

b) A copy of the growth projections that correspond to the service area. If the local population growth projections are not used, explain in detail why the chosen projections more accurately describe the expected growth rate. Explain how it is consistent with the adopted land use.

c) Include water service area policies and show that they are consistent with the utility service extension ordinances within the city or town boundaries. This applies to cities and towns only.

d) All service area policies for how new water service will be provided to new customers.

e) Other relevant elements the Department of Health determines are related to water supply planning. See Local Government Consistency – Other Relevant Elements, Policy B.07, September 2009.

B) Documenting an Inconsistency: Please document the inconsistency, include the citation from the comprehensive plan or development regulation, and explain how to resolve the inconsistency.

C) Documenting a Lack of Local Review for Consistency: Where the local government with jurisdiction did not provide a consistency review, document efforts made and the amount of time provided to the local government for review. Please include: name of contact, date, and efforts made (letters, phone calls, and emails). To self-certify, please contact the DOH Planner.

The Department of Health is an equal opportunity agency. For persons with disabilities, this document is available on request in other formats. To submit a request, please call 1-800-525-0127 (TTY 1-800-833-6388).
APPENDIX E

WELL DOCUMENTS, WATER RIGHTS, AND MITIGATION AND PRODUCTION FIGURES
REPORT OF EXAMINATION

Date of application: March 17, 1965  Date of examination: March 21, 1965  Application No.: 19916

Name: Town of North Bend  Address: North Bend, Washington

Quantity applied for: 5.00 c.f.s.  Use: Municipal supply

Source of appropriation: Unnamed spring  Tributary of: North Fork Samish River

Legal sub.: Gaps 8, Lot 4  Sec.: 35  Twp.: 26 N.  Rge.: 14 W.  County: King

Estimated quantity: 7.50 c.f.s.  Probable low flow: 0.75 c.f.s.

Quantity previously appropriated: W.T. 0.75 c.f.s.  CWT. 0.75 c.f.s.  R.T. 0.75 c.f.s.

Other uses made of water: Domestic, stockwater, irrigation

Diversion works contemplated: Closed concrete catch basin and pump station

Other equipment: 12" transmission line

Irrigable acreage: Planned: Present: Feasible:

Other water rights appurtenant to this land: see below

Progress of project: not started

Present: none

Quantity recommended (total): 5.00 c.f.s.  Irrig.: 2.00 c.f.s.  Other uses: 3.00 c.f.s.

Power: Municipal  5.00 c.f.s.  336 acre-feet for public use

Department of Fisheries and Game report: see below

Special remarks and provisions:

Diversion intake shall be tightly screened at all times with wire having a mesh opening not greater than 0.125 (1/8) inch.

A minimum of 3.00 c.f.s. shall bypass the point of diversion at all times.

Use of the waters to be appropriated under this application will be for a public water supply. State board of health rules require every source of a public water supply to obtain written approval from the state director of health prior to any new construction or alterations of a public water supply. The applicant is advised to contact the Washington State Department of Health, Fourth Floor, Public Health Building, Olympia, with regard to the need for compliance.
An analysis of water use in eastern Washington has shown the average water requirement for municipal supply to be 150 gallons per capita per day. Allowing for an increase in the water requirements, the recommended annual diversion for municipal supply under this system is based on an average daily requirement per person of 150 gallons. Therefore, for the estimated population of 2000 by 1980 to be served under this system, it is recommended the annual diversion for municipal supply be limited to 336 acre-feet.

This application is approved for 3.00 acres, when available, as requested.

Applicants have no recorded water rights with this office. Applicants present receive their municipal water from Clough Creek under claim of vested rights. Therefore, permit may issue with the following provision, "Issued as a supplemental supply to the claim of vested rights from Clough Creek, the total annual diversion under this application shall not exceed 336 acre-feet, less any amount diverted under existing rights."

Applicant is advised that notice of proof of appropriation of water (under which the final certificate of water right issues) shall not be filed until the permanent diversion facilities have been installed together with a distribution system of main line piping capable of furnishing water for domestic supply to all lots which are intended to be supplied under this application.

As provided under ROW 43.21.130 and ROW 90.03.260, a master meter, individual service meters, or other suitable measuring devices shall be installed in this system to measure the total amount of the diversion. Records of the total monthly diversion shall be maintained by an official responsible for the management and operation of this water system, and this information shall be reported each year to the Supervisor of the Division of Water Resources. A standard form for reporting such information shall be sent annually to the manager of the system.

In accordance with section 90.05.290 R.C.W., I find that there is water available for appropriation from the source in question and that the diversion proposed in the application will not impair existing rights or be detrimental to the public welfare. Therefore, permit should issue as recommended above, subject to existing rights and indicated provisions.

Signed this ___ day of July, 1965

DAVID MOORE, Engineer
Division of Water Resources
CERTIFICATE OF WATER RIGHT

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

<table>
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<tr>
<th>CERTIFICATE NUMBER</th>
<th>REFERENCE NUMBER</th>
<th>APPLICATION NUMBER</th>
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<tr>
<td>12-401120</td>
<td>35902</td>
<td>12518</td>
<td>March 17, 1963</td>
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NAME

TOWN OF NORTH SAANICH

ADDRESS (DIRECT OR STREET)

North Saanich

WATER USE

Public Water to be Appropriated

SUBJECT

Diamond Spring

INHIBITION OF THE PUBLIC WATER

North Fork Saanich River

FLOW QUANTITY PER SECOND

5.0 gallons per minute

MAXIMUM RIGHT-OF-WAY PER YEAR

$90.0

QUANTITY OF USE OF THE

Municipal Supply - continuously

LOCATION OF DIVERSION/INHIBITION

APPROVED LOCATION OF DIVERSION/INHIBITION

400 feet North and 15 feet East from the Southwest corner of Sec. 33

LOCALITY TOWNSHIP, RANGE, OR WATERSHED

63S, R20W, 1/2 W., OF King

LEGAL DESCRIPTION OF PROPERTY WATER TO BE USED ON

Town of North Saanich.
Nothing in this permit shall be construed as excusing the permittee from compliance with any applicable federal, state, or local statutes, ordinances, or regulations including those administered by local agencies under the Shoreline Management Act of 1976.

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.300, 90.03.300, and 90.44.020.

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in RCW 90.44.180.

Given under my hand and the seal of this office at Olympia, Washington, this 16th day of [insert date], 19[78].

JOHN A. BIGGS, Director
Department of Ecology

[Signature]

R. Jerry Bolles, \( \text{ENGINEERING DATA} \)
[Signature]

FOR COUNTY USE ONLY
STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PERMIT
TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ Surface Water
(issued in accordance with the provisions of Chapter 17, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology)

☒ Ground Water
(issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology)

<table>
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<th>APPLICATION NUMBER</th>
<th>PERMIT NUMBER</th>
<th>CERTIFICATE NUMBER</th>
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<td>June 16, 1992</td>
<td>G1-26617(A)</td>
<td>G1-26617(A)P</td>
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</tbody>
</table>

NAME
City of North Bend

ADDRESS (STREET) P.O. Box 896 (CITY) North Bend (STATE) Washington (ZIP CODE) 98045-0896

The applicant is hereby granted a permit to appropriate the following public waters of the State of Washington, subject to existing rights and to the limitations and provisions set hereon.

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Well NB-3

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CURE FEET PER SECOND

2,646

MAXIMUM GALLONS PER MINUTE

3,094

MAXIMUM ACRE FEET PER YEAR

PURPOSE OF USE, PERIOD OF USE

Municipal Water Supply Purposes - Year-round, as needed

Water right is subject to WAC 173-507-020 instream flow levels for the following control points unless mitigated:

Snoqualmie River near Snoqualmie (USGS #12144500)
Snoqualmie River near Carnation (USGS #12149000)
Snohomish River near Monroe (USGS #12150800)

LOCATION OF DIVERSION/WITHDRAWAL

NB-3 - 566 feet north and 410 feet west from the south quarter corner of Section 10

RECORDED PLATTED PROPERTY

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

The place of use of this water right is the service area described in the Water System Plan approved by the Washington State Department of Health in April 2002 and the North Bend Urban Growth Area described in the King County Growth Management Planning Council’s Urban Growth Area Boundary Map (June 2005). Future Water System Plan updates may have the effect of revising the place of use of this water right, so long as the City of North Bend is and remains in compliance with the criteria in RCW 90.03.386.

PERMIT
DESCRIPTION OF PROPOSED WORKS

Well NB-3 was completed in sand and gravel deposits between 153-203 feet below land surface using a 20-inch, stainless steel, telescopic well screen.

This system is identified by the Washington State Department of Health by Public Water System ID 60100.

DEVELOPMENT SCHEDULE

<table>
<thead>
<tr>
<th>BEGIN PROJECT BY THIS DATE</th>
<th>COMPLETE PROJECT BY THIS DATE</th>
<th>WATER PUT TO FULL USE BY THIS DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Started</td>
<td>January 1, 2054</td>
<td>January 1, 2059</td>
</tr>
</tbody>
</table>

PROVISIONS

The following provisions are required as part of this water right approval.

**Monitoring**

North Bend will monitor water production, return flows from the WWTP, streamflow, and mitigation contributions using remote sensors and data loggers that will be connected to the mitigation and production sources. North Bend will be responsible for monitoring and data collection on a daily basis regardless of whether Well NB-3 was pumped or if instream flows were met. Monitoring must occur on a daily basis because mitigation water, when needed, will be discharged on a daily basis, and the mitigation requirement is based on aggregated impacts from the previous 20 days. The daily (24-hour) time period begins at the onset of each work day (approximately 8:00 AM). The City will input monitoring data into a database at the beginning of each day, and the database will calculate the mitigation requirement for the day.

The City will also collect data on a weekly basis to confirm various daily measurements and obtain supplemental information for their own analyses. The North Bend Operation and Monitoring Plan (Golder, 2007e) describes all of the City's monitoring activities in detail. The remainder of this section describes the monitoring activities required as part of this Report of Examination.

**Water Production**

Well NB-3 will be monitored with a totalizer meter and daily production volume will be recorded. Pump run times or instantaneous flow from the well will also be recorded electronically by the telemetry system. The telemetry system will monitor a transducer to record water levels during pumping and non-pumping conditions. The following daily data will be transmitted to the Public Works Department telemetrically each morning: volume pumped; hours pumped or average pumping rate; maximum and minimum ground water level.

**WWTP Flow Monitoring**

Flow from the WWTP to the South Fork Snoqualmie River is measured by a flow meter on the outfall pipe. This flow meter (totalizer) is read daily in the mornings with flows measured to the nearest 10,000 gallons. The readings will be recorded manually and transmitted to the Public Works Department in the morning of each day by e-mail or other reliable means.

**Streamflow Monitoring**

Monitoring streamflow at the three instream flow control points (USGS pages 12144500, 12149000 and 12150800) is required to perform the mitigation algorithm. The minimum measurement during the previous 24 hours will be compared to the minimum instream flow requirement for that day at each site to determine if the instream flow requirement was met. The City telemetry system will access the three pages to obtain the real-time streamflow data. If the telemetry system malfunctions, then the City staff would download the data available online. The USGS gauge data that is used is provisional and subject to revision. However, it is the best available source of data at that time and will be used to determine mitigation triggers. Mitigation will not be subject to revised data.

The mitigation plan requires that flows are monitored at three instream flow control points downstream of North Bend. Specifically, the USGS currently monitors flow at Carnation, Monroe, and Snoqualmie Falls. If the USGS were ever to discontinue monitoring at all of these three gauges, the City would be responsible for monitoring flow at the nearest control point (Snoqualmie Falls) in a manner similar to the USGS protocol.

**Hobo Springs Monitoring**

Water levels behind the existing weir will continue to be monitored using a pressure transducer to determine flow rates over the weir. The water level at the weir will be translated into a flow rate using a weir equation developed from previous analyses of Hobo Springs data. The transducer will take measurements at a preset time increment of 60 minutes and the data will be transmitted via telemetry. The telemetry system will be used to record average, minimum and maximum daily flow.

**Mitigation Water Monitoring**

The City will monitor the flow through the outfall pipe into Bosley Creek using a totalizer that will be read at least weekly. In addition, the instantaneous flow through the Hobo Springs transmission pipeline at Hobo Springs and the intertie with Saltal will be monitored via telemetry. Daily mitigation volumes will be calculated by summing the instantaneous flow data. The amount of time per day that mitigation water is delivered will be tracked for each source. Field inspections will be completed at least monthly to identify potential maintenance issues.

**Mitigation**

Mitigation shall be performed in accordance with the procedures outlined in the Mitigation Operations and Monitoring Plan (Golder, 2007e) and the provisions outlined in this Permit.

To the extent practical, the City must attempt to deliver mitigation flows uniformly over the course of the "mitigation day". This may not be possible when the mitigation requirement is less than the minimum daily delivery capacity of either mitigation source. However, when

PERMIT

2

G1-26617(A)P
either of the mitigation sources can be controlled in such a manner to provide uniform delivery of mitigation water over the mitigation day, this approach shall be employed. The City shall monitor and report the timing of mitigation deliveries to show compliance with this provision.

Reporting

Reporting will be required to summarize the monitoring data, evaluate the performance of the mitigation system, and assess the capacity of the mitigation system relative to current and future demand. Various reports will be generated, including initial system reports, annual system reports, and event reports. In addition, reporting includes periodic update of the Mitigation Operation and Monitoring Plan as new information becomes available, new approaches to managing the mitigation system developed, and/or new water-supply or mitigation sources are placed on line.

Initial System Reports

Quarterly reports will be generated for the first two years of operation. Quarterly reports will coincide with the quarter-periods of the calendar year, and the first quarterly report will be issued only after at least six weeks of data collection (otherwise data will be reported in the next quarter). Reporting will be on an annual basis after the first two years. Reports will be sent to Ecology, the Tulalip Tribes, the Snoqualmie Tribe, and made available to other interested parties upon request.

Initial system reports will contain summary information about the mitigation operations on a daily and annual basis. The summary information will include a table detailing daily and year-to-date cumulative values of: 1) water produced from Well NB-3; 2) assumed WWTP return flow; 3) the net stream depletion (i.e. mitigation requirement) of the volume of water produced from Well NB-3; 4) the number of days that mitigation water was required; 5) the volume of mitigation delivered from each mitigation source; 6) the timing (hours per day) of mitigation water delivered from each mitigation source; 7) the difference between the volume of mitigation required and the volume delivered; and 8) total Hoquiam flow captured by the collection box. In addition, the report should discuss any planned improvements to mitigation sources, additional evaluation of mitigation capacity as Q1 (instantaneous quantity) and Qa (annual quantity) limitations approach, the status of the availability of the mitigation sources, and any update to the mitigation algorithm (as approved by Ecology).

Initial system reports will also be generated quarterly during the first two years operation of any new water supply or mitigation source. These reports will be sent within 30 days of the end of the quarter.

Annual System Report

Annual reports will contain summary information about the mitigation operations on a daily and annual basis. The annual reports will contain the same information as the initial system reports; however, they will present all the data collected over a complete calendar year of operation. The annual system report will replace the initial system report that occurs on the fourth quarter of the calendar year. These reports will be sent to Ecology, the Tulalip Tribes, and the Snoqualmie Tribe within 30 days of the end of the year. Annual System Reports will be made available to other interested parties by Ecology upon request.

Event Reports

Event reports will be generated when the City misses a mitigation day, supplies insufficient mitigation volume, or has a water system failure. If the City misses a mitigation day or supplies insufficient mitigation volume, then the City will add that volume of water to the total mitigation volume required for the next day. A water system failure is any problem that compromises the ability to compute the mitigation algorithm. If the total volume of water produced in the preceding 24 hours is unknown (i.e., the totalizer number is unknown), then the City would mitigate using the highest level of pumping in the last three days. A report explaining the details of the event, the actions taken to ensure that mitigation was implemented, and how the City can prevent this problem in the future will be sent to Ecology, the Tulalip Tribes, and the Snoqualmie Tribe within 30 days of the event. Event reports will be made available to other interested parties by Ecology upon request.

Mitigation Operations and Monitoring Plan Update

The mitigation operations plan will be updated after the first two years of operation. All of the water monitoring and operations data from the mitigation supply system will be used to update the mitigation operations plan. The update may include revision of the streamflow depletion functions used by the mitigation algorithm if additional aquifer testing revisions or streamflow values of aquifer properties (see Special Provisions below). The update may also include revised assumptions regarding the fraction of annual pumpage returned to the Snoqualmie River as WWTP return flow (fwpump, as described in Section 2.4.2 of the Report of Examination).

After the initial 2-year update, the mitigation operations plan will be updated once every six years to coincide with other water system plan updates. Optimization of the mitigation system will occur as more data are collected during operation, especially during the first 5 years.

Adaptive Management Amendments

Adaptive management includes adding production sources NB-1 and NB-3 to this water right, adding the Tolt pipeline as a mitigation source, and modifying elements of the mitigation approach (These include updating aquifer properties at NB-3 to be used in the IGARF model of streamflow depletion and updating the wastewater treatment plant return flow function).

For each adaptive management amendment, North Bend shall submit the required documents to Ecology, the Tulalip Tribes, the Snoqualmie Tribe, and other interested parties who have requested notification. Ecology shall review the reports along with any comments received, and determine whether or not the proposed amendment meets the conditions of this Permit.

If Ecology determines that the proposed amendment does not comply with the conditions of this Permit, it shall give notice in writing to North Bend, with a copy to interested parties, of the factors causing the non-compliance and allow North Bend to resubmit the documents with the appropriate corrections.

Ecology's determination regarding any adaptive management amendments to this water right shall be in the form of an order to North Bend and shall be delivered with a notice to the Tulalip Tribes, Snoqualmie Tribe, and all other parties of interest (who have requested notification) of the right to appeal the order to the Pollution Control Hearings Board as prescribed by chapters 34.05 and 43.21B RCW.

PERMIT

G1-25617(A)P
After the appeal period of the order has passed, Ecology will issue an amended permit containing the new information.

Adding Production Sources
This permit authorizes use of Well NB-3 for municipal water supply purposes. However, the city ultimately wishes to add production sources NB-1 and NB-2. This section details the process needed to include NB-1 and NB-2 as approved points of withdrawal.

The City's future municipal production wells can generally be placed into one of two groups:

1. Withdrawals far from the river(s) that will result in multiple days of surface water depletion; and

2. Withdrawals close to the river(s) that will cause effectively instantaneous surface water depletion.

Well NB-1 falls in the first category, as does Well NB-3. Well NB-2 most likely falls in the second category. Well NB-1 is already constructed but requires additional testing, and Well NB-2 has not yet been constructed. To add either Well NB-1 or NB-2 as an approved source of supply under water right G1-26617(A), the following process must be followed:

North Bend must request a preliminary permit from Ecology before any future drilling or testing of NB-1 or NB-2. This is to insure that all parties agree with what should be tested and monitored.

It is anticipated that North Bend will be required to submit two reports to Ecology, the Tulalip Tribes, and the Snoqualmie Tribe: a "New Source Report" and an update to the Mitigation Operations and Monitoring Plan. The New Source Report must include the following:

- Description of well drilling and well construction (for NB-2 only);
- Description of well testing, estimated well yield, and estimated aquifer properties, aquifer boundaries, and additional characterization of local streamed conductivity;
- Analysis of potential for impairment of nearby wells;
- Estimation of the schedule of maximum daily stream depletion resulting from new source withdrawal; and,
- Description of how this new source will be operated along with other sources authorized by this permit such that the overall quantities allocated by this permit are not exceeded.

The updated Operations and Monitoring Plan must include an updated system description, monitoring requirements, mitigation operations and algorithm, other operational considerations and reporting requirements.

Ecology will process the request for additional source wells (NB-1 and NB-2) consistent with the requirements of RCW 90.44 in effect at the time the sources are requested to be added.

Adding Mitigation Sources
This permit authorizes the use of Hobo Springs and the Sallal wells for sources of mitigation. However, the city may ultimately seek to add the Tolt pipeline source to its mitigation options. To add the Tolt pipeline as an approved source of mitigation under water right G1-26617(A), the following process must be followed:

North Bend must submit two reports to Ecology, the Tulalip Tribes, and the Snoqualmie Tribe: a "New Mitigation Source Report" and an update to the Mitigation Operations and Monitoring Plan. The New Mitigation Source Report must include description of the following:

- Design, construction and SEPA permitting of the Tolt pipeline mitigation source;
- The location of discharge to the Snoqualmie River system;
- The transmitting capacity of the Tolt mitigation pipeline; and,
- Travel times between the control valve and the point of discharge.

The updated Operations and Monitoring Plan must include an updated system description, monitoring requirements, mitigation operations and algorithm, other operational considerations and reporting requirements.

Modifying the Mitigation Algorithm
In addition to regular updates of the Mitigation Operations and Monitoring Plan (see Reporting Provision), the City may desire to update the plan based on new information or development of more optimized mitigation routines. In this instance, the City shall submit a draft version of the modified Mitigation Operations and Monitoring Plan to Ecology, the Tulalip Tribes, the Snoqualmie Tribe, and interested parties who have requested notification. Ecology shall review the updated Operations and Monitoring Plan, along with any comments received and determine whether or not the new updated plan meets the conditions of this Permit.

Special Provisions

Mitigation Contracts
Once the final contracts for supply of mitigation water from the City of Seattle and the Sallal Water Association have been approved, copies of those contracts must be submitted to Ecology.

PERMIT
Future NB-3 Aquifer Test
The City will conduct a 72-hour constant rate pump test within the first two years of setting Well NB-3 into operation and implementing the mitigation system. During the pump test, Well NB-3 will be pumped at the maximum safe capacity that can be received by the water system and all of the pumped water will be discharged to a closed water system or outside the radius of influence of the well. The pump test data will be analyzed to update estimated transmissivity and storativity and will be reported to Ecology, the Tulalip Tribes, and the Snoqualmie Tribe. Future testing will use a similar monitoring system to previous Well NB-3 testing authorized under the preliminary permit issued on September 16, 2004. Results will be used to update transmissivity and storativity, reported to Ecology, the Tulalip Tribes, and the Snoqualmie Tribe, and if necessary used to update the mitigation algorithm and mitigation functions.

Conservation Planning Requirements
The water right holder must comply with the water use efficiency requirements as defined in Washington Department of Health WAC 246-290 for this size Group A public water system.

Health
The water appropriated under this application will be used for public water supply. The State Board of Health rules require public water supply owners to obtain written approval from the Department of Health's Office of Drinking Water Supply, prior to any new construction or alterations of a public water supply system.

The benefits and requirements of this water right authorization shall be reflected in future water system plan updates.

Hydraulic Project Approval
Contact the Washington Department of Fish and Wildlife to obtain hydraulic project approval for construction of the discharge point in Boxley Creek.

Tribal Rights
This authorization to make use of public waters of the state is subject to existing tribal rights, including any existing rights held by the United States for the benefit of Indian tribes under treaty, reservation, or settlement.

Certificate
The applicant is advised that notice of Proof of Appropriation of water (under which the final certificate of water right is issued) should not be filed until the permanent distribution system has been constructed and that quantity of water allocated by the permit to the extent water is required, has been put to full beneficial use.

This permit shall be subject to cancellation should the permittee fail to comply with the above development schedule and or fail to give notice to the Department of Ecology on forms provided by that Department documenting such compliance.

Given under my hand and the seal of this office at Bellevue, Washington, this 10th day of April 2008.

Department of Ecology

By

Buck Smith, Interim Section Supervisor, Water Resources
CERTIFICATE OF WATER RIGHT

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<th>PENET NUMBER</th>
<th>APPLICATION NUMBER</th>
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<td>940128</td>
<td>16943</td>
<td>16914</td>
<td>March 17, 1963</td>
</tr>
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</table>

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown.

PUBLIC WATER TO BE APPROPRIATED

Source: Unnamed spring

Tributary of the Surface Waters: North Fork Nooksack River

Quantity, Type or Use: Municipal Supply - Continuously

LOCATION OF DIVERSION/WITHDRAWAL

Approximate location of diversion/withdrawal: 650 feet North and 25 feet East from the Southwest corner of Sec. 33

LEGAL DESCRIPTION OF PROPERTY WATER TO BE USED ON

Town of North Bend.
REPORT OF EXAMINATION

Date of application: March 17, 1969  
Date of examination: March 31, 1969  
Application No.: 1891

Name: Dawn | Town of North Bend  
Address: North Bend, Washington

Quantity applied for: 5,000 a.f.s.  
Use: Municipal supply  
Source of appropriation: Unnamed spring  
Tributary of: North Fork Snoqualmie River

Legal sub. Govt. Lot 6  
Sec. 35  
Twp. 24 N.  
Rge. 8 E.  
County: King

ESTIMATED quantity: 7,25 a.f.s.  
Probable low flow: 0.75 a.f.s.

Quantity previously appropriated: W.T. 0.75 a.f.s.  
CWT 0.75 a.f.s.  
E.T. 0.75 a.f.s.

Other use made of water: domestic, stockwater, irrigation

Diversion works contemplated: closed concrete catch basin and pump station

Other equipment: 12" transmission line

Irrigable acres: Planned: 
Present:  
Feasible: 

Other water rights appurtenant to this land: see below

Progress of project: not started

Protests: none

Quantity recommended (total): 5,000 a.f.s.  
335 acre-feet per year  
336 acre-feet per year  
Dom.  
Power: Municipal  
5,000 a.f.s.  
336 acre-feet  
Other uses

Department of Fisheries and Game report: see below

Special remarks and provisions:

Diversion intake shall be tightly screened at all times with wire having a mesh opening not greater than 0.125 (1/8) inch.

A minimum of 3,000 a.f.s. shall bypass the point of diversion at all times.

Use of the waters to be appropriated under this application will be for a public water supply. State Board of Health rules require every owner of a public water supply to obtain written approval from the State Director of Health prior to any new construction or alteration of a public water supply. The applicant is advised to contact the Washington State Department of Health, Fourth Floor, Public Health Building, Olympia, with regard to the need for compliance.
DOCUMENT TITLE: SUPERSEDING CERTIFICATE

REFERENCE NUMBER:

GRANTOR
STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
ECOLOGY NORTHWEST REGIONAL OFFICE (ECY NWRO)
3190 - 160TH AVE SE
BELLEVUE, WASHINGTON 98008-5452
(425) 649-7000

GRANTEE
CASCADE GOLF COURSE
14319 436TH AVE SE
NORTH BEND, WA 98045

LEGAL DESCRIPTION

Source Name | Parcel | Township | Range | Sec | QQ Q
---|---|---|---|---|---
WELL | 1523089124 | 23N | 8E | 15 | SE SE

AUTHORIZED PLACE OF USE
That portion of the S ½ of the S ½ of Section 15, Township 23N, Range 8E, W. M. lying south of I-90 and northeasterly of the South Fork of the Snoqualmie River, and that portion of the N ½ of Section 22, Township 23N Range 8E, W. M. lying northeasterly of the South Fork of the Snoqualmie River.

PARCELS: 1523089124, 1523089019, 1523089133, 1523089170, 1523089194, 1523089132, 1523089039, 1523089147

ADDITIONAL LEGAL IS ON PAGE 2 OF ATTACHED DOCUMENT
This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown, but is limited to an amount actually beneficially used.

This certificate supersedes Water Right Certificate G1-00142C issued on 8/28/1972 and is subject to the following provisions.

<table>
<thead>
<tr>
<th>PRIORITY DATE</th>
<th>APPLICATION NUMBER</th>
<th>PERMIT NUMBER</th>
<th>CERTIFICATE NUMBER</th>
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<tbody>
<tr>
<td>May 1, 1997</td>
<td>5571</td>
<td>5282</td>
<td>CG1-00142C</td>
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</tbody>
</table>

**MAILING ADDRESS**
CASCADE GOLF COURSE
14319 436TH AVE SE
NORTH BEND, WA 98045

**SITE ADDRESS (IF DIFFERENT)**

Legal Description Continues on Page 2

**Quantity Authorized for Withdrawal or Diversion**

<table>
<thead>
<tr>
<th>WITHDRAWAL RATE</th>
<th>UNITS</th>
<th>ANNUAL QUANTITY (AF/YR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>GPM</td>
<td>33</td>
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</table>

**Purpose**

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<th>WITHDRAWAL RATE</th>
<th>ANNUAL QUANTITY (AF/YR)</th>
<th>PERIOD OF USE (mm/dd)</th>
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<tr>
<td>Golf course irrigation</td>
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<td>33</td>
<td>01/01 - 12/31</td>
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<table>
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<tr>
<th>ADDITIVE</th>
<th>NON-ADDITIVE</th>
<th>UNITS</th>
<th>ADDITIVE</th>
<th>NON-ADDITIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>GPM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Golf course irrigation</td>
<td>120</td>
<td>33</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IRRIGATED ACRES</th>
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<th>NON-ADDITIVE</th>
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<tbody>
<tr>
<td>34</td>
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</tbody>
</table>

**Source Location**

<table>
<thead>
<tr>
<th>COUNTY</th>
<th>WATERBODY</th>
<th>TRIBUTARY TO</th>
<th>WATER RESOURCE INVENTORY AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>King</td>
<td>Groundwater</td>
<td>South Fork Snoqualmie</td>
<td>7</td>
</tr>
</tbody>
</table>

| SUPERSEDING CERTIFICATE OF WATER RIGHT | 1                                      | CG1-00142C                     |
Place of Use
PARCELS (NOT LISTED FOR SERVICE AREAS)
1523089124, 1523089019, 1523089133, 1523089170, 1523089194, 1523089132, 1523089039, 1523089147

LEGAL DESCRIPTION OF AUTHORIZED PLACE OF USE
That portion of the S ½ of the S ¼ of Section 15, Township 23N, Range 8E, W. M. lying south of I-90 and northeasterly of the South Fork of the Snoqualmie River, and that portion of the N ½ of Section 22, Township 23N, Range 8E, W. M. lying northeasterly of the South Fork of the Snoqualmie River.

Measurement of Water Use
How often must water use be measured? Daily During Irrigation Season, Weekly During Winter
How often must water use data be reported to Ecology? By January 31 each year
What volume should be reported? Total Annual Volume
What rate should be reported? Total Instantaneous Rate (gpm)

Provisions
Monthly Water Allocation
Monthly water allocations for the Cascade Golf well are listed below:
January – 2.4 acre-feet  May – 3.4 acre-feet  September – 3 acre-feet
February – 2.0 acre-feet  June – 2.8 acre-feet  October – 2.7 acre-feet
March – 2.4 acre-feet  July – 4.5 acre-feet  November – 2 acre-feet
April – 2.2 acre-feet  August – 3.6 acre-feet  December – 2.2 acre-feet

The applicant can exceed these allocations under the following circumstances. On days when instream flows in the Snoqualmie River as measured at the Snoqualmie Falls gage (USGS 12144500) are being met per chapter 173-507 WAC, Cascade Golf can pump as much as needed without that day’s amount counting toward the monthly allowance. The instantaneous quantity of 120 gpm, and the annual amount of 33 acre-feet cannot be exceeded. Attachment 1, included with the Report of Examination and entitled “Method for Recording Data”, provides a table for recording water production along with detailed instructions.

If it can be shown that the requested change has a detrimental effect on existing rights, it shall be the responsibility of the operator to mitigate for this impact and/or alter or cease withdrawal of water.
Measurements, Monitoring, Metering and Reporting

An approved measuring device shall be installed and maintained for each withdrawal of the source identified by this water right in accordance with the rule “Requirements for Measuring and Reporting Water Use”, Chapter 173-173 WAC.

Water use data shall be recorded as specified in Attachment 1- Method for Recording Data. The maximum annual instantaneous rate of withdrawal and the annual total volume shall be submitted to Ecology by January 31 of the following year.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, Certificate number, source name, volume including units, Department of Health WFI water system number and source number (for public drinking water systems), and well tag number (for groundwater withdrawals). In the future, Ecology may require additional parameters to be reported or more frequent reporting. Ecology prefers web based data entry, but does accept hard copies. Ecology will provide forms and electronic data entry information.

Chapter 173-173 WAC describes the requirements for data accuracy, device installation and operation, and information reporting. It also allows a water user to petition Ecology for modification to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled “Water Measurement Device Installation and Operation Requirements”.

Schedule and Inspections

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the project location, and to inspect at reasonable times, records of water use, wells, diversions, measuring devices and associated distribution systems for compliance with water law.

Given under my hand and the seal of this office at Bellevue, Washington, this 25th day of October, 2018.

SUPERSEDING CERTIFICATE OF WATER RIGHT 3
To request ADA accommodation including materials in a format for the visually impaired, call Ecology Water Resources Program at 360-407-6872. Persons with impaired hearing may call Washington Relay Service at 711. Persons with speech disability may call TTY at 877-833-6341.
### Water Right Self-Assessment Form for Water System Plan

**Mouse-over any link for more information. Click on any link for more detailed instructions.**

<table>
<thead>
<tr>
<th>Water Right</th>
<th>Permit, Certificate, or Claim #</th>
<th>INTERTIES: Systems receiving wholesale water complete this section. Wholesaling systems must include water sold through intertie in the current and forecasted source production columns above.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. S1-00620C</td>
<td>*S1-00620C is subject to a 3.0 cubic-feet-per-second (CFS) bypass flow at the diversion, to be maintained at all times, as described in the ROE.</td>
<td></td>
</tr>
<tr>
<td>2. G1-26617(A)</td>
<td>**G1-26617(A)P is subject to WAC 173-507 and may only be used when mitigated, as described in the ROE and permit.</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Pending Water Right Applications:** Identify any water right applications that have been submitted to Ecology.

<table>
<thead>
<tr>
<th>Application Number</th>
<th>New or Change Application?</th>
<th>Date Submitted</th>
<th>Primary Qi</th>
<th>Non-Additive Qi</th>
<th>Primary Qa</th>
<th>Non-Additive Qa</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1-26617(B)</td>
<td>New</td>
<td>8/16/92</td>
<td>2,250</td>
<td>4,896</td>
<td>1,614</td>
<td></td>
</tr>
<tr>
<td>S1-28050</td>
<td>New</td>
<td>8/11/99</td>
<td>2,250</td>
<td>4,896</td>
<td>1,614</td>
<td></td>
</tr>
</tbody>
</table>

**Total: Total Qi and Qa.**

<table>
<thead>
<tr>
<th>Water Right</th>
<th>Existing Water Rights</th>
<th>Current Source Production - Most Recent Calendar</th>
<th>10-Year Forecasted Source Production (determined from WSP)</th>
<th>20-Year Forecasted Source Production (determined from WSP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>QI = Instantaneous Flow Rate Allowed (GPM or CFS)</td>
<td>Qi = Max Instantaneous Flow Rate Withdrawn (GPM or CFS)</td>
<td>Qi = Annual Volume Allowed (Acres-Feet/Year)</td>
<td>Qi = Annual Volume Allowed (Acres-Feet/Year)</td>
<td>Qi = Annual Volume Allowed (Acres-Feet/Year)</td>
</tr>
<tr>
<td>Qa = Annual Volume Withdrawn</td>
<td>Qa = Annual Volume Withdrawn</td>
<td>Qa = Annual Volume Withdrawn</td>
<td>Qa = Annual Volume Withdrawn</td>
<td>Qa = Annual Volume Withdrawn</td>
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</tbody>
</table>

**System Identifiers for Calculations:**

<table>
<thead>
<tr>
<th>Column Identifier</th>
<th>Meanings</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Qi</td>
</tr>
<tr>
<td>B</td>
<td>Qi</td>
</tr>
<tr>
<td>C</td>
<td>Qi</td>
</tr>
<tr>
<td>D</td>
<td>Qi</td>
</tr>
<tr>
<td>E</td>
<td>Qi</td>
</tr>
<tr>
<td>F</td>
<td>Qi</td>
</tr>
<tr>
<td>G</td>
<td>Qi</td>
</tr>
<tr>
<td>H</td>
<td>Qi</td>
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</tbody>
</table>

**Current Source Production - Most Recent Calendar:**

<table>
<thead>
<tr>
<th>Current</th>
<th>10-Year Forecasted</th>
<th>20-Year Forecasted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qi</td>
<td>Excess or (Deficiency) Qi</td>
<td>Excess or (Deficiency) Qi</td>
</tr>
<tr>
<td>Qa</td>
<td>Excess or (Deficiency) Qa</td>
<td>Excess or (Deficiency) Qa</td>
</tr>
</tbody>
</table>

**10-Year Forecasted:**

<table>
<thead>
<tr>
<th>Current</th>
<th>10-Year Forecasted</th>
<th>20-Year Forecasted</th>
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<td>Qa</td>
<td>Excess or (Deficiency) Qa</td>
<td>Excess or (Deficiency) Qa</td>
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**20-Year Forecasted:**

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<th>Current</th>
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</thead>
<tbody>
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<td>Qi</td>
<td>Excess or (Deficiency) Qi</td>
</tr>
<tr>
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<td>2,250</td>
<td>4,896</td>
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</table>

**Total: Total Qi and Qa.**

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<th>Meanings</th>
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<tr>
<td>B</td>
<td>Qi</td>
</tr>
<tr>
<td>C</td>
<td>Qi</td>
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<td>D</td>
<td>Qi</td>
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<td>E</td>
<td>Qi</td>
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<td>F</td>
<td>Qi</td>
</tr>
<tr>
<td>G</td>
<td>Qi</td>
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<tr>
<td>H</td>
<td>Qi</td>
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</table>

**Current Source Production - Most Recent Calendar:**

<table>
<thead>
<tr>
<th>Current</th>
<th>10-Year Forecasted</th>
<th>20-Year Forecasted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qi</td>
<td>Excess or (Deficiency) Qi</td>
<td>Excess or (Deficiency) Qi</td>
</tr>
<tr>
<td>Qa</td>
<td>Excess or (Deficiency) Qa</td>
<td>Excess or (Deficiency) Qa</td>
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**10-Year Forecasted:**

<table>
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<tr>
<th>Current</th>
<th>10-Year Forecasted</th>
<th>20-Year Forecasted</th>
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<tbody>
<tr>
<td>Qi</td>
<td>Excess or (Deficiency) Qi</td>
<td>Excess or (Deficiency) Qi</td>
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<tr>
<td>Qa</td>
<td>Excess or (Deficiency) Qa</td>
<td>Excess or (Deficiency) Qa</td>
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**20-Year Forecasted:**

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<tbody>
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</tr>
<tr>
<td>Qa</td>
<td>Excess or (Deficiency) Qa</td>
</tr>
</tbody>
</table>
Interruptible Water Rights: Identify limitations on any water rights listed above that are interruptible.

<table>
<thead>
<tr>
<th>Water Right #</th>
<th>Conditions of Interruption</th>
<th>Time Period of Interruption</th>
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<tbody>
<tr>
<td>1</td>
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</tr>
<tr>
<td>2</td>
<td></td>
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</tr>
<tr>
<td>3</td>
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Additional Comments:
2017

Volume (MG)

Production
Mitigation

Axis Title
<table>
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<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Max Month</td>
<td>Max Month Vol</td>
<td>Peak Month ADD</td>
<td>Total</td>
<td>Max Month</td>
<td>Max Month Vol</td>
<td>Peak Month ADD</td>
<td>Total</td>
<td>Max Month</td>
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<tr>
<td>Production Water</td>
<td>229.62</td>
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<td>30.56</td>
<td>0.99</td>
<td>213.46</td>
<td>July</td>
<td>23.85</td>
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<td>July</td>
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<tr>
<td>Mitigation Water</td>
<td>33.36</td>
<td>July</td>
<td>12.92</td>
<td>0.42</td>
<td>19.57</td>
<td>July</td>
<td>8.81</td>
<td>0.28</td>
<td>10.81</td>
<td>July</td>
</tr>
<tr>
<td></td>
<td>185.29</td>
<td>July</td>
<td>20.69</td>
<td>0.67</td>
<td>192.04</td>
<td>July</td>
<td>23.34</td>
<td>0.75</td>
<td>199.23</td>
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<tr>
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<td>July</td>
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<td>26.81</td>
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<td>0.50</td>
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<td></td>
<td>199.23</td>
<td>July</td>
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<td>0.80</td>
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<td>0.62</td>
<td>20.55</td>
<td>July</td>
<td>8.69</td>
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<td>67.89</td>
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<td></td>
<td>205.23</td>
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<td>21.76</td>
<td>0.70</td>
<td>17.80</td>
<td>July</td>
<td>10.14</td>
<td>0.33</td>
<td>59.15</td>
<td>July</td>
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<td></td>
<td>207.44</td>
<td>July</td>
<td>25.48</td>
<td>0.82</td>
<td>197.70</td>
<td>July</td>
<td>24.12</td>
<td>0.78</td>
<td>197.70</td>
<td>July</td>
</tr>
</tbody>
</table>
APPENDIX F

GOLDER ASSOCIATES WATER DEMAND PROJECTIONS
The City of North Bend (City) has provided Golder Associates Inc. (Golder) with the production, consumption, and mitigation data from 2009 to mid-2018 for the Water and Mitigation Demand Assessment. Golder developed a tool to forecast water system demands, mitigation requirements, and the degree of confidence in the capability of the mitigation sources of meeting the mitigation requirements over the build-out period (through 2054) within the constraints of the water rights (Golder 2019a). The tool was developed using the GoldSim simulation software platform, version 12.1.2. The tool was used to generate a water demand forecast for Grey & Osborne (G&O) to support the ongoing water system plan update. This draft technical memorandum documents the assumptions that are used to develop the water demand forecasts, lists the inputs that G&O and the City selected to define the demand forecast for use in the water system plan, and presents the results of the water demand forecast for that scenario.

1.0 NORTH BEND WATER DEMAND FORECAST INPUTS

The City supplies water to customers within its water service area (WSA). The current WSA includes part of the City and part of the urban growth area (UGA). The remainder of the City and UGA area are served by adjacent Group A water systems: the Sallal Water Association (Sallal) and the Riverbend Homesites Association. Each water purveyor has its own water rights, water sources, and distribution systems. However, there is the potential for the City to sell water wholesale to Sallal to supply water to its customers located within the City and UGA boundary. In addition to the City’s customer water demands, the distribution system leakage increases the water demands for the system; therefore, the future total water system demand for the City WSA is the sum of the customer demands, water system leakage, and wholesale water supplied to Sallal.

The water consumption for the City and UGA within Sallal is assumed to change over time as parcels are developed and additional parcels are connected to the water system. The Sallal wholesale demands for the UGA within its WSA are limited to the parcels within the City and UGA boundaries and the losses from Sallal’s distribution system leakage (DSL). The forecast period used in Golder (2019a) goes through 2054 to match the 50-year growth period used in the 2004 water demand analysis. However, the forecast period can be changed to evaluate different timeframes.
Water demands are dependent on land use, so water demand categories are used to generalize the historic water use into major categories that could be applied to the zoning categories, thereby providing a general indication of the expected water demand for future development. The water demand categories for North Bend include:

- Commercial
- Employment Park
- Agricultural Irrigation
- Multi-Family Residential
- Multi-Family Residential and Commercial
- None
- Parks, Open Space or Public Facility
- Single-Family Residential

Golder 2019b summarizes the parcel and water consumption data provided by the City. The parcel dataset includes columns with the King County present use classification, the City zoning designation (if applicable) and the King County zoning designation (if applicable) (Reynolds 2018a). The City also provided a cross-reference table of the parcels within each water service area (Reynolds 2018b). A water demand category was assigned to each present use classification identified by King County (Table 1). Table 2 identifies the water demand category assumed for each zoning district and the maximum number of dwelling units within each zoning district. The parcel water demands are aggregated by water demand category.

The following options influence the water system demand projections:

- Geographic extent of the parcels included in the demand forecast
- Parcel development schedule and constraints
- Water conservation
- Distribution system leakage

Table 3 identifies the options and inputs used to define the demand forecast for the water system plan (Scenario A). Table 4 presents a summary of the inputs used in the draft Golder (2019a) analysis. Attachment A includes the Executive Summary from the Golder (2019a) draft report. Additional details about the scenarios used in the draft Golder (2019a) analysis can be found therein.

2.0 NORTH BEND WATER DEMAND FORECAST RESULTS

The inputs identified for the water system plan scenario (Scenario A) are described in Table 3. The tool was run using a Monte Carlo analysis for 1,500 realizations. Table 5 presents the mean annual water demand from 2020 through 2050 by water demand category for the City’s WSA and Sallal’s wholesale water demand. These water demands include the assumed DSL of 22.4% for the City WSA water demands and 0% DSL for the Sallal wholesale water demands in the total water demands. The mean results can be added to estimate the total water demands. The estimated annual mean water demands for the City WSA increase from approximately 252 million
gallons per year (MGal/year) in 2020 to 690 MGal/year in 2050. The estimated annual mean wholesale water demands from Sallal increase from 87 MGal/year in 2021 to 146 MGal/year in 2050. The estimated annual mean water demands for the City WSA and Sallal wholesale water increase from approximately 252 MGal/year in 2020 to 836 MGal/year in 2050.

Golder Associates Inc.

Tables
Table 1: Parcel Present Land Use and Assigned Water Demand Category
Table 2: Parcel Zoning and Assigned Water Demand Category
Table 3: Water Demand Forecasting Scenario Inputs
Table 4: Water Demand Forecasting Scenarios Included in the Draft Water and Mitigation Forecast Report (Golder 2019a)
Table 5: City Water Service Area and Wholesale Water to Sallal Water Demand Forecast, Scenario A, 2020 to 2050

Attachment
Attachment A: Executive Summary from Draft City of North Bend Water Supply and Mitigation Forecast (Golder 2019a)
3.0 REFERENCES


Tables
Table 1: Parcel Present Land Use and Assigned Water Demand Category

<table>
<thead>
<tr>
<th>Parcel Present Land Use</th>
<th>Water Demand Category¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unknown</td>
<td>None</td>
</tr>
<tr>
<td>Single family (residential use / zone)</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>Duplex</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>Triplex</td>
<td>Multi-Family Residential</td>
</tr>
<tr>
<td>4-plex</td>
<td>Multi-Family Residential</td>
</tr>
<tr>
<td>Single family (C/I Zone)</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>Houseboat</td>
<td>Not Applicable</td>
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<tr>
<td>Mobile home</td>
<td>Single-Family Residential</td>
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<tr>
<td>Single family (C/I use)</td>
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</tr>
<tr>
<td>Apartment</td>
<td>Multi-Family Residential</td>
</tr>
<tr>
<td>Apartment (Mixed use)</td>
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</tr>
<tr>
<td>Apartment (Co-op)</td>
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</tr>
<tr>
<td>Apartment (Subsidized)</td>
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</tr>
<tr>
<td>Condominium (Residential)</td>
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<tr>
<td>Condominium (Mixed use)</td>
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<tr>
<td>Townhouse plat</td>
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<td>Mobile home park</td>
<td>Multi-Family Residential</td>
</tr>
<tr>
<td>Condominium (Mobile Home Park)</td>
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</tr>
<tr>
<td>Retirement facility</td>
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</tr>
<tr>
<td>Hotel or motel</td>
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<tr>
<td>Rehabilitation center</td>
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<td>Residence Hall or Dorm</td>
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</tr>
<tr>
<td>Group home</td>
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<tr>
<td>Resort / Lodge / Retreat</td>
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<tr>
<td>Nursing home</td>
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<td>Shopping Center (Neighborhood)</td>
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<tr>
<td>Shopping Center (Community)</td>
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<tr>
<td>Shopping Center (Regional)</td>
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<td>Shopping Center (Major retail)</td>
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<tr>
<td>Shopping Center (Specialty)</td>
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<tr>
<td>Retail (Line / Strip)</td>
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<tr>
<td>Retail store</td>
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<td>Retail (Big box)</td>
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<td>Retail (Discount)</td>
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<td>Office building</td>
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<tr>
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<td>Medical or Dental office</td>
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<tr>
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<tr>
<td>Farm</td>
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</tr>
<tr>
<td>Greenhouse / Nursery / Horticulture service</td>
<td>Agricultural Irrigation</td>
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<tr>
<td>Mining / Quarry / Ore processing</td>
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</tr>
<tr>
<td>Bowling Alley</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Campground</td>
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<tr>
<td>Driving Range</td>
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<tr>
<td>Golf Course</td>
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</tr>
<tr>
<td>Health Club</td>
<td>Commercial</td>
</tr>
<tr>
<td>Marina</td>
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</tr>
<tr>
<td>Movie Theatre</td>
<td>Commercial</td>
</tr>
<tr>
<td>Park, Public (Zoo \ Arboretum)</td>
<td>Parks / Open Space or Public Facilities</td>
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<tr>
<td>Park, Private (Amusement Center)</td>
<td>Not Applicable</td>
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</table>
### Table 1: Parcel Present Land Use and Assigned Water Demand Category

<table>
<thead>
<tr>
<th>Parcel Present Land Use</th>
<th>Water Demand Category¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ski Area</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Skating Rink (Ice / Roller)</td>
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<tr>
<td>Sport Facility</td>
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</tr>
<tr>
<td>Governmental Service, Art Gallery/Museum/Soc Srvc</td>
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</tr>
<tr>
<td>Parking (Assoc)</td>
<td>Commercial</td>
</tr>
<tr>
<td>Auditorium / Assembly Building</td>
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</tr>
<tr>
<td>Auto Showroom and Lot</td>
<td>Commercial</td>
</tr>
<tr>
<td>Bank</td>
<td>Commercial</td>
</tr>
<tr>
<td>Car Wash</td>
<td>Commercial</td>
</tr>
<tr>
<td>Church / Welfare / Religious Services</td>
<td>Commercial</td>
</tr>
<tr>
<td>Club</td>
<td>Commercial</td>
</tr>
<tr>
<td>Convenience Store without Gas</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Convenience Store with Gas</td>
<td>Commercial</td>
</tr>
<tr>
<td>Restaurant (Fast Food)</td>
<td>Commercial</td>
</tr>
<tr>
<td>Governmental Service</td>
<td>Parks / Open Space or Public Facilities</td>
</tr>
<tr>
<td>Hospital</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Mortuary / Cemetery / Crematory</td>
<td>Parks / Open Space or Public Facilities</td>
</tr>
<tr>
<td>Parking (Commercial Lot)</td>
<td>Commercial</td>
</tr>
<tr>
<td>Parking (Garage)</td>
<td>Not Applicable</td>
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<tr>
<td>Restaurant / Lounge</td>
<td>Commercial</td>
</tr>
<tr>
<td>School (Public)</td>
<td>Parks / Open Space or Public Facilities</td>
</tr>
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<td>School (Private)</td>
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<tr>
<td>Service Station</td>
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<tr>
<td>Tavern / Lounge</td>
<td>Commercial</td>
</tr>
<tr>
<td>Post Office / Post Service</td>
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<tr>
<td>Vet / Animal Control Service</td>
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<tr>
<td>Grocery Store</td>
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</tr>
<tr>
<td>Daycare Center</td>
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</tr>
<tr>
<td>Mini Lube</td>
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</tr>
<tr>
<td>Warehouse</td>
<td>Employment Park</td>
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<tr>
<td>High Tech / Tech Flex</td>
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</tr>
<tr>
<td>Industrial Park</td>
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<td>Industrial (General Purpose)</td>
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<td>Industrial (Heavy)</td>
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<td>Industrial (Light)</td>
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<td>Air Terminal and Hangers</td>
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<td>Mini Warehouse</td>
<td>Employment Park</td>
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<tr>
<td>Terminal (Rail)</td>
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<tr>
<td>Terminal (Marine / Commercial Fishery)</td>
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<tr>
<td>Terminal (Grain)</td>
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</tr>
<tr>
<td>Terminal (Auto / Bus /Other)</td>
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</tr>
<tr>
<td>Utility, Public</td>
<td>Parks / Open Space or Public Facilities</td>
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<tr>
<td>Utility, Private (Radio / TV)</td>
<td>Commercial</td>
</tr>
<tr>
<td>Terminal (Marine)</td>
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</tr>
<tr>
<td>Historic Property (Residence)</td>
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<tr>
<td>Historic Property (Office)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Historic Property (Retail)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Historic Property (Eat / Drink)</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
Table 1: Parcel Present Land Use and Assigned Water Demand Category

<table>
<thead>
<tr>
<th>Parcel Present Land Use</th>
<th>Water Demand Category¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Historic Property (Loft / Warehouse)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Historic Property (Park / Billboard)</td>
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</tr>
<tr>
<td>Historic Property (Transient Facility)</td>
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</tr>
<tr>
<td>Historic Property (Recreation / Entertainment)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Historic Property (Misc)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Historic Property (Vacant Land)</td>
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</tr>
<tr>
<td>Vacant (Single-family)</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>Vacant (Multi-family)</td>
<td>Multi-Family Residential</td>
</tr>
<tr>
<td>Vacant (Commercial)</td>
<td>Commercial</td>
</tr>
<tr>
<td>Vacant (Industrial)</td>
<td>Employment Park</td>
</tr>
<tr>
<td>Reforestation (RCW 84.28)</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Forest Land (Class - RCW 84.33)</td>
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<tr>
<td>Forest Land (Desig-RCW84.33)</td>
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</tr>
<tr>
<td>Open Space (Curr Use-RCW84.34)</td>
<td>Parks / Open Space or Public Facilities</td>
</tr>
<tr>
<td>Open Space(Agric-RCW 84.34)</td>
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<tr>
<td>Open Space Timber Land / Greenbelt</td>
<td>Parks / Open Space or Public Facilities</td>
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<tr>
<td>Easement</td>
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<tr>
<td>Reserve / Wilderness Area</td>
<td>Parks / Open Space or Public Facilities</td>
</tr>
<tr>
<td>Right of Way / Utility, Road</td>
<td>Parks / Open Space or Public Facilities</td>
</tr>
<tr>
<td>River / Creek / Stream</td>
<td>None</td>
</tr>
<tr>
<td>Tideland, 1st Class</td>
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<tr>
<td>Tideland, 2nd Class</td>
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<tr>
<td>Transferable Development Rights</td>
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<tr>
<td>Water Body, Fresh</td>
<td>None</td>
</tr>
<tr>
<td>Shell Structure</td>
<td>Commercial</td>
</tr>
<tr>
<td>Bed and Breakfast</td>
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</tr>
<tr>
<td>Rooming House</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Fraternity / Sorority House</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

Note:

1. Current land uses that are not within the study area have been identified as Not Applicable.
### Table 2: Parcel Zoning and Assigned Water Demand Category

<table>
<thead>
<tr>
<th>Zoning Entity</th>
<th>Zoning Abbreviation</th>
<th>Zoning District Title</th>
<th>Number of Dwelling Units per Acre</th>
<th>Water Demand Category¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of North Bend</td>
<td>CLDR</td>
<td>Constrained Low Density Residential</td>
<td>4</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>CR</td>
<td>Cottage Residential</td>
<td>6 to 10</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>DC</td>
<td>Downtown Commercial</td>
<td>0</td>
<td>Commercial</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>EP-1</td>
<td>Employment Park - 1</td>
<td>0</td>
<td>Employment Park</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>EP-2</td>
<td>Employment Park - 2</td>
<td>0</td>
<td>Employment Park</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>HDR</td>
<td>High Density Residential</td>
<td>9 to 10</td>
<td>Multi-Family Residential</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>HDR1</td>
<td>High Density Residential With Density Restrictions</td>
<td>9 to 18</td>
<td>Multi-Family Residential</td>
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<tr>
<td>City of North Bend</td>
<td>IC</td>
<td>Interchange Commercial</td>
<td>0</td>
<td>Commercial</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>IMU</td>
<td>Interchange Mixed Use</td>
<td>21</td>
<td>Multi-Family Residential and Commercial</td>
</tr>
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<td>City of North Bend</td>
<td>LDR</td>
<td>Low Density Residential</td>
<td>4</td>
<td>Single-Family Residential</td>
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<tr>
<td>City of North Bend</td>
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<td>0</td>
<td>Commercial</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>POSPF</td>
<td>Parks / Open Space or Public Facilities</td>
<td>0</td>
<td>Parks / Open Space or Public Facilities</td>
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<td>City of North Bend</td>
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<td>Right of way area</td>
<td>0</td>
<td>Vacant</td>
</tr>
<tr>
<td>City of North Bend</td>
<td>RR</td>
<td>Un-zoned areas</td>
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<td>King County</td>
<td>A35</td>
<td>Agricultural 35 acre minimum lot size</td>
<td>0.03</td>
<td>Agricultural Irrigation</td>
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<tr>
<td>King County</td>
<td>CR</td>
<td>Cottage Residential, 6-10 DU/1 acre</td>
<td>6 to 10</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>King County</td>
<td>DC</td>
<td>Downtown Commercial</td>
<td>0</td>
<td>Commercial</td>
</tr>
<tr>
<td>King County</td>
<td>EP-1</td>
<td>Employment Park - 1</td>
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<td>Employment Park</td>
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<tr>
<td>King County</td>
<td>EP-2</td>
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<td>King County</td>
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<td>Forest</td>
<td>0</td>
<td>Vacant</td>
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<tr>
<td>King County</td>
<td>HDR</td>
<td>High Density Residential, 9-18 DU/1 acre</td>
<td>9 to 18</td>
<td>Multi-Family Residential</td>
</tr>
<tr>
<td>King County</td>
<td>IC</td>
<td>Interchange Commercial</td>
<td>0</td>
<td>Commercial</td>
</tr>
<tr>
<td>King County</td>
<td>IMU</td>
<td>Interchange Mixed Use</td>
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<td>Low Density Residential, 4 DU/1 acre</td>
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<td>Commercial</td>
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<td>King County</td>
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<td>Neighborhood Business</td>
<td>0</td>
<td>Commercial</td>
</tr>
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<td>Open Space</td>
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<td>Vacant</td>
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<td>King County</td>
<td>OS3</td>
<td>Open Space</td>
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<td>King County</td>
<td>POSPF</td>
<td>Parks / Open Space or Public Facilities</td>
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<td>Parks / Open Space or Public Facilities</td>
</tr>
<tr>
<td>King County</td>
<td>RA10</td>
<td>Rural Area, 1 DU/10 acres</td>
<td>0.10</td>
<td>Single-Family Residential</td>
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<tr>
<td>King County</td>
<td>RA2.5</td>
<td>Rural Area, 1 DU/5 acres</td>
<td>0.20</td>
<td>Single-Family Residential</td>
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<tr>
<td>King County</td>
<td>RA5</td>
<td>Rural Area, 1 DU/5 acres</td>
<td>0.20</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>King County</td>
<td>RASP</td>
<td>Rural Area, 1 DU/5 acres</td>
<td>0.20</td>
<td>Single-Family Residential</td>
</tr>
<tr>
<td>King County</td>
<td>UR</td>
<td>Urban Reserve, 1 DU/5 acres</td>
<td>0.20</td>
<td>Single-Family Residential</td>
</tr>
</tbody>
</table>

**Note:**
1. Exceptions to the overall zoning categorization water demand assignments include parcels with a present land use of Open Space Timber Land / Greenbelt, Reserve / Wilderness Area, River / Stream / Creek or Water Body, Fresh. If the parcels with these present land use designations do not have a current water connection, then they are assumed to have no water use in the future because they would be unirrigated Open Space.
### Table 3: Water Demand Forecasting Scenario Inputs

#### GEOGRAPHIC EXTENT OF PARCELS INCLUDED IN WATER DEMANDS

<table>
<thead>
<tr>
<th>Option</th>
<th>Scenario A</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of North Bend Water Service Area (WSA)</td>
<td>Include? Yes</td>
</tr>
<tr>
<td>Urban Growth Area (Potential Annexation Area)</td>
<td>Include? Yes</td>
</tr>
<tr>
<td>Unincorporated King County</td>
<td>Include? Yes</td>
</tr>
<tr>
<td>City of Snoqualmie</td>
<td>Include? No</td>
</tr>
<tr>
<td>Sallal Water Service Area (Wholesale Water from North Bend)</td>
<td>City of North Bend Include? Yes</td>
</tr>
<tr>
<td>Urban Growth Area (Potential Annexation Area)</td>
<td>Include? Yes</td>
</tr>
<tr>
<td>Parcels with an alternative water source</td>
<td>Include? No</td>
</tr>
</tbody>
</table>

- Parcels within the geographic areas defined above which have an alternative water source (e.g. water right or permit exempt well) are connected to the water system

#### PARCEL DEVELOPMENT

<table>
<thead>
<tr>
<th>Option</th>
<th>Scenario A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development Period End Year</td>
<td>Year to end development: 2050</td>
</tr>
<tr>
<td>Planned Development Schedule</td>
<td>Include? Yes</td>
</tr>
<tr>
<td>Transition - Development moratorium schedule</td>
<td>The City assumed that there would be a moratorium on residential development (single-family, multi-family, and multi-family commercial) from January 1, 2018 through December 31, 2021 excluding the already planned projects.</td>
</tr>
<tr>
<td>No, then please define the start and end dates for development moratoriums for each water demand category.</td>
<td>No moratorium</td>
</tr>
</tbody>
</table>

#### WATER CONSERVATION

<table>
<thead>
<tr>
<th>Option</th>
<th>Scenario A</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Bend WSA Conservation</td>
<td>Indoor Water Conservation Include? No</td>
</tr>
<tr>
<td>Outdoor Water Conservation</td>
<td>Include? No</td>
</tr>
<tr>
<td>Indoor Water Conservation</td>
<td>Include? No</td>
</tr>
<tr>
<td>Sallal WSA Conservation</td>
<td>Indoor Water Conservation Include? No</td>
</tr>
<tr>
<td>Outdoor Water Conservation</td>
<td>Include? No</td>
</tr>
</tbody>
</table>

- This will be excluded if Sallal wholesale water is included.

#### DISTRIBUTION SYSTEM LEAKAGE

<table>
<thead>
<tr>
<th>Option</th>
<th>Scenario A</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of North Bend WSA</td>
<td>The distribution system leakage percent to apply to the customer water demands Include? Yes</td>
</tr>
<tr>
<td></td>
<td>If included, should the distribution system leakage be based on a random selection from the historical distribution or a specific assumed percentage each year? Specific percentage</td>
</tr>
<tr>
<td></td>
<td>If included with a specific percentage each year, then provide the percentage to use for each year from 2020 through the end of the simulation period. 22.4%</td>
</tr>
<tr>
<td>Sallal WSA</td>
<td>The distribution system leakage percent to apply to the customer water demands Include? No</td>
</tr>
<tr>
<td></td>
<td>If included, should the distribution system leakage be based on a random selection from the historical distribution or a specific assumed percentage each year? No</td>
</tr>
<tr>
<td></td>
<td>If included with a specific percentage each year, then provide the percentage to use for each year from 2020 through the end of the simulation period. No</td>
</tr>
</tbody>
</table>

Note:

1. There is one parcel that is assigned to the City of Snoqualmie jurisdiction in the City’s WSA. This parcel is currently not connected to the City’s WSA and has a future zoning of Open Space, so excluding it from the water demand forecast will not impact the water results.
<table>
<thead>
<tr>
<th>Scenario</th>
<th>City of North Bend Water Service Area</th>
<th>Sallal Water Service Area (Wholesale Water from North Bend)</th>
<th>Water Conservation</th>
<th>Distribution System Leakage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenarios 1, 2, 3, 10</td>
<td>Included with all permit exempt well parcels</td>
<td>Include City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>No water conservation</td>
<td>Stochastic distributions</td>
</tr>
<tr>
<td>Scenario 4</td>
<td>Included with only permit exempt well parcels that are developed</td>
<td>Include City and PAA with only permit exempt well parcels that are developed, starting 1/1/2020, with supplying demand year-round.</td>
<td>No water conservation</td>
<td>Stochastic distributions</td>
</tr>
<tr>
<td>Scenario 5</td>
<td>Included with all permit exempt well parcels</td>
<td>Excluded</td>
<td>No water conservation</td>
<td>Stochastic distributions</td>
</tr>
<tr>
<td>Scenario 6</td>
<td>Included with all permit exempt well parcels</td>
<td>Include City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>1% reduction in annual indoor water use; 10% reduction in outdoor water use in Aug 1 to Oct 31</td>
<td>User-defined time series for North Bend (down to 8% DSL by 2025); stochastic distribution for Sallal</td>
</tr>
<tr>
<td>Scenario 7</td>
<td>Included with all permit exempt well parcels</td>
<td>Include City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>1% reduction in annual indoor water use; 10% reduction in outdoor water use in Aug 1 to Oct 31</td>
<td>Stochastic distributions</td>
</tr>
<tr>
<td>Scenario 8</td>
<td>Included with all permit exempt well parcels</td>
<td>Excluded</td>
<td>No water conservation</td>
<td>User-defined time series for North Bend (down to 8% DSL by 2025)</td>
</tr>
<tr>
<td>Scenario 9</td>
<td>Included with all permit exempt well parcels</td>
<td>Excluded</td>
<td>1% reduction in annual indoor water use; 10% reduction in outdoor water use in Aug 1 to Oct 31</td>
<td>Stochastic distributions</td>
</tr>
<tr>
<td>Scenario 11</td>
<td>Included with all permit exempt well parcels</td>
<td>Include City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying 100% demand Jan - June, and Nov - December, and 50% demand July - Oct.</td>
<td>No water conservation</td>
<td>Stochastic distributions</td>
</tr>
<tr>
<td>Scenario 12</td>
<td>Included with only permit exempt well parcels that are developed</td>
<td>Include City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>1% reduction in annual indoor water use; 10% reduction in outdoor water use in Aug 1 to Oct 31</td>
<td>User-defined time series for North Bend (down to 8% DSL by 2025)</td>
</tr>
</tbody>
</table>
Table 5: City Water Service Area and Wholesale Water to Sallal Water Demand Forecast, Scenario A, 2020 to 2050

| Year | City Water Service Area | Single-Family Residential | Multi-Family Residential | Multi-Family Residential and Commercial | Commercial | Employment Park | Parks / Open Space or Public Facilities | Agricultural Irrigation | Sallal Wholesale |
|------|------------------------|---------------------------|-------------------------|----------------------------------------|------------|----------------|----------------------------------------|-----------------------|----------------|----------------|
| 2020 | 252.18                 | 128.55                    | 41.17                   | 0.00                                   | 55.54      | 6.48           | 20.44                                 | 0.00                  | 0.00          |
| 2021 | 272.85                 | 131.65                    | 53.35                   | 13.06                                  | 47.76      | 6.53           | 20.50                                 | 0.00                  | 87.21         |
| 2022 | 276.22                 | 135.74                    | 53.55                   | 12.83                                  | 47.45      | 6.45           | 20.20                                 | 0.00                  | 89.87         |
| 2023 | 284.94                 | 138.84                    | 53.90                   | 14.08                                  | 49.28      | 6.82           | 21.60                                 | 0.42                  | 90.92         |
| 2024 | 296.88                 | 142.23                    | 54.38                   | 15.71                                  | 51.84      | 7.34           | 23.98                                 | 1.40                  | 92.56         |
| 2025 | 311.03                 | 147.43                    | 54.75                   | 17.51                                  | 54.61      | 7.95           | 26.47                                 | 2.31                  | 94.50         |
| 2026 | 324.90                 | 151.85                    | 55.01                   | 19.36                                  | 57.43      | 8.48           | 29.05                                 | 3.72                  | 96.16         |
| 2027 | 337.19                 | 155.88                    | 55.49                   | 21.04                                  | 60.42      | 9.28           | 31.33                                 | 4.26                  | 98.09         |
| 2028 | 351.20                 | 160.79                    | 55.58                   | 22.46                                  | 63.37      | 9.78           | 33.51                                 | 5.71                  | 99.91         |
| 2029 | 365.68                 | 165.39                    | 55.76                   | 24.51                                  | 66.49      | 10.45          | 36.60                                 | 6.48                  | 101.71        |
| 2030 | 379.86                 | 169.42                    | 56.36                   | 26.41                                  | 69.68      | 11.09          | 39.46                                 | 7.44                  | 103.85        |
| 2031 | 394.18                 | 174.92                    | 56.45                   | 28.28                                  | 72.66      | 11.61          | 41.98                                 | 8.28                  | 105.73        |
| 2032 | 409.54                 | 179.58                    | 56.60                   | 30.70                                  | 75.88      | 12.38          | 44.86                                 | 9.54                  | 108.06        |
| 2033 | 422.62                 | 183.45                    | 56.95                   | 32.84                                  | 78.63      | 12.99          | 46.69                                 | 11.07                 | 109.41        |
| 2034 | 437.10                 | 188.54                    | 57.25                   | 34.22                                  | 82.36      | 13.77          | 49.33                                 | 11.63                 | 111.48        |
| 2035 | 455.63                 | 195.22                    | 57.50                   | 37.17                                  | 85.93      | 14.55          | 52.33                                 | 12.93                 | 113.78        |
| 2036 | 469.08                 | 199.83                    | 57.87                   | 38.81                                  | 88.14      | 14.83          | 54.95                                 | 14.65                 | 115.62        |
| 2037 | 482.51                 | 203.20                    | 58.18                   | 41.20                                  | 91.73      | 15.80          | 56.99                                 | 15.41                 | 117.73        |
| 2038 | 500.37                 | 209.81                    | 58.64                   | 43.70                                  | 95.17      | 16.29          | 60.47                                 | 16.29                 | 119.86        |
| 2039 | 516.24                 | 215.02                    | 58.69                   | 45.81                                  | 98.27      | 16.92          | 63.46                                 | 18.07                 | 122.28        |
| 2040 | 531.98                 | 220.98                    | 58.97                   | 47.70                                  | 102.09     | 17.77          | 65.82                                 | 18.65                 | 124.41        |
| 2041 | 549.03                 | 225.59                    | 59.60                   | 50.51                                  | 105.58     | 18.44          | 69.42                                 | 19.89                 | 126.70        |
| 2042 | 566.21                 | 230.91                    | 59.92                   | 52.59                                  | 108.83     | 19.45          | 72.25                                 | 21.26                 | 128.76        |
| 2043 | 583.63                 | 236.76                    | 60.17                   | 54.64                                  | 113.13     | 20.32          | 75.80                                 | 22.81                 | 131.13        |
| 2044 | 601.91                 | 242.87                    | 60.34                   | 57.23                                  | 116.78     | 21.15          | 79.74                                 | 23.80                 | 133.92        |
| 2045 | 619.02                 | 248.45                    | 61.10                   | 59.64                                  | 120.71     | 21.77          | 82.06                                 | 25.29                 | 135.91        |
| 2046 | 637.19                 | 255.05                    | 61.30                   | 61.93                                  | 124.37     | 22.83          | 85.25                                 | 26.46                 | 138.58        |
| 2047 | 657.58                 | 261.80                    | 61.77                   | 64.83                                  | 129.13     | 23.55          | 89.08                                 | 27.42                 | 141.05        |
| 2048 | 677.92                 | 268.03                    | 62.36                   | 67.44                                  | 133.89     | 24.54          | 92.68                                 | 28.98                 | 143.94        |
| 2049 | 691.33                 | 273.06                    | 62.95                   | 69.31                                  | 136.70     | 24.95          | 94.73                                 | 29.63                 | 145.44        |
| 2050 | 689.79                 | 271.55                    | 62.29                   | 69.38                                  | 136.63     | 24.83          | 95.58                                 | 29.53                 | 145.53        |

Note: 1. Results are based on 1500 realizations and include distribution system leakage of 22.4% for the City WSA water demands and 0% for the Sallal Wholesale water demands.
Executive Summary from Draft City of North Bend Water Supply and Mitigation Forecast (Golder 2019a)
Executive Summary

The City of North Bend (City) is updating its water system plan and is required to update its mitigation operations plan which includes an evaluation of the City’s future water demand and the capacity of its mitigation sources to meet forecast mitigation demands. The City supplies water to its customers within its water service area (WSA) from two water production sources, Mt Si Spring and Centennial Well (NB-3). One of the water production sources, the Centennial Well, used under a water permit (G1-26617(A)), is junior to the minimum instream flow (MISF) requirements for the Snoqualmie and Snohomish Rivers (Ecology 2007). The Report of Examination (ROE) for this water permit included the results of modeling and analysis activities and specified the method for calculating the daily mitigation requirement (Ecology 2007). These analyses provided an estimate of the City’s projected water demand through 2054, a worst-case scenario for the City’s maximum daily mitigation requirement, and an analysis of the City’s ability to meet the maximum daily mitigation requirement with two proposed (and subsequently permitted) mitigation sources (Hobo Springs and Sallal Wells).

Over the past 10 years, the City has operated its water and mitigation system daily, collecting data on the water production/mitigation sources, streamflows, mitigation demand, and mitigation supplied. The availability of additional data, including a historically low flow water year (2015), provides an opportunity to update the forecasted water system demand, mitigation requirement and mitigation supply available using an approach that is more consistent with the City’s day-to-day operations. The City has also been operating with only one of the two mitigation sources, Hobo Springs. Therefore, the City is interested in understanding its current capacity to meet its mitigation obligations under a range of future scenarios.

Included as part of this report is a modeling tool that has been developed and used to forecast water system demands, mitigation requirements, and the degree of confidence in the capability of the mitigation sources to meet the mitigation requirements over the build-out period (through 2054). Using this tool, twelve scenarios were analyzed spanning combinations of the water demand, mitigation requirements and mitigation source/supply options (Table ES-1). Scenario 3 includes the assumptions consistent with the ROE. Scenarios 1, 2 and 4 through 11 were run using a deterministic simplification to compare alternative water management strategies and assumptions. These simplified scenarios were used to define a potential water management strategy, Scenario 12. Uncertainties such as climate and development schedules were incorporated using Monte Carlo simulation methods for Scenarios 1, 2 and 12 to better understand the likelihood of future conditions.

Deterministic Results

Eleven scenarios were run deterministically to evaluate analysis assumptions on the water demand projections from 2020 through 2054, the ability to supply the water demand, and the availability of mitigation sources to offset net stream depletion during times when MISF are not met (Figure ES-1).

**Water System Demand:** Scenarios 1, 2 and 3 indicate that the total water demand could range from 339 million gallons per year (MGal/year) in 2020 to 1031 MGal/year by 2054. This is comparable but slightly lower than the forecast water demand in the ROE, which used 2004 zoning, 2004 development, and a per capita and square footage approach for estimating current and future water demands (Ecology 2007). Findings from the scenarios indicate that distribution system leakage (DSL), parcels with water supplies from alternative sources (e.g. exempt wells), water conservation measures, and extent of the Urban Growth Area (UGA) in Sallal’s WSA supplied by the City are important considerations in overall water system demand.
**Water Supply:** Comparing the water system demand to the available water supply from Mt Si Spring and Centennial Well indicates:

- Mt Si Spring is unable to supply the City with water during certain low-flow conditions because flows at Mt Si Spring are below required by-pass rates.
- The City has adequate water supply until 2040 for projected water demand of its WSA and most of the UGA if Sallal supplies some of the water to the UGA in its WSA starting in 2034.
- The City could have one year less of sufficient supply available (until 2039) under the driest (lowest flow) climate conditions.
- Reducing summer wholesale water demands from Sallal (Scenario 11) does not change the City’s ability to meet its WSA demands.
- DSL reductions create the most significant decreases in water system demand (Scenarios 6 and 8). Achieving an 8 percent DSL could provide adequate water supply for the City through 2054, with Sallal supplying some of its WSA in the UGA beginning in 2040.
- Water conservation measures (Scenarios 7 and 9) which reduce indoor water use by 1 percent annually and outdoor water use by 10 percent during late summer and early fall would result in the City having adequate water supply for its WSA through 2048, with Sallal supplying some of its WSA in the UGA beginning in 2036.

**Mitigation Supply:** The mitigation requirement is influenced by the water use from Centennial Well, so reducing the water demand from this source results in reducing the mitigation requirement as shown in scenarios with reduced DSL, water conservation and the smaller service area supplied. Continuing to manage Mt Si Spring and Centennial Well using the current management strategy by strategically timing withdrawals from the sources based on source availability and climate conditions (Scenario 1) rather than using a target monthly rate (Scenario 3) also results in less mitigation volume required. Comparing the mitigation requirement to the mitigation supply indicates:

- Hobo Springs and Sallal Wells could supply the required mitigation water through 2052 under dry climate conditions (Scenario 1). Adding the CGC water right as an additional mitigation source (Scenario 10) would not add additional supply years compared to Scenario 1.
- Mitigation supply from Hobo Springs and Sallal Wells would only be sufficient through 2036 under the driest (lowest flow) climate conditions (Scenario 2) and through 2040 under the target Mt Si Spring rate operating conditions as assumed in the ROE which did not minimize use of the Centennial Well during low river flows (Scenario 3).
- Reducing the water demand by more-realistically accounting for alternative water sources, reducing water supplied to Sallal during the summer, reducing DSL and having a water conservation program results in the City having sufficient mitigation supply through 2054, if the Sallal water demands and mitigation source are included (Scenarios 4, 11, 6, and 7).
- If the Sallal wholesale water demands are not supplied by the City and the City does not have access to Sallal Wells as a mitigation source, then the City’s mitigation supply from Hobo Springs and CGC water right would only be sufficient through 2025 (Scenarios 5, 8, and 9).
Monte Carlo Results

Based on projected water demand with demand reduction measures (Scenario 12) Hobo Springs, Sallal Wells and CGC water right can at least supply mitigation water through 2054 (95th percentile) (Figure ES-2). This estimate is based on less conservative calculations than the Golder (2007) analysis but is indicative of the historic climate record and daily operational strategies that are implemented by the City.

The strategies used in the tool have not been optimized. Therefore, optimization of the timing and management rules could improve overall water system performance and available mitigation supply forecasts beyond what has been reported here.

Future Applications

The water and mitigation demand forecast tool is a dynamic model that can be used by the City to update water demand calculations as new proposed projects are considered to support ongoing planning and water management activities. The tool can be used to answer the following types of questions:

- What is the likelihood that the City could supply water to a proposed development in the study area?
- When are additional mitigation supplies needed and how much mitigation water is needed? What months of the year is the mitigation water needed?

The list above provides an idea about the types of applications for the tool to support future decision-making related to the City’s water supply and mitigation sources.
<table>
<thead>
<tr>
<th>Scenario</th>
<th>City of North Bend Water Service Area</th>
<th>Sallal Water Service Area (Wholesale Water from North Bend)</th>
<th>Distribution System Leakage</th>
<th>Water Conservation</th>
<th>Water System Operation Strategy</th>
<th>Climate Option for Flows (Mt Si Spring, Hobo Springs, Streamflows)</th>
<th>Mitigation Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario 1</td>
<td>Included with all permit exempt well parcels</td>
<td>Induced City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>Stochastic distributions</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs and Sallal Wells</td>
</tr>
<tr>
<td>Scenario 2</td>
<td>Included with all permit exempt well parcels</td>
<td>Induced City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>Stochastic distributions</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>One-Week Running Average of Lowest Flows with 1992 Streamflows</td>
<td>Hobo Springs and Sallal Wells</td>
</tr>
<tr>
<td>Scenario 3</td>
<td>Included with all permit exempt well parcels</td>
<td>Induced City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>Stochastic distributions</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Target monthly Mt Si rate, Mt Si Bypass 3.05 cft</td>
<td>Hobo Springs and Sallal Wells</td>
</tr>
<tr>
<td>Scenario 4</td>
<td>Included with only permit exempt well parcels that are developed</td>
<td>Include City and PAA with only permit exempt well parcels that are developed, starting 1/1/2020, with supplying demand year-round.</td>
<td>Stochastic distributions</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs and Sallal Wells</td>
</tr>
<tr>
<td>Scenario 5</td>
<td>Included with all permit exempt well parcels</td>
<td>Excluded</td>
<td>Stochastic distributions</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs and Cascade Golf Course with Pond</td>
</tr>
<tr>
<td>Scenario 6</td>
<td>Included with all permit exempt well parcels</td>
<td>Induced City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>User-defined time series for North Bend (down to 6% DSL by 2025); stochastic distribution for Sallal</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs, Sallal Wells and Cascade Golf Course with Pond</td>
</tr>
<tr>
<td>Scenario 7</td>
<td>Included with all permit exempt well parcels</td>
<td>Induced City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>Stochastic distributions</td>
<td>1% reduction in annual indoor water use, 10% reduction in outdoor water use in Aug 1 to Oct 31</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs, Sallal Wells and Cascade Golf Course with Pond</td>
</tr>
<tr>
<td>Scenario 8</td>
<td>Included with all permit exempt well parcels</td>
<td>Excluded</td>
<td>User-defined time series for North Bend (down to 6% DSL by 2025); stochastic distribution for Sallal</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs and Cascade Golf Course with Pond</td>
</tr>
<tr>
<td>Scenario 9</td>
<td>Included with all permit exempt well parcels</td>
<td>Excluded</td>
<td>Stochastic distributions</td>
<td>1% reduction in annual indoor water use, 10% reduction in outdoor water use in Aug 1 to Oct 31</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs and Cascade Golf Course with Pond</td>
</tr>
<tr>
<td>Scenario 10</td>
<td>Included with all permit exempt well parcels</td>
<td>Induced City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>Stochastic distributions</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs, Sallal Wells and Cascade Golf Course with Pond</td>
</tr>
<tr>
<td>Scenario 11</td>
<td>Included with all permit exempt well parcels</td>
<td>Induced City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>Stochastic distributions</td>
<td>No water conservation</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Representative dry climate year (2015)</td>
<td>Hobo Springs, Sallal Wells and Cascade Golf Course with Pond</td>
</tr>
<tr>
<td>Scenario 12</td>
<td>Included with only permit exempt well parcels that are developed</td>
<td>Induced City and PAA with all permit exempt well parcels, starting 1/1/2020, with supplying demand year-round.</td>
<td>User-defined time series for North Bend (down to 6% DSL by 2025); stochastic distribution for Sallal</td>
<td>1% reduction in annual indoor water use, 10% reduction in outdoor water use in Aug 1 to Oct 31</td>
<td>Use entire WWTP return flow strategy, no Mt Si peaking strategy, use Mt Si when operational trigger occurs, Mt Si Bypass 3.05 cft</td>
<td>Randomly repeat historical data</td>
<td>Hobo Springs, Sallal Wells and Cascade Golf Course with Pond</td>
</tr>
</tbody>
</table>
Refer to Tables 7 and 8 for the year in which the maximum annual value occurs.
Hi Keenan,

For the first question, we did not use a ratio to estimate the demands for the mixed-used developments. It was based on the number of dwelling units for the multi-family residential (MFR) demands and for the parcel area for the commercial water demands. We have separated the water demands for you using the following approach: we calculated the average unit water use from the MFR category and then multiplied the unit water demand by the average number of units in the MFR and Commercial category. I have attached a table with the break-down using this approach. Should we add this to the draft memo table?

For the second question, yes, we uniformly applied the 22.4% DSL to all water demands in the City, so the demands across all categories were inflated by 22.4%. The Wholesale water demand category does not have any DSL included.

Alyssa

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Hello Alyssa,

Thank you for putting together the North Bend water projections. We have two follow-up questions regarding these.

First, one of the demand categories modeled was a combined Multi-Family/Commercial category corresponding to mixed-use zoning. For the WSP projections we need to separate these. Was there a consistent demand ratio assigned to the MF and commercial portions for these mixed-use developments? If not, what would be a reasonable assumption?

Second, was DSL incorporated uniformly in the model? With DSL set to 22.4%, were demands across all categories inflated by 22.4%?

Thanks for your help,
Electronic File Transfer-

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City of North Bend 2020 Water System Plan
APPENDIX H

WATER QUALITY MONITORING REPORT, STAGE 2
DISINFECTION BYPRODUCTS MONITORING PLAN,
AND COLIFORM MONITORING PLAN
2019 Water Quality Report

The City of North Bend is pleased to provide you with its annual water quality report. This report is a requirement of the United States Environmental Protection Agency and the Washington State Department of Health.

Monitoring Results for Year 2018

Water quality results at the Mt. Si Spring and Centennial Well have always been satisfactory. Water treatment is achieved by disinfection with chlorine gas and liquid chlorine. To ensure that detectable disinfectant concentration is active in all parts of the distribution system, samples are taken and tested daily at ten strategic locations within the North Bend water service area. Water in the distribution system must maintain a total free chlorine of at least 0.2 ppm. Typically, disinfectant residuals are found in the 0.4-0.5 ppm range. The city is currently required to test six bacteriological samples per month for the presence of E.Coli and fecal coliform. To date, all samples have tested satisfactorily. The city monitors on a three-year cycle for volatile organic, inorganic and synthetic organic chemicals.

What are IOC’s?

Inorganic Chemicals are elements or compounds that may be natural in geology or caused by activities of humans through mining, industry or agriculture. In July and December 2018, the City submitted samples for inorganic chemical analysis. Arsenic and Iron will be tested again in May 2019.

List of Abbreviations

- (MCL) Maximum Contaminant Level
- (MCLG) Maximum Contaminant Level Goal
- (AL) Action Level (triggers treatment or other)
- (ND) NonDetectable
- (NA) Not applicable
- (SRL) State Reporting Level
- (NTU) A measure of the clarity of water
- (PPB) parts per Billion
- (PPM) Parts per million

EPA/State Regulated (Primary) – IOC’s

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State Regulated – IOC’s

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What are VOC’s?

Volatile Organic Chemicals (VOC’s) are contaminants that may be found in drinking water supplies across the nation. VOC’s are those organic chemicals (pesticides, herbicides and other chemicals) that are “readily vaporizable at a relatively low temperature. Some VOC’s are products of industrialization and can enter the water supply through various means, such as leakage of storage tanks, spills, or illegal dumping of toxic wastes. Another concern is Disinfection By-Products like Trihalomethanes (TTHM’s). These by-products can enter the water supply as a result of the disinfection process (usually chlorination). In August 2018, the city submitted samples for volatile organic chemical analysis.

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What are SOC’s?

Synthetic Organic Compounds are chemicals synthesized from carbon and other elements such as hydrogen, nitrogen, or chlorine. These chemicals are manufactured to meet hundreds of needs in our daily lives, ranging from mothballs to hair sprays, solvents and pesticides. The use of these synthetic organic compounds has greatly increased within the past 40 years and some can enter the groundwater. Clearly, it is of primary importance to keep such chemicals from entering our water supply. In September 2017, the City submitted samples for (SOC) testing and results showed that no compounds were detected. This test will be repeated in 2019 and 2022.

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Asbestos

A portion of the City’s distribution system contains asbestos cement (AC) water mains. Asbestos monitoring is required for utilities with asbestos pipe in the distribution system. In August of 2017 the City submitted samples for asbestos analysis. This test will be repeated in 2026.
Monitoring Lead and Copper

The City of North Bend is required to perform lead and copper testing within the system every three years. Sampling and testing was performed in July 2017. Test results indicate that the samples did not exceed the action limits set by the U.S. Environmental Protection Agency. Twenty-four samples were submitted for testing. No samples exceeded the Federal Action level (AL) for either lead or copper. Next testing will occur in 2020. Homes built with copper plumbing and lead solder before 1985 are considered “high risk.” Tap water monitoring allows the water system to determine lead and copper concentrations in your drinking water. The city does not add fluoride to the drinking water.

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We ask that all consumers help us protect our water quality and to conserve water, one of our most valuable resources. Keep reading this report for Water Saving Tips!

“We forget that the water cycle and the life cycle are one”
~ Jacques Cousteau

Required information from the U.S. Environmental Agency on the Potential for Health Concerns relating to Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the land surface or through the ground it dissolves naturally-occurring minerals and can pick up substances resulting from the presence of animals or human activity.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. A contaminant is defined as any substance in water. Not all substances are harmful. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency’s Safe Drinking Water Hotline at 1-800-426-4791 or from the EPA’s Office of Ground Water website at www.epa.gov/OGWDW/

Steps we take to prevent contamination

- CrossConnection Program/Backflow Prevention
- Flushing—all dead end water lines are flushed twice a year
- Well Head Protection Plan in accordance with Comp Plan
- North Bends Reservoirs are cleaned on an alternating annual basis as needed

Who Watches Your Water?

- U.S. Environmental Protection Agency sets national standards for over 100 potential drinking water contaminates under the Safe Drinking Water Act.
- The Washington State Department of Health enforces the USEPA standards.
- The City of North Bend has water samples tested in compliance with all state and federal regulations.
- State Certified laboratories are used to test your water according to standards.

The City of North Bend asks residents to reduce their water usage by 5 gallons per day to meet Department of Health goals.

Here’s ways to save outdoors:

- Reduce lawn size (lawns use 40-50% of our summer water).
- Reduce outdoor usage as much as possible.
- Enrich soils with 3-4 inches of compost worked into the top foot of soil prior to planting.
- Dethatch and aerate lawns for better water absorption.
- Clip lawns no shorter than 2 inches.
- Leave the grass clippings on the lawn. They’re 90% water and provide nitrogen.
- Water only after 7:00 p.m. or before 10:00 a.m. to avoid excessive loss to evaporation.
- Use soaker hoses or drip systems.
- Adjust sprinklers so you’re watering only what grows, not the street or the sidewalk.
- Check hoses and sprinkler systems for leaks and fix them promptly.
- Include a rain sensor and a soil moisture sensor in your automatic sprinkler system.
- Catch rainwater in barrels for thirsty plants.
- Use a broom to clean the driveway or patio, instead
- Wash your car using a bucket of soapy water and use the hose with a shut off nozzle just to rinse.

Ways to Save Indoors:

- Fix leaks promptly - little drips can waste lots of water.
- Install “water displacement devices” in your toilet tank if you have an older model toilet.
- Replace older toilets; newer toilets use only 1.5 gal to flush.
- Replace your showerhead with a low flow model.
- Capture shower warm-up water; use it to water plants, wash the floor or the car.
- Turn off the faucet while brushing teeth or shaving.
- Keep a bottle of drinking water in your refrigerator; running tap water until it’s cold enough wastes water.
- Wash only full loads in the dishwasher and washing machine.
Coliform Monitoring Plan for: City of North Bend

### A. System Information

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<th>Name of Plan Preparer</th>
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<td>Kraig Kramer</td>
<td>Lead Water System Operator</td>
<td>(425) 888-0486 x7655</td>
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**Sources:** DOH Source Number, Source Name, Well Depth, Pumping Capacity

- 01 – Mt. Si Spring: 1,250 gpm
- 03 – Well (NB-3) APN061: 216 feet; 2,500 gpm
- 02 - Sallal (75560) Emergency Intertie

**Storage:** List and Describe

- 1-90 Reservoir – 0.5 MG
  - Steel Reservoir, Constructed 1967
- Nintendo Reservoir – 2.0 MG
  - Prestressed Concrete, Constructed 1991
- Forster Woods – 0.75 MG
  - Steel Reservoir, Constructed 1993

Total Storage Volume: 3.25 MG

**Treatment:** Source Number & Process

- Mt. Si Springs - Chlorine gas, minimum CT=6
- Centennial Well - 12.5% Sodium Hypochlorite.

**Pressure Zones:** Number and name

- 594 Zone
- 710 Zone
- 780 Zone

**Population by Pressure Zone (as of 2020)**

- 594 Zone – 5,270
- 710 Zone – 1,170
- 780 Zone – 351
- Total – 6,791

**Number of Routine Samples Required Monthly by Regulation:** 7

**Number of Sample Sites Needed to Represent the Distribution System:** 7 + Sources Quarterly

**‘Request DOH Approval of Triggered Source Monitoring Plan?’** Yes ☒ No

*If approval is requested a fee will be charged for the review.*
### B. Laboratory Information

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### C. Routine, Repeat, and Triggered Source Sample Locations*

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<tr>
<th>X1. 126 E 4th St</th>
<th>1-1. 126 E 4th St</th>
<th>S01, S03</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-2. 132 E 4th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>1-3. 112 E 4th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X2. 485 Maloney Grove Ave</td>
<td>2-1. 485 Maloney Grove Ave</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>2-2. 505 Maloney Grove Ave</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>2-3. 791 E North Bend Way</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X3. Bldg #3 Unit 461A Factory Stores</td>
<td>3-1. Bldg #3 Unit 461A Factory Stores</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>3-2. Bldg #3 Unit 421F Factory Stores</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>3-3. Bldg #3 Unit 561H Factory Stores</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X4. 721 Mt. Si Blvd (Shell)</td>
<td>4-1. 721 Mt. Si Blvd (Shell)</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>4-2. 705 SW Mt. Si Blvd (Arbys)</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>4-3. 745 SW Mt. Si Blvd (Chevron)</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X5. 819 NE 8th St</td>
<td>5-1. 819 NE 8th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>5-2. 831 NE 8th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>5-3. 720 NE 8th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X6. 435 SE 5th ST</td>
<td>6-1. 435 SE 5th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>6-2. 465 SE 5th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>6-3. 425 SE 5th St</td>
<td>S01, S03</td>
</tr>
</tbody>
</table>

*Groundwater Sources for Triggered Sample Sites**

**Notes:**
- **Routine Sample Sites**
- **Repeat Sample Sites**
- **Triggered Sample Sites**

**Address Format:**
- **St:** Street
- **Ave:** Avenue
<table>
<thead>
<tr>
<th>Location/Address for Routine Sample Sites</th>
<th>Location/Address for Repeat Sample Sites</th>
<th>Groundwater Sources for Triggered Sample Sites**</th>
</tr>
</thead>
<tbody>
<tr>
<td>X7. 441 Main Ave South</td>
<td>7-1. 441 Main Ave S</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>7-2. 445 Main Ave N</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>7-3. 435 Main Ave N</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X8.900 Meadow Drive</td>
<td>8-1. 900 Meadow Drive</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>8-2. 451 SE Alder Drive</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>8-3. 850 Meadow Drive</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X9. 816 NE 5th St</td>
<td>9-1. 816 NE 5th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>9-2. 808 NE 5th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>9-3. 824 NE 5th St</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X10. 520 North Bend Way</td>
<td>10-1. 520 North Bend Way</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>10-2. 530 North Bend Way</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>10-3. 468 North Bend Way</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X11. 43427 SE 92nd St</td>
<td>11-1. 43427 SE 92nd St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>11-2. 43429 SE 92nd Sr</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>11-3. 9540 428th Ave SE</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X12. 1230 SW 12th</td>
<td>12-1. 1230 SW 12th</td>
<td>S01, S03</td>
</tr>
<tr>
<td>710 Zone</td>
<td>12-2. 1270 SW 12th</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>12-3. 1350 SW 12th</td>
<td>S01, S03</td>
</tr>
<tr>
<td>Location/Address for Routine Sample Sites</td>
<td>Location/Address for Repeat Sample Sites</td>
<td>Groundwater Sources for Triggered Sample Sites**</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>----------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>X13. 1230 SW 10th</td>
<td>13-1. 1230 SW 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>S01, S03</td>
</tr>
<tr>
<td>710 Zone</td>
<td>13-2. 1240 SW 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>13-3. 1210 SW 10&lt;sup&gt;th&lt;/sup&gt;</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>14-2. Building 25 Apt 958, Rock Creek Ridge</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>14-3. Building 24 Apt 942, Rock Creek Ridge</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X15. 1031 SE 12&lt;sup&gt;th&lt;/sup&gt; Street</td>
<td>15-1. 1031 SE 12&lt;sup&gt;th&lt;/sup&gt; St</td>
<td>S01, S03</td>
</tr>
<tr>
<td>594 Zone</td>
<td>15-2. 1003 SE 12&lt;sup&gt;th&lt;/sup&gt; St</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>15-3. 1043 SE 12&lt;sup&gt;th&lt;/sup&gt; St</td>
<td>S01, S03</td>
</tr>
<tr>
<td>X16. 1551 SW 12&lt;sup&gt;th&lt;/sup&gt; Ct</td>
<td>16-1. 1551 SW 12&lt;sup&gt;th&lt;/sup&gt; Ct.</td>
<td>S01, S03</td>
</tr>
<tr>
<td>780 Zone</td>
<td>16-2. 1477 SW 10&lt;sup&gt;th&lt;/sup&gt; St.</td>
<td>S01, S03</td>
</tr>
<tr>
<td></td>
<td>16-3. Apt. 1015, Rock Creek Ridge</td>
<td></td>
</tr>
</tbody>
</table>

** When you collect the repeats, you must sample every groundwater source that was in use when the original routine sample was collected.

**Important Notes for Sample Collector:**
Sample only the source that was active at the time of the positive sample.

D. Reduced Triggered Source Monitoring Justification (add sheets as needed):
The City is not seeking this at this time.

E. Routine Sample Rotation Schedule

<table>
<thead>
<tr>
<th>Month</th>
<th>Routine Site(s)</th>
<th>Month</th>
<th>Routine Site(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>X01, X02, X07, X12, X13, X14, X15 +Mt Si Springs</td>
<td>July</td>
<td>X01, X02, X07, X12, X13, X14, X15</td>
</tr>
<tr>
<td>February</td>
<td>X03, X05, X08, X11, X12, X15, X16 +Centennial Well</td>
<td>August</td>
<td>X03, X05, X08, X11, X12, X15</td>
</tr>
<tr>
<td>March</td>
<td>X04, X06, X09, X10, X11, X14, X15</td>
<td>September</td>
<td>X04, X06, X09, X10, X11, X15</td>
</tr>
<tr>
<td>April</td>
<td>X01, X02, X07, X12, X13, X14, X15 +Mt Si Springs</td>
<td>October</td>
<td>X01, X02, X07, X12, X13, X14</td>
</tr>
<tr>
<td>May</td>
<td>X03, X05, X08, X11, X12, X15, X16 +Centennial Well</td>
<td>November</td>
<td>X03, X05, X08, X12, X15</td>
</tr>
<tr>
<td>June</td>
<td>X04, X06, X09, X10, X11, X14, X15</td>
<td>December</td>
<td>X04, X06, X09, X10, X11, X15</td>
</tr>
</tbody>
</table>

F. Standard Operating Procedure

Routine Sampling:
**Routine Sampling:**
Use clean bottles provided by lab and wear latex gloves. Sample from hose bib. Run water for 1 to 2 minutes before taking a cl2 residual. Fill the sample bottle, but do not overflow. Carefully seal bottle and fill out chain of custody form with address, date, time, and sampler initials, wrap COC around bottle, wrap bottle and COC with rubber band, place sample into cooler with cool-pack, deliver to lab for testing.

**Repeat Sampling:**
Repeat samples are required upon positive hit of routine sample. If routine sample tests positive, grab repeat samples at original source as well as upstream and downstream sites. Follow sampling procedures identified above for Routine Sampling.

**Positive samples during intertie use:**
Should a positive coliform test coincide with the emergency use of the Sallal intertie where water is conveyed from Sallal to North Bend, Sallal Water Association must be notified immediately of the positive coliform test and the Sallal’s wells must be tested.

Should a positive coliform test coincide with the emergency use use of the Sallal intertie where water is conveyed from North Bend to Sallal’s distribution system via a mobile emergency pump, Sallal Water Association must be notified immediately of the positive coliform test.

**G. Level 1 and Level 2 Assessment Contact Information**

<table>
<thead>
<tr>
<th>Name</th>
<th>Office Phone</th>
<th>After Hours Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kraig Kramer</td>
<td>(425) 888-7655</td>
<td>(425) 864-0241</td>
<td><a href="mailto:kkramer@northbendwa.gov">kkramer@northbendwa.gov</a></td>
</tr>
<tr>
<td>Address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PO BOX 896</td>
<td>NORTHBEND, WA 98045</td>
<td></td>
</tr>
<tr>
<td>Jake Thompson</td>
<td>(425) 888-7655</td>
<td>(425) 864-0233</td>
<td><a href="mailto:jthompson@northbendwa.gov">jthompson@northbendwa.gov</a></td>
</tr>
<tr>
<td>Address</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PO BOX 896</td>
<td>NORTHBEND, WA 98045</td>
<td></td>
</tr>
</tbody>
</table>
H. *E. coli*-Present Sample Response

<table>
<thead>
<tr>
<th>Background Information</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>To Do List</th>
</tr>
</thead>
<tbody>
<tr>
<td>We inform staff members about activities within the distribution system that could affect water quality.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We document all water main breaks, construction &amp; repair activities, and low pressure and outage incidents.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can easily access and review documentation on water main breaks, construction &amp; repair activities, and low pressure and outage incidents.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Our Cross-Connection Control Program is up-to-date.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We test all cross-connection control devices annually as required, with easy access to the proper documentation.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We routinely inspect all treatment facilities for proper operation.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We identified one or more qualified individuals who are able to conduct a Level 2 assessment of our water system.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have procedures in place for disinfecting and flushing the water system if it becomes necessary.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can activate an emergency intertie with an adjacent water system in an emergency.</td>
<td></td>
<td></td>
<td>☒</td>
<td></td>
</tr>
<tr>
<td>We have a map of our service area boundaries.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have consumers who may not have access to bottled or boiled water.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There is a sufficient supply of bottled water immediately available to our customers who are unable to boil their water.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have identified the contact person at each day care, school, medical facility, food service, and other customers who may have difficulty responding to a Health Advisory.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have messages prepared and translated into different languages to ensure our consumers will understand them.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have the capacity to print and distribute the required number of notices in a short time period.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Policy Direction</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>To Do List</th>
</tr>
</thead>
<tbody>
<tr>
<td>We have discussed the issue of <em>E. coli</em>-present sample results with our policy makers.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
<tr>
<td>If we find <em>E. coli</em> in a routine distribution sample, the policy makers want to wait until repeat test results are available before issuing advice to water system customers.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Cont.)
Distribution System *E. coli* Response Plan

If we have *E. coli* in our distribution system we will immediately:

1. Call DOH.
2. Contact Sallal Water Association if emergency intertie is or has recently been in use.
3. Collect repeat and triggered source samples per Part D. Collect additional investigative samples as necessary.
4. Inspect our major water system facilities, including treatment plants for proper operation.
5. Interview staff to determine whether anything unusual was happening in the water system service area, especially since the previous month’s sample(s).
6. Review new construction activities, water main breaks, and pressure outages that may have occurred during the previous month.
7. Review Cross-Connection Control Program status.
8. Discuss whether a Health Advisory is warranted based on the findings of steps 3-6.
9. Increase chlorine dose at both treatment plants to 1.0 mg/L.
10. Flush affected portions of the distribution system.
11. Prepare draft news release and website changes.
12. Contact school district & medical facilities about potential action.
13. Collect investigative samples every 10 to 12 hours until repeat results are known.
14. Issue news release and make website changes if repeats are coliform or *E. coli* present.
<table>
<thead>
<tr>
<th>Background Information</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>To Do List</th>
</tr>
</thead>
<tbody>
<tr>
<td>We review our sanitary survey results and respond to any recommendations affecting the microbial quality of our water supply.</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
| We address any significant deficiencies identified during a sanitary survey.  
**Note:** One issue was identified at the Mt Si Springs Source (S01) that we are currently investigating how to address properly. | ☐ | ☐ | ☐ | ☒ |
| There are contaminant sources within our Wellhead Protection Area that could affect the microbial quality of our source water, and  
If yes, we can eliminate them. | ☐ | ☐ | ☐ | ☒ |
| We routinely inspect our well site(s). | ☒ | ☐ | ☐ | ☐ |
| We have a good raw water sample tap installed at each source.  
**Note:** Centennial Well (S03) does have a raw sample tap. Mt Si Springs Source (S01) does not currently have a tap. However, we are able to quickly obtain raw water samples with a sample stick. | ☐ | ☐ | ☐ | ☒ |
| After we complete work on a source, we disinfect the source, flush, and collect an investigative sample. | ☒ | ☐ | ☐ | ☐ |

<table>
<thead>
<tr>
<th>Public Notice</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>To Do List</th>
</tr>
</thead>
<tbody>
<tr>
<td>We discussed the requirement for immediate public notice of an <em>E. coli</em>-present source sample result with our water system’s governing body (board of directors or commissioners) and received direction from them on our response plan.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
</tr>
<tr>
<td>We discussed the requirement for immediate public notice of an <em>E. coli</em>-present source sample result with our wholesale customers and encouraged them to develop a response plan.</td>
<td>☐</td>
<td>☐</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>We have prepared templates and a communications plan that will help us quickly distribute our messages.</td>
<td>☒</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
### E. coli-Present Triggered Source Sample Response Checklist – Source S01

<table>
<thead>
<tr>
<th>Alternate Sources</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>To Do List</th>
</tr>
</thead>
<tbody>
<tr>
<td>We can stop using this source and still provide reliable water service to our customers.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months).</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can provide bottled water to all or part of the distribution system for an indefinite period.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can quickly replace our existing source of supply with a more protected new source.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temporary Treatment</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>To Do List</th>
</tr>
</thead>
<tbody>
<tr>
<td>This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If yes, at what concentration? 0.5 mg/L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NOTE: If your system has multiple sources, you may want to complete a separate checklist for each source.*

### E. coli-Present Triggered Source Sample Response Checklist – Source S03

<table>
<thead>
<tr>
<th>Alternate Sources</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
<th>To Do List</th>
</tr>
</thead>
<tbody>
<tr>
<td>We can stop using this source and still provide reliable water service to our customers.</td>
<td>☒</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We have an emergency intertie with a neighboring water system that we can use until corrective action is complete (perhaps for several months).</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can provide bottled water to all or part of the distribution system for an indefinite period.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We can quickly replace our existing source of supply with a more protected new source.</td>
<td></td>
<td>☒</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
This source is continuously chlorinated, and our existing facilities can provide 4-log virus treatment (CT = 6) before the first customer.
If yes, at what concentration? 0.5 mg/L

We can quickly introduce chlorine into the water system and take advantage of the existing contact time to provide 4-log virus treatment to a large portion of the distribution system.

We can reduce the production capacity of our pumps or alter the configuration of our storage quantities (operational storage) to increase the amount of time the water stays in the system before the first customer to achieve CT = 6.

We can alter the demand for drinking water (maximum day or peak hour) through conservation messages to increase the time the water is in the system prior to the first customer in order to achieve 4-log virus treatment with chlorine.

*NOTE: If your system has multiple sources, you may want to complete a separate checklist for each source.

---

**E. coli-Present Triggered Source Sample Response Plan – Source S01**

If we have E. coli in Source S01 water we will immediately:
1. Call DOH.
2. Shut down source S01.
3. Distribute required notice.
4. Increase chlorine dose to achieve at least 1.0 mg/L at the entry point to the distribution system.
5. Begin compliance monitoring of disinfection treatment at S01.
6. Contact DOH to receive acknowledgment that the treatment plant provides 4-log virus treatment.

---

**E. coli-Present Triggered Source Sample Response Plan – Source S03**

If we have *E. coli* in Source S03 water we will immediately:
1. Call DOH.
2. Shut down source S03.
3. Distribute required notice.
4. Increase chlorine dose to achieve at least 1.0 mg/L at the entry point to the distribution system.
5. Begin compliance monitoring of disinfection treatment at S03.
6. In concert with DOH, begin work on corrective action plan to provide 4-log virus treatment.
I. System Map
STAGE 2 DISINFECTION BYPRODUCTS MONITORING PLAN

SYSTEM INFORMATION:

System Name: City of North Bend
PWSID # 60100A
Population: 6,791
Sources: Surface & Groundwater
IDSE: No IDSE Required
Schedule: Schedule 4
Date: July 2020
Operator: Kraig Kramer

MONITORING REQUIREMENTS:

Required Sampling

1 Dual Sample Set per Year is taken at the location and time indicated in Table 1. Locations are also shown on the attached Disinfection byproducts Monitoring Figure.

<table>
<thead>
<tr>
<th>Containment</th>
<th>Stage 2 Compliant ID Site</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest TTHM</td>
<td>X1 - Bldg 21, Apt 967, Rock Creek Ridge</td>
<td>August (Yearly)</td>
</tr>
<tr>
<td>Highest HAA5</td>
<td>X2 - 10808 428th Ave SE</td>
<td>August (Yearly)</td>
</tr>
</tbody>
</table>

Determining Compliance for TTHM and HAA5

The City’s water system is required to monitor once a year. Compliance will be achieved if the TTHM and the HAA4 at the respective monitoring locations is less than or equal to 0.080 mg/L for TTHM and less than or equal to 0.060 mg/L for HAA5. If any sample exceed the MCL, monitoring will be increased to sampling every 90 days at both locations. An MCL violation will have occurred if the Location Running Average (LRAA) exceed either MCL.

Disinfectant Monitoring

Chlorine residuals must be measured at the same time and place as the routine coliform samples. The MRDL for chlorine and chloramines is 4.0 mg/L as Cl₂.

Compliance is based on the running annual average of 12 consecutive months. Daily residual measurements are not included in the compliance calculations.
APPENDIX I

WATER USE EFFICIENCY DOCUMENTS
Water Reclamation Evaluation Checklist
For Systems with 1,000 or more Connections

The County and State recognize that changing conditions could initiate a need to respond in new ways to future water quality standards, wastewater discharge requirements, take advantage of advances in treatment technologies and/or allow our region to be positioned to respond to changes associated with climate change and population growth.

In 2003, Chapter 90.46 of the Revised Code of Washington (RCW) was amended to require public water systems serving 1,000 or more connections to evaluate opportunities for reclaimed water when completing their water system plans. Please use this checklist to meet King County consistency requirements in responding to this legislation.

Water System Name: City of North bend
Date: February 28, 2020
PWS ID#: 60100A
Contact: Don Deberg, (425) 888-7652

1. **Identifying Potential Future Demand for Reclaimed Water:** King County maintains a database and map of potential reclaimed water users for evaluating future projects. Please use the template below, or similar table, to provide information to assist King County in further researching these potential uses.
   - **Large Utility Water Users** (choose one):
     - [ ] Attached is an inventory of twenty large (above 20,000 gallons/month on average), non single-family residential, water users served by our utility that have a potential for reclaimed water use, or
     - [ ] Attached is an inventory of our utility’s top twenty water users, or
     - [ ] The information requested is unknown or not available.
       Additional Comments: ________________________________________________________________________

   - **Large Self Suppliers** (choose one):
     - [ ] Attached is an inventory of large, self-supplied water users within our water utility’s service boundaries - especially those near wastewater treatment plants, mainlines, outfalls, and pump stations or similar reclaimed water facilities, or
     - [ ] The information requested is unknown or not available.
       Additional Comments: ________________________________________________________________________

   - **Other** (choose one):
     - [ ] Attached is an inventory of other water users (such as those that are clustered near one another and could be served by a single system) that may be likely candidates for reclaimed water use, or
     - [ ] The information requested is unknown or not available.
       Additional Comments: ________________________________________________________________________

Please use this checklist, including the inventory template, to ensure that your water system plan includes sufficient information about opportunities for reclaimed water and your system’s efforts to develop those opportunities. If a question is not applicable or the information is unavailable, then answer, “unknown” or “n/a.” King County will consider the checklist completed if each answer is filled in with the best available information, even if the utility states that it is not aware of any reclaimed water opportunities within its service area.

Revised 12/12/2011
2. **Environmental Commitment:** Are you a city/town, or providing water service to a city/town, that has made commitments within resource management plans, salmon recovery plans, or other environmental initiatives for which there is a potential opportunity for using reclaimed water to assist in meeting commitments? (choose one)

☐ Yes, here are plans that have potential for reclaimed water use in our service area to meet the above commitments:

________________________________________________________________________________________

☐ The information requested is unknown, not available.

Additional Comments: __________________________________________________________

3. **Identifying Areas of Potential Use of Reclaimed Water for Environmental Benefit:**

Below are examples of uses of reclaimed water *that comply with State, Federal and other reclaimed water environmental, health and safety standards.* All of these uses are currently in effect somewhere in Washington State. To the best of your knowledge, are any of these potential uses for reclaimed water applicable to your area?

**River Augmentation** (choose one):

☐ Yes, our water rights are limited by instream flows. For more information, King County may contact:  

*Yes, the City’s well water right (G1-26617(A)P) is limited by instream flows in the Snoqualmie River unless mitigated. The City mitigates for these flows with its WWTP return flows and a wholesale mitigation source.*

☐ The information requested is unknown, not available.

Additional Comments: __________________________________________________________

**Groundwater Recharge** (choose one):

☐ Yes, we withdraw water from an aquifer that is in a groundwater management area, or from a declining aquifer, where water levels may need to be replenished or to maintain aquifer storage. For more information, King County may contact:

☐ The information requested is unknown, not available.

Additional Comments: *Any use of reclaimed water for purposes other than river augmentation, would negatively impact the City's ability to provide mitigation water*

**Water Rights Mitigation** (choose one):

☐ Yes, our area is pursuing, or planning to pursue, new or additional water rights, and there may be an opportunity to use reclaimed water for mitigation of those new water rights. For more information, King County may contact:

☐ The information requested is unknown, not available.

Additional Comments: *Any use of reclaimed water for purposes other than river augmentation, would negatively impact the City's ability to provide mitigation water*

**Potential Areas of Environmental Need** (choose one):

☐ Yes, parts of our service area include potential environmental enhancement locations, such as wetlands enhancement, aquifer recharge, stream flow augmentation, that might be candidates for reclaimed water use. For more information, King County may contact:

☐ The information requested is unknown, not available.

Additional Comments: *Any use of reclaimed water for purposes other than river augmentation, would negatively impact the City's ability to provide mitigation water*
4. **Local Reclaimed Water Legislation**: If water reclamation is mandated for this water system through local government agreement, contract, local regulations, ordinances, or other mechanisms, please provide a copy of the governing mechanism (choose one).

☐ Yes, local legislation exists in our area in support of reclaimed water use. The following relevant legislation is attached (please list titles of documents):

No water reclamation legislation exists, or is known to exist, at a local level in our service area.

5. **Coordination with Local Wastewater Utility**: Include a brief description of your interactions with any wastewater or reclaimed water utility (King County or other) adjacent to your service area to evaluate any potential opportunities to develop reclaimed water (choose one).

☐ Describe if applicable:

None. Additional Comments: Any use of reclaimed water for purposes other than river augmentation would negatively impact the City's ability to provide mitigation water.

---

**Template for Inventory of Water Users and Identification of Potential Reclaimed Water Users**

<table>
<thead>
<tr>
<th>Site Owner or Site Name</th>
<th>Site Address (for general mapping purposes)</th>
<th>Estimated Annual Water Use</th>
<th>Water uses not requiring potable water</th>
<th>Is this a Potential Reclaimed Water Customer?</th>
</tr>
</thead>
<tbody>
<tr>
<td>QFC</td>
<td>439 E Second St</td>
<td>2.21 MG</td>
<td></td>
<td>Any use of reclaimed water</td>
</tr>
<tr>
<td>Safeway Inc.</td>
<td>460 SW Mt Si Blvd</td>
<td>1.76 MG</td>
<td></td>
<td>water for purposes</td>
</tr>
<tr>
<td>Les Schwab</td>
<td>610 E North Bend Way</td>
<td>1.55 MG</td>
<td></td>
<td>other than river</td>
</tr>
<tr>
<td>Si View Apartments</td>
<td>424 Healy Ave S</td>
<td>1.54 MG</td>
<td></td>
<td>augmentation would</td>
</tr>
<tr>
<td>Arby’s Restaurant Group</td>
<td>705 SW Mt Si Blvd</td>
<td>1.46 MG</td>
<td></td>
<td>negatively impact</td>
</tr>
<tr>
<td>Lakeshore Corporation</td>
<td>226 Cedar Ave S</td>
<td>1.35 MG</td>
<td></td>
<td>the City's ability to provide mitigation</td>
</tr>
<tr>
<td>Red Oak</td>
<td>650 E North Bend Way</td>
<td>1.30 MG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sno Ridge Apts</td>
<td>401 Stow Ave S</td>
<td>1.28 MG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mt Si Chevron</td>
<td>745 SW Mt Si Blvd</td>
<td>1.27 MG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Bend Bar &amp; Grill</td>
<td>145 E North Bend Way</td>
<td>1.00 MG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alpine Water Assoc.</td>
<td>13134 409th Ave SE</td>
<td>1.00 MG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suhrbier Company</td>
<td>316 Cedar Ave S</td>
<td>0.90 MG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Towne Mobile Park</td>
<td>336 Bendigo Blvd N</td>
<td>0.87 MG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cascade Park Apts</td>
<td>440 Main Ave S</td>
<td>0.83 MG</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

1 See Washington State Reclamation and Reuse Standards, September 1997, Section 1, Articles 1-5 for allowable uses of reclaimed water.  
Water Conservation

The easiest and most effective way to conserve thousands of gallons of water around your home is to reduce the water you use on your landscape.

Tips to Save Water Outdoors

• Dethatch and aerate lawns for better water absorption. Clip lawns no shorter than 2 inches.
• Leave the grass clippings on the lawn. They’re 90% water and provide nitrogen.
• Water only after 7:00 p.m. or before 10:00 a.m. to avoid excessive loss to evaporation.
• Use soaker hoses or drip systems.
• Adjust sprinklers so you are watering only what grows, not the street or the sidewalk.
• Check hoses and sprinkler systems for leaks and fix them promptly.
• Include a rain sensor and a soil moisture sensor in your automatic sprinkler system.
• Use a broom to clean the driveway or patio, instead of the hose or power washer.
• Reduce the size of your lawn.
• Consider drought-tolerant plants to manage summer dryness.

For more water conservation tips, including ways to save indoors, visit northbendwa.gov
STOP WATER WASTE

Why should I reduce my water consumption?

• Billing for your water use is tiered. So the more you use, the higher the price per gallon used becomes.

• Your sewer bill is based on water use as well, so the sewer bill goes up alongside the water bill

How you can help conserve water:

Your monthly historical usage is included in your monthly bill. Make it a personal goal to use less water than you did last year by using the water saving tips that follow.

<table>
<thead>
<tr>
<th>Waste Water Adds Up: Drops Turn Into Gallons</th>
<th>1 Day</th>
<th>1 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count the number of drips in 30 seconds to see how many gallons are wasted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 drops</td>
<td>0.8</td>
<td>292</td>
</tr>
<tr>
<td>10 drops</td>
<td>1.6</td>
<td>564</td>
</tr>
<tr>
<td>15 drops</td>
<td>2.4</td>
<td>876</td>
</tr>
<tr>
<td>20 drops</td>
<td>3.2</td>
<td>1188</td>
</tr>
<tr>
<td>25 drops</td>
<td>4.0</td>
<td>1460</td>
</tr>
<tr>
<td>30 drops</td>
<td>4.8</td>
<td>1752</td>
</tr>
</tbody>
</table>

Ways to Save Indoors

• Fix leaks promptly - little drips can waste lots of water. Install “water displacement devices” in your toilet tank if you have an older model toilet.

• Replace older toilets; newer toilets use only 1.5 gal to flush.

• Replace your showerhead with a low flow model.

• Capture shower warm-up water; use it to water plants, wash the floor or the car.

• Turn off the faucet while brushing teeth or shaving.

• Keep a bottle of drinking water in your refrigerator. Running tap water until it’s cold enough wastes water.

• Wash only full loads in the dishwasher and washing machine.

For More Information:
North Bend Public Works
1155 E North Bend Way
P.O. Box 896
North Bend, WA 98045
(425) 888 - 0486
www.northbendwa.gov

Ways to Save Outdoors

• Reduce lawn size (lawns use 40-50% of our summer water).

• Enrich soils with 3-4 inches of compost worked into the top foot of soil prior to planting

• Dethatch and aerate lawns for better water absorption. Clip lawns no shorter than 2 inches

• Leave the grass clippings on the lawn. They’re 90% water and provide nitrogen.

• Use soaker hoses or drip systems.

• Adjust sprinklers so you’re watering only what grows, not the street or the sidewalk.

• Check hoses and sprinkler systems for leaks and fix them promptly.

• Include a rain sensor and a soil moisture sensor in your automatic sprinkler system.

• Catch rainwater in barrels for thirsty plants.

• Use a broom to clean the driveway or patio, instead of the hose and precious water

• Wash your car using a bucket of soapy water. Use a hose with a shut off nozzle just to rinse.

The City of North Bend’s goal is to reduce each person’s daily water consumption by 10 gallons within the next five years!
October 25, 2018

Dear Resident,

Please be advised that as the result of a recent water use survey, your property has been identified as one of the largest water users of the North Bend Water Utility’s approximately 2,000 customers. The City of North Bend offers free leak detection near the meters and we would suggest working with you to determine if your unusually high use is related to a leak. We have also enclosed information about water conservation which we are asking you to read and share with your household members in order to reduce your water use and costs to a more typical range. For example, if you have an irrigation system, typically in early September is a good time to turn the system off as the Fall rains water lawns and gardens naturally. Additionally, there is less sunlight during the day.

By working together to reduce water usage, you are helping the city maintain affordable water rates for all users and for yourself too. If you have any questions or concerns, please contact Carrie Smith at the public Works Department (425) 888-7651, or Kraig Kramer, Lead Water Operator (425) 888-7655. Thank you for your kind attention.

Sincerely,

Don DeBerg, P.E.
City Engineer
APPENDIX J

NORTH BEND MITIGATION INCIDENT REPORT
To: Ria Berns – Section Manager Ecology; Jay Cook, LHG – Technical Unit Supervisor Ecology; Kellie Gillingham – Water Resources Ecology; Anne Savery – Tulalip Tribe; Matthew Baerwalde – Snoqualmie Tribe

From: Donald DeBerg, P.E. – City Engineer North Bend

cc: Kenneth Hearing – Mayor North Bend; Mark Rigos, P.E. – Interim City Administrator North Bend; Tom Mohr, P.E. – Acting Public Works Director North Bend; David Miller, AICP – Community and Economic Development Director North Bend; Eileen Keiffer – City Attorney Kenyon Disend, PLLC; Chris Cote – SCADA Supervisor North Bend; Kraig Kramer – Lead Water Operator North Bend; Nicole DeNovio, PhD, LHg – Senior Consultant/Associate Golder Associates

Date: August 22, 2019

Re: Event Report for Metering Error Between Dates of July 2, 2019 and August 15, 2019

I. Event Report Summary
The City of North Bend (City) identified a mechanical error on August 15, 2019. This mechanical error led to under reporting of water pumped from the Centennial Well which, in turn, caused under mitigation between the periods of July 2, 2019, and August 15, 2019. The City had sufficient mitigation water available to provide the mitigation water required by the City’s water right permit and the under mitigation was solely the result of an accidental mechanical error. We took immediate action to remedy the issue and provided the full amount of compensatory mitigation by 8AM on August 21, 2019. We are committed to complying with the water right. The following is a more detailed report of the event and the immediate action taken by the City staff to remedy the error upon its discovery.

II. Description of Problem
In 2019 the City found that the flow meter at the Centennial Well (Well NB-3) was reading approximately 5% lower than actual volume flowing through the meter. In an effort to correct this discrepancy and comply with metering requirements, the City procured a new flow meter and requested bids from contractors on the MRSC Small Works Roster to install the new meter. Having received no bids, City staff decided to perform the work in-house. The new flow meter was installed on July 2, 2019.

We have since discovered that in the course of installing the new meter, two of the four signal cables were inadvertently landed on the incorrect terminals. The terminals on the flow meter head are numbered 6, 5, 7, 8, 4, 37, 30. The cable that is supposed to land on terminal 6 was actually placed in terminal 5 and the cable that is supposed to land on terminal 5 was actually placed in terminal 6 (see Figure 1). This resulted in the flow meter only recording 50% of the flow that was passing through it. Following best practices, immediately following the installation, staff performed a self-diagnosis on the flow meter and the meter reported no problems. This was performed several times in the following...
weeks with no reported issues. The self-diagnosis is a program in which a computer is connected to the meter and the computer performs a diagnostic check to ensure the meter is functioning correctly. Staff discovered the landing issue on August 15, 2019 and immediately corrected the wiring discrepancy, prior to pumping any water from the well on that day. As such, the volume reported by the flow meter on August 15, 2019 is correct. This error led to 11 missed mitigation days and 29 insufficient mitigation days between the dates of July 3, 2019 and August 15, 2019, inclusive. See Table 1 below for a full accounting of the error.

Figure 1. Flow meter head noting wires that were landed incorrectly.

III. Actions Taken to Correct Problem
The shortfall for August 15, 2019 was calculated prior to 8 AM on August 16, 2019 by using the backup spreadsheet method and was added to the August 16 mitigation volume. Mitigation flows for August 16 were adjusted accordingly at 8:00 AM to make up that shortfall, in accordance with the water rights permit for the well. This allowed City staff time to assess the river flows and capacity of the Hobo Springs mitigation system before implementing further actions. After determining the capacity of Boxley Creek was able to accept the flow and verifying that the change in flow to the South Fork of the Snoqualmie River was unlikely to cause safety concerns, at 2:30 PM on August 16, 2019, both mitigation valves were fully opened to allow mitigation water to flow at its maximum rate. This was done to initiate making up of the total shortfall accrued during the six-week metering error. Both valves were
left fully opened for the remainder of August 16, 2019 through approximately 2:00 PM August 20, 2019 when staff had finalized their calculations and found that the shortfall would be made up by 8:00 AM August 21, 2019. Additional inspections were performed at the Boxley Creek outfall and Hobo Springs Collection box to ensure all mitigation infrastructure was performing as expected.

On August 16, 2019, City staff used the backup spreadsheet method of recalculating the mitigation requirements for every day between July 2, 2019 and August 16, 2019, inclusive. The mitigation requirements calculated by the backup spreadsheets was then transferred to a separate spreadsheet which was used to summarize the information and to calculate the previous 365 day volume pumped from the well and cumulative mitigation shortfall for the period. Until the regularly used mitigation database is updated with corrected information, staff will continue to use this method to calculate daily mitigation requirements.

City staff began sourcing pumps and pipes for use of the Cascade Golf Course water right on August 17, 2019. This continued through August 19, 2019 when all necessary items were secured. Pumps and some piping are owned by the City and more piping was secured from R&R Rentals and the City of Snoqualmie.

On August 18, 2019, City staff emailed Ecology staff with a request to use the City’s recently acquired Cascade Golf Course water right (Certificate #CG1-00142C) as a temporary mitigation source to supplement Hobo Springs. Had this source been available immediately, the shortfall could have been made up approximately 0.5 to 1.0 days sooner. This would have required permission to lay pipe across a private property to the south of the former golf course property and adjacent to the South Fork of the Snoqualmie River to supply this water to the river. On August 19, 2019, staff were able to contact the property owner. The property owner requested a formal agreement from the City, which would have likely taken over a week to develop and execute. Because the shortfall was projected to be resolved by August 21, 2019, and permission from the owner would have come after that date, this idea was abandoned.

On August 19, 2019, the City hired a third party to verify that the flow meter is reading correctly. This was done by placing a clamp-on ultrasonic flow meter just downstream of the City’s permanently installed magnetic flow meter and comparing the two flow rates. The clamp on meter reported a reading of 1,070 gallons per minute and the permanent meter reported a reading of 1,085 gallons per minute at the same time for an error of 1.4%.

August 20, 2019 consisted of staff thoroughly reviewing the calculations and correcting any errors made in previous calculations. Ultimately, a total mitigation shortfall of approximately 6.282 million gallons was calculated for August 15, 2019, not counting the August 16, 2019 daily mitigation requirement and prior to any action being taken to make up the shortfalls. Initial emails to Ecology stated the shortfall was approximately 7 million gallons, including the daily mitigation requirement for August 16, 2019. Additionally, it was calculated that the entire shortfall would be made up prior to 8:00 AM on August 21, 2019, the time at which mitigation calculations are normally run. Upon making this determination, at 2:00 PM, staff calculated that a mitigation flow rate of approximately 1,095 gallons per minute would be adequate to meet current day mitigation requirements as well as finish correcting the shortfall. In an attempt to satisfy the requirement in the water right that mitigation water is delivered uniformly over...
the course of the “mitigation day”, the valves were adjusted to achieve a target flow of 1,115 gallons per minute for the remainder of the day. The shortfall was made up by 8:00 AM August 21, 2019, as anticipated, and we resumed normal mitigation operation.

IV. Mitigation Supply
Hobo Springs flows would have been sufficient to supply daily mitigation requirements between July 2, 2019 and August 15, 2019 had the meter been reading correctly. When compensatory mitigation was being delivered, Hobo Springs had approximately 1,200 gallons per minute of excess water flowing over the weir during the make-up period. Flow rates were limited only by the infrastructure’s ability to convey the flow. See Chart 1 for a daily comparison of Hobo Springs flow available, actual mitigation volume delivered, and corrected mitigation requirement volume.

[Chart 1. Daily comparison of actual mitigation volume delivered, corrected mitigation requirement, and Hobo Springs flow available.]

V. River Impact
The impact on the river due to the City’s inadvertent under mitigation was small. As a percentage of river flow, the maximum daily mitigation shortfall of 291,749 gallons on August 1, 2019 would have comprised approximately 0.07% of mainstem Snoqualmie River flow near Snoqualmie (USGS Gauge # 12144500) and approximately 0.31% of the South Fork of the Snoqualmie River flow near North Bend (USGS Gauge # 12144000). We estimate the difference in rise in the South Fork of the Snoqualmie River to be approximately 0.005 ft. or 0.06 in. based on flow vs. stage differences shown on the USGS gaging station website. The City’s immediate action provided compensatory mitigation over a period of only
five days making up for 40 days of the inadvertent under mitigation. See Chart 2 for a comparison of the South Fork of the Snoqualmie River flow as compared to the actual mitigation delivered and the corrected mitigation requirement.

Chart 2. Comparison of flow in the South Fork of the Snoqualmie River, actual mitigation delivered, and corrected mitigation requirement.

VI. Reporting
Golder Associates initially reported this problem to Jay Cook, Kellie Gillingham, and Buck Smith, all with the Washington State Department of Ecology via telephone message on August 16, 2019. At that time, the volume of the shortfall was unknown. City staff spent Friday, August 16, 2019 and Saturday, August 17, 2019 performing calculations to determine the volume of the shortfall. After making this determination, Ecology was again contacted via email on August 18, 2019 with a description of the problem, approximate volume of the shortfall (approximately 7 million gallons, including August 16, 2019 daily mitigation requirement), actions underway to make up the shortfall, request to use Cascade Golf Course, and preliminary measures that could be taken in the future to prevent recurrence of this issue. The City again contacted Ecology via email on August 19, 2019 with an update to the situation and later in the day with information regarding the use of the Cascade Golf Course water right, and rescinding the request to use that water right due to access issues, initially made on August 18, 2019. This report will conclude reporting on this issue.
VII. **Steps to Be Taken to Prevent Recurrence of This Issue**
The City has implemented the following safeguards to prevent recurrence of this and similar issues in the future:

1. The City will use contractors experienced in work of this type and magnitude in the future, rather than using internal staff.
2. During the repair or replacement of any critical flow meters, the City will have a second instrument on-site to confirm accuracy prior to placing the new or replaced meter into service.
3. The City will only perform work of this type at times of the year that mitigation has not historically been required, whenever possible.
4. The City will include a section on metering in an update to the Operations & Maintenance Plan. This will include discussion of Ecology’s metering rule, how it applies to this system, and how the City will comply with the requirements of the rule.
5. The City will include a section strictly focused on mitigation water in the Emergency Response Plan required to be developed in accordance with the Water Infrastructure Act of 2018.
6. Finally, the City will formalize a request to Ecology to permanently convert the Cascade Golf Course water right from an irrigation water right to a mitigation water right. Upon successful conversion, the City will acquire all rights to, and construct the necessary infrastructure to make the Cascade Golf Course water right a viable mitigation source.

VIII. **Conclusion**
We take our duties under our water right permit extremely seriously; the unexpected metering error forced us to examine our internal processes which will lead to further safeguards in the system. We took immediate actions to remedy the mechanical error and deliver the compensatory mitigation water once discovered and as discussed above. It is important to reiterate that the City had sufficient mitigation water to provide the mitigation water as planned in the City’s water right and that the under mitigation was solely the result of a mechanical error. All compensatory mitigation for the 40 days of under mitigation was supplied in less than a week from the date that the error was discovered. The City looks forward to working with the Department of Ecology and is extremely appreciative of the assistance of Department of Ecology staff in assisting the City in remedying this error.
### Table 1

<table>
<thead>
<tr>
<th>Date</th>
<th>Reported Volume Pumped from Centennial Well (Gallons)</th>
<th>Actual Volume Pumped from Centennial Well (Gallons)</th>
<th>Difference (Gallons)</th>
<th>Corrected Mitigation Requirement (Gallons)</th>
<th>Daily Mitigation Shortfall (Gallons)</th>
<th>Cumulative Mitigation Shortfall (Gallons)</th>
<th>Volume to add to previous 365 day Centennial report (Gallons)</th>
<th>Volume pumped 365 days from MWMS report (Gallons)</th>
<th>Revisied volume pumped 365 days (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/2/2019</td>
<td>308,057</td>
<td>306,114</td>
<td>1,943</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7/3/2019</td>
<td>301,076</td>
<td>301,152</td>
<td>1,086</td>
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1. This volume is the cumulative difference between Reported Volume Pumped from Centennial Well and Actual Volume Pumped from Centennial Well.
APPENDIX K

PUBLIC WORKS CONSTRUCTION STANDARDS
Acknowledgements

**City Administrator**
Londi Lindell

**City Council**
Brenden Elwood
Alan Gothelf
Trevor Kostanich
Ross Loudenback
Jeanne Pettersen
Jonathan Rosen
Martin Volken

**Mayor**
Kenneth Hearing

**Public Works**
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Tom Mohr, PE, Deputy Director
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Mike Sippo, Project Manager
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**Community & Economic Development**
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Jamie Burrell, Senior Planner
Mike McCarty, Senior Planner

**Consultants**
Rahmi Kutsal, PE, Perteet, Inc.
Roger Kuykendall, PE, Gray & Osborne, Inc.
PUBLIC WORKS STANDARDS

CITY OF NORTH BEND

Original Adoption: _________________________
Ordinance: __________________
Revised: _________________________

City of North Bend
Public Works Department
P.O. Box 896
1155 E. North Bend Way
North Bend, Washington 98045
(425)-888-7651

Originally Prepared by:

Gray & Osborne, Inc.
1130 Rainier Avenue South, Suite 300
Seattle, Washington 98144
June 2018
# NORTH BEND PW STANDARDS

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Small Site Storm Drainage Handout
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SECTION 1

INTRODUCTION
SECTION 1 INTRODUCTION

1.01 Application

These Standards shall apply to all improvements within the public right-of-way and/or public easements, to all improvements required within the proposed public right-of-way of new subdivisions, for all improvements intended for ownership, operation and maintenance by the City and for all other improvements (on or offsite) for which the City of North Bend Municipal Code (NBMC) requires approval from the City Administrator, Public Works Director, City Engineer, Director of Planning and Community Development, and/or the City Council. These standards also apply to new streets, street improvements, or other infrastructure improvements that will remain privately owned. These Standards are intended as guidelines for designers and developers in preparing their plans and for the City in reviewing plans. Where minimum values are stated, greater values should be used whenever practical; where maximum values are stated, lesser values should be used where practical. The developer is, however, cautioned that higher standards, additional studies, and/or environmental mitigation measures may, and will, in all likelihood, be imposed by the City when developing on, in, near, adjacent, or tributary to critical areas to include, but not be limited to, erosion, flood, steep slope, landslide, and seismic hazards; and streams and wetlands.

Alternate designs will be accepted when it can be shown, to the satisfaction of the City, that such alternate designs will provide a design equal to or superior to that specified. In evaluating the alternate design, the City shall consider appearance, operations, durability, maintenance, public safety, and other appropriate factors.

Any improvements not specifically covered herein by these Standards must meet or exceed, as determined by the Public Works Director, the current edition of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road, Bridge & Municipal Construction, revised as to form to make reference to Local Governments. Said specifications shall be referred to hereafter as the "Standard Specifications".

Where improvements are not covered by these Standards nor by the WSDOT Standard Specifications or Standard Plans, the City will establish appropriate standards in its sole reasonable discretion, in a manner consistent with sound engineering practice and judgment. Where these Standards conflict with any existing City code or discrepancies exist within the body of this text, the higher standards shall be utilized as determined by the Public Works Director.

Improvements in the public right-of-way or within public easements, and any other improvements to be dedicated to the City, shall be included as a written condition of application approval or shall otherwise require the advance written approval of the City.

The designer shall submit calculations or other appropriate materials supporting the design of utilities, pavements, and storm drainage facilities. The designer shall submit calculations for structures and other designs when requested by the Public Works Director and/or Building Official.

1.02 Definitions

Definitions: As used herein:

(a) “ADA” means the Americans with Disabilities Act (ADA) of 1990. 42 USC 12101 et seq with implementing regulations. See ADA Home Page: http://www.ada.gov
(b) “City” means the City of North Bend, Washington, King County, a municipal corporation, existing under and by virtue of the laws of the State of Washington.

(c) “City Administrator” means the City’s duly appointed City Administrator or his/her authorized representative.

(d) “Contractor” means the Developer’s contractor or subcontractor.

(e) “Details or Additional Drawings” means all details or drawings prepared to further explain or clarify the plans, or for the revision of the same, all as herein provided.

(f) “Developer” means any person, firm, partnership, association, joint venture, or corporation or any other entity responsible for a given project, for which an approval is required from the City. The term shall also include the Developer’s contractor employed to do the work or the contractor’s employees.

(g) “Development” means the construction, reconstruction, conversion, structural alteration, relocation, enlargement, or change in use of any structure or property, or any project which will increase vehicle trips per day during peak hour traffic, or any project which negatively impacts the service level, safety, or operational efficiency of serving roads, utilities, and storm drainage systems.

(h) “Developers Agreement” means any written agreement such as SEPA mitigation conditions, conditions of approval for subdivisions, conditions associated with any permit, approved plans, Developer Extension Agreement, and any other written agreement between the City and a Developer.

(i) “Director” means the City’s duly appointed Director of Public Works, or his/her authorized representative.

(j) “Engineer” means the City’s Engineer, whether a staff engineer or consultant.

(k) “Equipment” means the machinery, accessories, appurtenances and manufactured articles to be furnished and/or installed under the Project.

(l) “Infrastructure Maintenance Manager” means the City’s utilities superintendent, or operations and maintenance supervisor, or Public Works Director.

(m) “Maintenance Surety,” “Maintenance Bond,” or “Guarantee Bond” means a surety furnished by the Developer and written by a corporate body qualified to write surety in the State of Washington, guaranteeing that the Developer will repair any defects found in the work within the time period as further identified herein.

(n) “Material or Materials” shall be construed to embrace machinery, manufactured articles, materials of construction (fabricated or otherwise) and any other classes of material to be furnished in connection with the Project.

(o) “Multiple Use Building” means a building, or set of buildings with multiple tenant spaces, not including residential-only structures, served by a shared domestic water service, example strip malls.
(p) “Or Equal” means any manufactured article, material, method, or work which, in the opinion of the Engineer, is equally desirable or suitable for the purposes intended in these standards as compared with similar articles specifically mentioned herein.

(q) “Performance Surety” or “Performance Bond” means a surety furnished by the Developer and written by a corporate body qualified to write surety in the State of Washington, guaranteeing that the work will be completed in accordance with the plans and specifications.

(r) “Permittee” means any party applying for or having received a permit.

(s) “Plans” mean drawings, including reproductions thereof, of the work to be done as an extension to the City's public roads and utilities, prepared by an engineer licensed in the State of Washington.

(t) “Plumbing Code” means the Uniform Plumbing Code as adopted by City of North Bend City Council, together with amendments, additions, and exemptions per NBMC 15.20.

(u) “Premise Isolation” means a method of protecting the public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection or alternative location acceptable to the purveyor to isolate the consumer’s water system from the purveyor’s distribution system.

(v) “Project” means the structure or improvement to be constructed in whole or in part.

(w) “Reference Specifications” means the technical specifications of other agencies incorporated or referred to herein.

(x) “Reviewing Agency” means the City of North Bend.

(y) “Special Provisions” means the directions, provisions, and requirements designated by an engineer licensed in the State of Washington for the performance of the work and for the quantity and quality of materials, as contained or referenced herein.

(z) “Specifications” shall mean the prescribed directions, requirements, explanations, terms and provisions pertaining to the various features of the work to be done, or manner and method of performance. They also include directions, requirements, and explanations as set forth on the plans.

(aa) “Standard Details” means the City of North Bend standard detail drawings.


(dd) “Unapproved Auxiliary Supply” means a water supply (other than the purveyor’s water supply) on or available to the consumer’s premises that is either not approved for human consumption by the health department or is not otherwise acceptable to the purveyor. Sites with unapproved auxiliary supplies require premise isolation.
INTRODUCTION

“Words and Phrases.” Whenever the words, “as directed”, “as required”, “as permitted”, or words of like effect are used, it shall be understood that the direction, requirement or permission of the Engineer is intended. The words, “sufficient”, “necessary”, “proper”, and the like shall mean sufficient, necessary or proper in the judgment of the Engineer. The words, “approved”, “acceptable”, “satisfactory”, or words of like import shall mean approved by or acceptable to the Engineer.

“Work” means the labor or materials or both, superintendence, equipment, transportation, and other facilities necessary to complete the Project.

1.03 Developer to be Informed

The Developer is deemed to be fully informed regarding the nature, quality, and the extent of the work to be done, and, if in doubt, to seek additional guidance from the City.

1.04 Authority of the City Administrator

The City Administrator or his/her authorized representative shall have the authority to stop work whenever development is being done contrary to the provisions of the Standards, City code, or regulation of the city; and shall have authority to reject work and materials which do not conform and to decide questions which may arise in the execution of the work and have the authority to determine the amount, quality, acceptability and fitness of the several kinds of work, material and equipment and to decide all questions relative to the classification of materials and compliance with the Standards, and to reject or condemn all work or material which does not conform to the provisions herein.

Any material errors or material omissions in the approved plans or information used as a basis for such approvals may constitute grounds for withdrawal of any approvals and/or stoppage of any or all of the permitted work, as determined in the sole reasonable discretion of the City. It shall be the responsibility of the Developer to show cause why such work should continue, and to otherwise make such changes in plans that may be required by the City before the plans are re-approved.

Moreover, the City has not so delegated, and the City Administrator or his/her authorized representative(s) does (do) not purport to be a safety expert, is not so engaged in that capacity under the Contract, and has neither the authority nor the responsibility to enforce construction safety laws, rules, regulations or procedures, or to order the stoppage of work for claimed violations thereof. The furnishing by the City of resident project representation and/or inspection shall not be construed by the Contractor or Developer that the City is responsible for the identification or enforcement of such laws, rules, or regulations.

1.05 Payment for City Services

The Developer shall be responsible for promptly reimbursing the City for all costs and expenses incurred by the City in the pursuit of project submittal, review, approval, and construction. These costs include, but are not limited to, the utilization of staff and other outside consultants as may be necessitated to adequately review and inspect construction of the project. All legal, administrative, and engineering fees for project review, meetings, approvals, site visits, construction inspection, etc., shall be subject to prompt reimbursement. The Developer is cautioned that project approval (City acceptance) and occupancy permits will be denied until all bills are paid in full. The City may, at its sole discretion require that funds be placed in an account at the City by which the City may draw from to reimburse said costs.
SECTION 2

PERMITS
SECTION 2   PERMITS

2.01   Permit Required

No person, firm or corporation shall commence work on the construction, alteration or repair of any facility located either in the public right-of-way, public easement, or private property without any necessary permit(s) first having been obtained from the City, provided the City shall not issue right-of-way permits for City-sponsored projects. Permits or approvals from other agencies may be required for some types of work. In such cases, the developer shall provide the City with copies of those permits or approvals, and the associated plans, when requested.

2.02   Permit Application

Any party requesting such permit shall file written application therefore with the City before construction is proposed to start. Such application shall be made on a standard City form provided for that purpose, and shall include:

(a) The name, address, phone, and email of the applicant (and the name and address of property owner(s) if different than applicant);
(b) The name, address, phone, and email of the owner(s) of the property abutting the street where the work is proposed;
(c) The street location of the proposed work, giving the street address or legal description of the property involved;
(d) A detailed plan showing the dimensions of the abutting properties and the dimensions and location of all existing and/or proposed facilities and other pertinent features necessary to understand the proposed work;
(e) The plan shall also show the location of buildings, loading platforms or roof overhangs (if significant), and facilities being served or to be served by the new construction.

The City may require, at their discretion, the filing of any other information when in their opinion such information is necessary to properly enforce the provisions of these Standards or other applicable codes.

2.03   Permit Issued

No permit shall be issued until the proposed work has been approved by the appropriate official. No plan shall be approved nor a permit issued where it appears that the proposed work, or any part thereof, conflicts with the provisions of these Standards or any other applicable codes of the City of North Bend, nor shall issuance of a permit be construed as a waiver of the Zoning code or any other code requirements concerning the plan.

A fee in an amount as designated by the City’s fee schedule and/or deposit to cover review time for staff and applicable City consultants shall accompany all applications for permits. Payment in advance of all applicable fees and charges shall be a condition to permit issuance.
2.04 Submittal Requirements

A. General

Detailed plans, prepared and sealed by a licensed engineer, shall be submitted to the City for review and approval prior to the commencement of any construction. Applicant’s engineer shall be a professional engineer, registered as such in the State of Washington. The City shall, prior to the issuance of construction permits, approve the final plans. Plans shall include, as applicable all aspects of the project, including, but not limited to those items identified by the City. Specifications shall be required and submitted with the plans if general notes do not adequately cover the project requirements. A submittal checklist is included in the appendices of these standards. Following the standards in accordance with the submittal checklist will help ensure a timely review of the proposed project and keep review costs to a minimum.

Combining Plans - Water, sanitary sewer, and storm drainage designs (complete plan and profile) shall be on separate plan sheets, although alignments of all Utilities shall be shown on each utility plan. Plan sets for all three Utilities can be combined for small projects. Designs for water and sewer can be combined on the same plan sheets if plan scale is 1” = 10’, 1” = 20’, or 1” = 30’. Contact the Public Works Director for approval to combine plans.

All plan sheets shall include a City approval block, 2 inches high by 4 inches wide:

<table>
<thead>
<tr>
<th>CITY OF NORTH BEND PERMIT#_________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>THESE PLANS ARE APPROVED FOR CONFORMANCE</td>
</tr>
<tr>
<td>WITH THE CITY OF NORTH BEND PUBLIC WORKS</td>
</tr>
<tr>
<td>DEPARTMENT REQUIREMENTS TO THE BEST OF MY</td>
</tr>
<tr>
<td>KNOWLEDGE.</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>CITY ENGINEER OR PUBLIC WORKS DIRECTOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE</td>
</tr>
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</table>

All plans are to be submitted to the City for review. Any necessary easements or dedications shall be submitted for review along with the plans. In addition to engineered plans, specific engineering reports shall also be submitted. The following summarizes report requirements.

B. Traffic Impact Analysis (TIA): A TIA is required for projects that impact traffic volumes, safety, and performance. At a minimum, any project that will increase the PM Peak Hour traffic by more than 10 trips per hour shall submit a TIA. The TIA shall be completed by a licensed engineer in general accordance with the outline provided by the Public Works Department and Section 3.09 of these Standards. The scope of the TIA will be determined by the city engineer, based on the proposed impacts. Intersection Level of Service (LOS) impacts shall be analyzed in the TIA for all intersections wherein the impact is greater than 10 trips per hour, during the PM Peak Hour. A TIA may also be required where requested by the city engineer, based on a project’s impacts to vehicle turning movements, parking, sight distance, access location, or other.

C. Geotechnical Report: Geotechnical engineering reports shall be prepared by a licensed geotechnical engineer and shall cover all portions of the project within his/her expertise including site history; geologic structures; surface conditions; subsurface conditions; geologic hazards per NBMC 14.11; site preparation; structural fill placement and testing; use of onsite materials for
PERMITS

structural fill and backfill; surface and subsurface drainage; dewatering; recommendations for foundation support; excavation conditions and associated hazards; temporary and permanent slopes; design parameters for retaining structures and structure backfill and drainage; and pavement design. The geotechnical engineer shall be retained as the engineer-of-record for the duration of the project.

D. Technical Information Report (TIR): The TIR, including a downstream and off-site analysis, is required for all projects that impact, improve, modify, or expand the surface water drainage system. The TIR shall be prepared by a licensed engineer and shall be formatted to reflect the TIR outline and content presented in the currently adopted surface water design manual.

E. Temporary Erosion and Sedimentation Control (TESC) Plan: Prior to issuance of a right-of-way or other necessary construction permits, the developer shall prepare and submit a TESC Plan for review. The plan shall include location and type of temporary and permanent best management practices (BMPs), depicted on plan sheets, including notes and details to provide for minimum measures necessary to prevent erosion on-site and sediment from discharging offsite and fugitive dust generated as a result of construction activities from entering into the public right-of-way, municipal or private storm water systems including roadside ditches or other conveyances, natural waterways not limited to creeks and wetlands, or environmentally sensitive areas and from otherwise being carried away from the construction area by stormwater or air. If the site is required to obtain coverage under the Washington State Stormwater General Permit, the required Stormwater Pollution Prevention Plan (SWPPP) shall be submitted in lieu of a TESC Plan.
SECTION 3

PUBLIC WORKS CONSIDERATIONS
SECTION 3  PUBLIC WORKS CONSIDERATIONS

3.01  Financial Guarantees

Financial guarantees of the work covered under these standards shall be provided in accordance with the applicable City codes and specifically Title 19.01 NBMC. Public works projects are exempt from this section.

3.02  Hold Harmless Clause

The Developer shall indemnify and hold the City, City officers, City employees, City consultants, and their agents and employees harmless from and against all suits, claims, demands, damages, losses, and expenses as specified in Title 19.01 NBMC. Public works projects are exempt from this section.

3.03  Developer’s Public Liability and Property Damage Insurance

The Developer shall maintain all required public liability and property damage insurance as specified in Title 19.01 NBMC. Public works projects are exempt from this section.

3.04  Compensation & Employer’s Liability Insurance

The Developer shall maintain all required employer insurance and employee compensation as specified in Title 19.01 NBMC. Public works projects are exempt from this section.

3.05  Work Standards

All work performed pursuant to a permit issued shall be done in accordance with standards published in the current Standard Specifications for Road, Bridge & Municipal Construction, State of Washington Department of Transportation (WSDOT), revised as to form to make reference to Local Governments.

The following shall be applicable when pertinent, when specifically cited in the standards, or when required by county, state, or federal funding agencies:

(a)  WSDOT, Local Agency Guidelines (LAG Manual), as amended.
(c)  WSDOT, Construction Manual, current edition.
(d)  American Association of State Highway and Transportation Officials (AASHTO), A Policy on Geometric Design of Highways and Streets, current edition as adopted by WSDOT.
(h)  Associated Rockery Contractors (ARC), Standard Rock Wall Construction Guidelines, 1999.
(j)  WSDOT, Standard Specifications for Road, Bridge, and Municipal Construction, current edition as amended. These will be referred to as the “Standard Specifications”.
(k)  WSDOT, Standard Plans for Road and Bridge Construction, current edition as amended. These will be referred to as the “Standard Plans”.
PUBLIC WORKS CONSIDERATIONS

(n) Institute of Transportation Engineers (ITE), Traffic Engineering Handbook, current edition.
(q) King County, Surface Water Design Manual, or other drainage design manual, as may be adopted.
(r) North Bend Municipal Code (NBMC).
(s) North Bend Stormwater Comprehensive Plan, December 2013.
(u) American with Disabilities Act (ADA) regulations as required by The United States Department of Justice Civil Rights Division.

Precedence: In case of conflicting standards, codes, or other provisions, the first mention below shall have precedence.

(1) City Approved Changes
(2) Developers Agreement
(3) Conditions of Approval
(4) City of North Bend Public Works Standards
(5) Other Applicable City Municipal Codes
(6) Special Provisions
(7) Plans and Standard Details
(8) Standard Specifications, including amendments
(9) Standard Plans

3.06 Administrative Adjustments

A. Adjustments from these standards may be granted by the Director upon evidence that such adjustments are in the public interest and that requirements for safety, function, fire protection, appearance and maintainability based upon sound engineering judgment are fully met. Adjustment requests for subdivisions should be proposed at preliminary plat stage and prior to any public hearing or land use decision. Adjustments must be approved prior to approval of the engineering plans for construction. Any anticipated adjustments from these standards which do not meet the International Fire Code shall also require concurrence by the fire marshal. Decisions by the Public Works Director are final; no appeals will be allowed.

B. Application for Adjustment. Application for an adjustment shall be filed with the Director in writing and shall be accompanied by an appropriate fee as established by resolution, to pay for the cost of processing the application. All applications shall describe the adjustment, with specific references to the sections being requested for adjustment, contain a statement as to why the adjustment is necessary, and why it would meet the criteria of this chapter. The application shall also contain scaled drawings of the affected area, abutting roads, and all property within 300 feet thereof.
3.07 Non-Interference

The developer shall be responsible for minimum interference with:

- Traffic, including pedestrians
- Fire Facility Clearance
- Adjoining Property
- Utility Facilities
- Natural Surface Drainage

Prior to construction, these items are to be discussed with the City Public Works Department, and/or City Fire and Police Departments and/or the City Building Official, and special provisions may be included in any applicable City Permit(s).

3.08 Required Frontage Improvements

Except as specified herein, the developer shall construct the required frontage improvements from the center line of the existing right-of-way outward toward the developer’s property line. The required improvements shall be designed and constructed per the requirements of these standards unless additional improvements are required by an adopted Comprehensive Plan or other City Council adopted plan or requirement.

If the one-half of the right-of-way opposite the subject property has not been improved to the minimum standards herein, the developer shall install improvements in the right-of-way as follows:

A. The developer shall improve the half of the right-of-way abutting the subject property in accordance with these standards (“frontage improvements”), and

B. The developer shall further construct the roadway on the opposite side from the development, at the discretion of the Public Works Director, excluding pedestrian improvements, to provide the minimum width of travel lanes and parking lane as described in the Standards, and to provide a minimum total width of 20 feet for fire access. Improvements include storm drainage construction, which may consist of filling drainage ditches and installing storm drainpipe and catch basins, asphalt tapers, and channelization, as required by the Public Works Director.

3.09 Traffic Impact Analysis

A. General

To adequately assess a development traffic impact on the transportation system and level of service (LOS), the public works department may require a traffic impact analysis (TIA). The requirement for a TIA will be based on the size of the development proposed, existing street and intersection conditions, traffic volumes, accident history, community concerns, and other pertinent factors relating to traffic impacts attributable to development projects. All projects, regardless if a TIA is required, shall obtain a certificate of concurrency, per Title 20.12 NBMC, prior to project approval.
B. TIA – When Required

For any project that creates 10 or more new p.m. peak hour trips, a developer shall provide a trip generation and trip distribution report for the project for a distance from the project wherein the new trips fall below 10 p.m. peak hour trips. Further, for projects that add 10 or more p.m. peak hour trips to an intersection of a Major or Minor Arterial, or Collector, the developer shall provide a Traffic Impact Analysis (TIA) for those intersections meeting the requirements of this section. This requirement shall be waived if, in the opinion of the city engineer, there exists current information from the City or another project to adequately assess the project’s impacts.

For development projects that do not trigger the requirement to prepare a TIA, the developer shall perform a minimum analysis of the existing and proposed transportation infrastructure, including identifying any of the following deficiencies, whether existing, or caused by the development, on proposed or existing roadways:

1. Sight distance;
2. Illumination;
3. Pedestrian and bicycle facilities;
4. Parking;
5. Bus stops.

C. TIA Scope of Work

The level of detail and scope of work of a TIA may vary with the size, complexity, and location of the development. A TIA shall be a thorough review of the immediate and long-range effects of the development on the transportation system. TIAs shall be prepared by an engineer licensed to practice in the State of Washington with special training and experience in traffic engineering and who is a member of the Institute of Transportation Engineers (ITE). The Traffic Impact Analysis shall follow the following outline:

1. Project Description and Maps. Provide a copy of the site plan showing the type of development, street system, right-of-way limits, access points, and other features of significance. Also include pertinent nearby off-site information such as locations of adjacent intersections and driveways, land use, etc., and vicinity map showing the transportation system to be impacted by the development. Discuss frontage improvements, dedications, access, etc. Identify horizon years for traffic analysis purposes.

2. Background Information. Identify and describe any current relevant traffic information that describes the characteristics of the transportation system and volumes. Identify expected increases in background traffic volume or pattern changes.

3. Trip Generation and Distribution. Provide explanation and maps to document and illustrate the project’s estimated trips and distribution. Trip generation shall be estimated using the latest edition of the ITE Trip Generation Manual. The methodology for trip distribution shall be clearly defined and discussed in detail. Break out and describe vehicles, pedestrians, bicycle, transit, and other transportation modes.

4. Existing Conditions. Discuss affected street characteristics including functional classification, travel lanes, lane width, shoulders, bicycle and pedestrian facilities, and traffic control at study intersections. Identify safety and access problems including
accident history, sight distance restrictions, traffic control, and pedestrian conflicts. Obtain all traffic data from the City and surrounding jurisdictions, if applicable. If unavailable, the individual firm preparing the TIA shall collect the necessary data to supplement discussions and analysis in the TIA.

(5) Future Traffic. Future traffic conditions Not Including Site Traffic shall be estimated, for the horizon year for project development, including planned transportation improvements and other relevant development projects. Future traffic conditions Including Site Traffic shall be estimated at development completion. These analyses shall address both capacity and safety. A figure will be required showing daily and peak period turning movement volumes for each study intersection. In addition, a figure shall be prepared showing the baseline volumes with site-generated traffic added to the street network. This figure will represent site specific traffic impacts to existing conditions.

(6) Impacts to Traffic Operations. The level of service (LOS) and capacity analysis shall be conducted for each study intersection. If the development is scheduled to be constructed in phases, the TIA shall conduct a LOS analysis for each separate phase. The individual or firm preparing the TIA shall calculate the intersection LOS for each of the following conditions:

(a) Existing peak hour traffic volumes (with figure).
(b) Existing peak hour traffic volumes including site-generated traffic (with figure).
(c) Future traffic volumes not including site-generated traffic (with figure).
(d) Future traffic volumes including site-generated traffic (with figure).
(e) Level of Service results for each intersection for each traffic volume scenario, with table. Table shall show LOS results for a.m. and p.m. peak periods, if applicable. The table shall show LOS conditions with corresponding vehicle delays for signalized intersections (all approaches) and LOS conditions for the critical movements at unsignalized intersections.

(7) Mitigation. The TIA shall include a proposed mitigation plan. The mitigation may be either the construction of necessary transportation improvements, or contributions to the City for the development’s fair share of the costs for identified future transportation improvements. Contributions may include King County MPS, Transportation Impact Fees, or fee-in-lieu fees as may be determined through the project’s SEPA review. The developer may qualify for a reduction in Transportation Impact Fees, if eligible under the credits described in NBMC 17.38.050.

3.10 Dedication of Right-of-Way

If a right-of-way abutting the subject property is not wide enough to contain the required improvements, then the developer shall dedicate as right-of-way a strip of land adjacent to the existing right-of-way, at a width in accordance with these standards.

3.11 Easements

Where City utilities and/or their conveyance systems cross private lands, a public easement shall be granted to the City. The developer will prepare, process, record, and file all easements at no cost to the City. If the property is platted the easement may be conveyed at the time the short plat or final plat is filed. All easements not shown on the plat must be prepared by a licensed surveyor or engineering firm capable of performing such work.
Drainage easements shall be as specified in the currently adopted surface water design manual, but in no cases shall be less than 15 feet in width for a single utility and 20 feet for dual utilities or otherwise as approved by the City. Construction easements shall be 25 feet minimum in total width, including the permanent easement. Where trench depths or utility size dictate, the City may require a wider easement that considers the proximity of adjacent utilities, structures, slopes, or roadways.

The locations of utilities within easements shall be accurately surveyed and staked to guide the construction. Any deviation from this requirement must be approved by the City to prevent offset installation of utilities to encumber future work.

No permanent structures are allowed to be constructed in the easement area. Access to easements for maintenance and/or repair of the utility by the City shall not be restricted or prohibited by fences, rockeries, plantings and other improvements.

In general, all easements shall be located within single lots rather than being split by a lot line. In special circumstances, easements may be located on two adjacent lots with the approval of the Public Works Director.

Easements are required to be submitted in draft, unsigned for review and approval prior to plan or final plat approval, at the City’s discretion. Signed copies are required prior to final approval. Easements will be filed by the developer upon satisfactory completion of the work.

All work on easements shall be performed strictly in accordance with easement provisions. Easements shall be restored equal to or better than original condition. The Developer shall do no work on easement areas until specifically authorized by Engineer.

### 3.12 Inspection

#### A. Construction Control

Work performed for the construction or improvement of City roads, commercial sites, residential neighborhoods, and/or utilities whether by a private developer, by City forces, or by a City contractor, shall be done to the satisfaction of the City and in accordance with approved plans. It is emphasized that no work shall start until such plans are approved, permits issued, and preconstruction meeting held, and until financial securities and insurance have been provided per applicable city codes for the various aspects of construction. The City shall approve any revisions to the approved plans before revisions are implemented. Failure to acquire the City’s approval for any work can result in removal or modification of construction at the contractor’s or developer’s expense.

The City requires a developer and/or their contractor to retain an engineer licensed to practice in the specialty of geotechnical engineering and that this engineer be kept on retainer for their representative project during the entire construction process. The geotechnical engineer shall make periodic visits and inspections for, but not limited to, trench and foundation excavation and backfill, preparation of road subgrade, roadway fill and compaction efforts, slope construction and stability, surface and subsurface drainage, erosion control, and any other pertinent issues that arise throughout construction. Sites that are required to obtain coverage under the Washington State Construction General Permit or an Individual Permit shall abide by inspection frequencies, discharge monitoring, and reporting requirements specified in those applicable state permits.
B. General

The City shall exercise full right of inspection of all excavating, construction, and other invasions of City right-of-way or public easements. The City Engineer or designated official shall be notified on the working day prior to commencing any work in the City’s right-of-way or public easements. The city engineer and/or his authorized representative is authorized to and may issue immediate Stop Work Orders in the event of noncompliance with this chapter and/or any of the terms and provisions of the permit or permits issued hereunder.

Timely notification by the developer as noted herein is essential for the City to verify thorough inspection that the work meets the standard. Failure to notify in time may oblige the City to arrange appropriate sampling and testing after-the-fact, with certification, by a professional engineer. Costs of such testing and certification shall be borne by the developer. At the time that such action is directed by the city engineer, the city engineer may prohibit or limit further work on the development until all directed tests have been completed and corrections made to the satisfaction of the city engineer. If necessary the City may take further action as set forth in the North Bend Municipal Code (NBMC).

It is the responsibility of the developer or their agents to have an approved set of plans and any necessary permits on the job site whenever work is being performed. All specific inspections, test measurements or actions required of all work and materials are set forth in their respective chapters herein. Tests shall be performed at the developer’s expense.

C. Requirements for subdivision, binding site plan, commercial and right-of-way land use inspection.

On all road and drainage facility construction, proposed or in progress, which relates to subdivision, binding site plan, commercial and right-of-way development, inspection will be done by the city engineer. Unless otherwise instructed by the city engineer, construction events which require monitoring or inspection are identified as follows:

1. Preconstruction Conference. Three working days’ prior notice. Conference must precede the beginning of construction and include contractor, design engineer, utilities, and other parties affected. Plan approvals and permits must be in hand prior to the conference.

2. Clearing and Temporary Erosion/Sedimentation Control. One working days’ notice prior to initial site work involving drainage and installation of temporary water retention/detention and sedimentation control. Such work to be in accordance with the currently adopted surface water design manual and the approved plans.

3. Erosion and Sedimentation Control. Within 48 hours of a significant rain event, defined as greater than 0.25 inches of rain within 24 hours, to ensure proper function of temporary Best Management Practices (BMPs) installed onsite.

4. Utility and Storm Drainage Installation. One working days’ notice prior to trenching and placing of storm sewers and underground utilities such as sanitary, water, gas, power, telephone, and TV lines.

5. Utility and Storm Drainage Backfill and Compaction. One working days’ notice before backfill and compaction of storm sewers and underground utilities.
(6) Subgrade Completion. One working days’ notice at stage that underground utilities and roadway grading are complete, to include placement of gravel base if required. Inspection to include compaction tests and certifications described in the WSDOT Standard Specifications.

(7) Curb and Sidewalk Forming. One working days’ notice to verify proper forming and preparation prior to pouring concrete.

(8) Curb and Sidewalk Placement. One working days’ notice to check placement of concrete.

(9) Crushed Surfacing Placement. One working days’ notice to check placement and compaction of crushed surfacing base course and top course.

(10) Paving. Three working days’ notice in advance of paving with hot mix asphalt or Portland cement concrete.

(11) Structural. Three working days’ notice prior to each critical stage such as placing foundation piling or footings, placement and assembly of major components, and completion of structure and approaches. Tests and certification requirements will be as directed by the city engineer.

D. Final Construction Inspection

Fifteen working days’ notice prior to overall check of road or drainage project site, to include completion of paving and associated appurtenances and improvements, cleaning of drainage system, and all necessary cleanup and site restoration. Prior to final approval or occupancy, to ensure proper installation of permanent stormwater facilities, the city engineer shall verify that a maintenance plan is completed and responsibility for maintenance is assigned for stormwater treatment and flow control facilities. The City shall, upon completion of a satisfactory final inspection, issue a letter of completion for the project. Final inspection will not take place and the letter of completion will not be issued unless the developer is current with all required fees.

E. Final Maintenance Inspection

Thirty days’ notice prior to the end of the maintenance period. Prior to release of the maintenance guarantee, there shall be successful completion of the maintenance period as described in Section 3.01, repair of any failed facilities and the payment of any outstanding fees.

3.13 Utilities

The plans show the approximate locations of various existing utilities known to the engineer, such as gas lines, water mains, storm drainage, power lines, telephone lines, television cables, and other obstructions based on information obtained from various sources. This information is not guaranteed to be accurate, and the Developer is directed to check for interferences and obstructions by inquiry from the different utilities and by underground exploration ahead of his regular excavation. Prior to performing excavation, the developer shall be responsible for having all utilities located in accordance with RCW 19.122. The utilities one-call underground locating center phone number is 1-800-424-5555 or 811.

With the exception of other requirements, agreements, or regulatory stipulations, the City shall have the authority to approve the depth, orientation, height, and location of all utilities located within the public...
rights-of-way and public easements. Gravity systems (sewer and storm drainage) shall have precedence for location over other utilities. The location of fire hydrants shall be as directed by the Fire Marshall.

The City does not purport to know the size, type, material, function, or location of existing underground utilities. The developer shall be responsible for having all utilities identified and located during design and plan development, and for providing timely notification of all utilities in advance of any construction in right-of-way, easements, and private property. Further, the developer shall be responsible for contacting the affected utility owners to acquire utility information and procedures for moving, abandoning, relocating, repairing, working around, shutting down, or otherwise impacting the utilities prior to commencing construction. The Developer shall excavate around and under service pipes with special care and shall support and maintain them in service. Where it is necessary to cut, move or reconnect any service lines, arrangements shall be made with the respective utility. Work shall proceed and be coordinated and scheduled to cause the least amount of service disruption as possible.

3.14 Erosion, Sedimentation, and Dust Control

The developer shall be responsible for the implementation of the approved Temporary Erosion and Sedimentation Control (TESC) Plan during the course of the work and for continually updating the TESC Plan to address changing site conditions, BMP effectiveness, and employ all or any additional measures to reduce on-site erosion and prevent off-site sedimentation. Prior to final acceptance of the work, all disturbed areas shall be either fully or stabilized. Removal of temporary erosion and sedimentation controls cannot take place until 70 percent of the seeded area have established, constituting a stabilized site condition.

The developer shall sprinkle water as necessary to keep the dust down. This sprinkling shall be maintained until the project is accepted. Sprinkling shall be kept to a minimum and shall not produce runoff from the site. On paved streets, if dust becomes a nuisance when backfilling is completed, the developer shall vacuum sweep the portions of streets being used for traffic. Flushing of streets shall not be permitted without prior City approval.

3.15 Traffic Control

Public safety is of paramount importance. Primarily, traffic control shall be provided and implemented for the benefit and safety of the traveling public, not for the convenience of the contractor or suppliers. However, timely completion of all work within existing roadways and easements is also important and therefore, a balance must be reached for each individual project. Disruption of traffic shall be held to the minimum necessary to complete the work.

The developer shall be responsible for interim traffic control during construction on or along traveled roadways. The City may, at their discretion, require that the developer submit a detailed traffic control plan for review and approval. Traffic control measures shall follow the guidelines of the WSDOT Standard Specifications and applicable state law. All barricades, signs, and flagging shall conform to the requirements of the MUTCD. Signs must be legible and visible and shall be removed at the end of each workday if not applicable after construction hours.

When road closures and detours cannot be avoided the developer shall notify the City in advance. The City may require a Detour Plan to be prepared, submitted, and approved prior to closing any portion of a City roadway. Advance public notice for those affected by the closure shall be required and carried out by the developer.
3.16 Pedestrian Access

All road improvement and development projects shall include approved pedestrian access as part of the design in full compliance of the ADA regulations and PROWAG guidelines. The City may require the developer to install public pedestrian walkways, other than sidewalks as otherwise required by these standards, where the walkway is reasonably necessary as a result of the development activity.

3.17 Replacement of Damaged or Substandard Existing Improvements

For properties that have existing abutting and/or adjacent street improvements, the developer shall remove and replace any damaged or substandard improvements in conjunction with the development of the property. Replacement shall include, but not be limited to, cracked or buckled curb, gutter, and sidewalk; landscaping; storm drainage; street trees, and curb ramps.

3.18 Pavement Restoration

In order to maintain the pavement surface of existing city streets, projects constructing road widening, frontage improvements, and/or utility installations shall be required to restore the pavement to a continuous mat of asphalt surfacing. All such projects shall provide a full-width 2-inch-thick pavement grind and overlay, plus any necessary prelevel course, for the entire length of the widening, frontage improvements, or longitudinal utility work, or where the number of transverse pavement cuts for utility trenches exceed two.

The requirement for full-width overlay may be waived by the city engineer based on the condition of existing pavement, roadway drainage, and the extent of required changes to channelization.

3.19 Street Signs, Pavement Markings, and Traffic Control Devices

The developer shall pay for design and installation of all street signs, pavement markings, and traffic control devices in the location and manner approved by the City.

3.20 As-Built Drawings

A. General

Developers who install systems within, on, or below the City’s public rights-of-way, public easements, or tracts to be dedicated to the City, shall furnish the City with accurate surveyed drawings, plans and profiles, showing the finished location, orientation, and curvature of all aboveground and underground structures installed, including existing facilities where encountered and abandoned installations. Horizontal locations of utilities are to be referenced to street centerlines, as marked by survey monuments, and shall be recorded to within one-tenth (0.1’) of a foot. Rim and invert elevations shall be recorded to within one one-hundredth (0.01’) of a foot. The depth of buried utilities may be referenced to the elevation of the finished street above said utility, with depths to the nearest one-tenth foot being shown at a minimum 50-foot interval along the location of said utility. Use Washington Coordinate System NAD-83/91–North Zone as the basis of bearings for all surveys. Prepare survey according to NAVD 88 vertical datum and state that it was the datum used.

Prior to submittal of the final signed as-built drawings, the developer shall submit preliminary as-built drawings for review. The preliminary drawings shall identify completed work differing from the approved drawings by use of strikethroughs, colored markings, cross-outs, redlines, etc.
Once approved, said markings and items not constructed shall be removed prior to submitting the final signed drawings.

Such as-built drawings shall be submitted to the City within 30 calendar days after completion of the work, and prior to release of performance guarantees. As-built drawings shall be stamped, signed and dated by an engineer or surveyor currently licensed in the State of Washington, who is familiar with the project. Said engineer or surveyor shall attest to the accuracy of the information shown on the drawings, on an approved signature block placed on every sheet. An as-built drawing certification block is as follows:

| AS-BUILT CERTIFICATION: |
| I HEREBY DECLARE TO THE BEST OF MY KNOWLEDGE THAT THE INFORMATION SHOWN HEREON REFLECTS THE “AS-CONSTRUCTED CONDITIONS”. THIS CERTIFICATION IS BASED UPON WORK PREPARED IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL ENGINEERING AND/OR SURVEYING PRACTICES. |
| NAME, P.L.S & P.L.S. NUMBER: |
| DATE: |

P.L.S. STAMP AND SIGNATURE HERE

As-built drawings shall be submitted on permanent, stable reproducible Mylar, as well as electronically per the electronic submittal requirements of NBMC 20.02.006. All data as shown on the drawings shall be “fixed line” or ink. Sticky back (glue) reproductions or “sepia” Mylar shall not be considered acceptable. Electronic files shall also be provided to the City, specifically actual data files, which include files produced using AutoCAD and/or ArcGIS software and an original PDF of the plan set, no scanned images. All file format submittals will be reviewed and approved by the Public Works Director.

B. Requirements

All pipe lengths and dimensions are based on horizontal distances, unless slope is too steep to measure horizontal distance, inspector should note that length is “slope distance”.

Reference or dimension location from right-of-way centerline for utility features in the public right-of-way, or from property line for utility features located within easements.

As-built information shall be recorded on plan and profile views of the contract drawings. The profile view shall note any changes from the design finished grade over each pipeline.

As-built plans shall be submitted to the City using the approved plan set as the basis for the redlined as-built plans. An as-built plan set in digital format shall also be submitted. The digital format shall be in the most current AutoCAD Release in use by the City. The “.DWG” files(s) shall be submitted on CD-ROM.
Storm Drainage System:

(1) Storm Mains: Length (center of catch basin/manhole to center of catch basin/manhole), diameter, material, slope, direction of flow, note “private” if applicable. Show private systems going to apartments, condominiums, commercial sites, and joint-use side sewers. Label private system lines as “PRIVATE SYSTEM”. Other than joint-use systems, do not show single family private systems, other than stub from public main to property line.

(2) Storm Stubs: Lengths, depth, material, station. List pipe slope and size.

(3) Catch basin/ Manholes: Structure ID number, rim elevation, invert elevations, and size.

(4) Existing Structures: Where new pipes connect to existing structures, it shall be indicated on the drawing.

Water System:

(1) Water Mains: Length (center of fitting to center of fitting), diameter, material, zone, class of pipe, type of joint restraint (if any), depth, note “private” and “fire line”, if applicable.

(2) Water Fittings: Call-outs in order, # of each, diameter, fitting, joint type (e.g., 2–8” 45° bend, M.J.).

(3) Water Services: Size, show location on plan.

(4) Hydrants: Distance from valve to hydrant, depth of bury (e.g., 5’ bury).

Sewer System:

(5) Sewer Mains: Length (center of manhole to center of manhole), diameter, material, slope, direction of flow, note “private” if applicable. Show private systems going to apartments, condominiums, commercial sites, and joint-use side sewers. Label private system lines as “PRIVATE SYSTEM”. Other than joint-use systems, do not show single family private systems, other than stub from public main to property line.

(6) Sewer Stubs: Lengths, depth, material, station (stationing of stubs referenced from downstream manhole), distance from property line. List pipe slope and size.

(7) Sewer Manholes: Manhole ID number, rim elevation, invert elevations (indicate direction of flow IN or OUT), drop (if applicable), and size.

(8) Sewer Cleanouts: Station, invert elevation, top elevation.

(9) Existing Sewer Structures: Where new pipes connect to existing manholes, it shall be indicated on the drawing.
SECTION 4
STREETS, PEDESTRIAN
PATHS, AND BIKEWAYS

Planning, Designing, and Constructing

Transportation Systems for Driving,

Riding, and Walking...
SECTION 4  STREETS, PEDESTRIAN PATHS, AND BIKEWAYS

4.01 General Considerations

Street improvements are required for short plats, plats, binding site plans, planned neighborhood districts, development agreements, conditional uses and all new construction, as well as substantial construction improvements requiring a building permit when the existing street is not improved to current city standards. “Substantial construction improvements” shall be defined to mean improvements worth more than 50 percent of the assessed value (Member of the Appraisal Institute [MAI] appraised value may be used at owner choice) of the original building. The intent of this chapter includes the following:

1. To ensure that street design and street improvements are consistent with, and implement applicable goals and policies of, the comprehensive plan.

2. To provide a safe street system that balances vehicular uses with transit, pedestrian, and bicycle uses.

3. To promote a traditional street system that maximizes vehicular route options, effectively carries vehicular traffic, and seeks to minimize congestion points.

4. To provide a street system that realizes multiple roles and opportunities in addition to carrying vehicles. These include, but are not limited to:
   a. Integrating and connecting neighborhoods and areas throughout the community, while not restricting the capacity or natural functions of wetlands, floodways, creeks and natural areas.
   b. Recognizing streets as a vital public space, to be completed with streetscape amenities like sidewalks, planter strips, street trees, curbs, and lighting.
   c. Positively shaping the form of the community.
   d. Promoting pedestrian, bicycle, and non-motorized transportation options, consistent with implementation of the comprehensive plan.

5. To provide fundamental street design standards, yet recognize that said standards will need to be complemented with specific street design and/or street construction details.

6. To provide the city engineer flexibility in applying street design and street improvement standards to meet existing conditions related to infill development; street repair/rehabilitation; and extensions of existing roadways, including street design, improvement, and construction limitations and opportunities associated therewith.

Development of properties on or tributary to substandard or unsafe (safety issues) roadways may, depending on the size and type of development, be cause for “off-site” improvements to the substandard or unsafe corridors, to include road drainage facilities. The city engineer shall determine when and if such conditions exist. At a minimum “half street improvements” will be required as a condition of development in and along the entire property as it abuts City rights-of-way.

This chapter provides minimum street design standards. Higher design and construction standards may be warranted due to localized design and construction parameters.
4.02 Streets

A. General

All plans submitted for channelization, traffic control, and road construction or reconstruction shall be prepared by a professional engineer licensed in the State of Washington. All street design must provide for the maximum traffic loading and capacity conditions anticipated. The width and grade of the pavement must conform to specific standards set forth herein for safety and uniformity.

The Fire Marshal shall approve the number and location of fire hydrants for new development and shall identify areas of new development that may be required to be sprinkled due to access or fire flow constraints.

In areas where the city specifies paving widths or improvement standards different than those listed in this chapter, the below standards shall be followed except where specifically modified elsewhere.

B. Design Standards

The design of streets and roads shall depend upon their type and usage. The design elements of streets shall conform to City standards as set forth herein and current design practice as set forth in Section 3.05. On existing streets, design speed shall be set at 5 miles per hour above the posted speed limit. In locations where the speed limit changes within 500 feet of the property, the higher value shall be used.

Street layout and plat design shall create efficient well-connected streets to integrate and interconnect the community of North Bend. Residential local access streets should provide for connections between neighborhoods and to collector streets whenever feasible. A grid to modified grid pattern of interconnected streets is the required pattern for new residential, commercial, and other development.

A number of geometric shapes should be utilized to enrich the modified grid form, for example: curves, triangles, greens/commons, T-intersections, and wedges. Intermittent curvilinear streets are encouraged to provide variation and interest as part of the modified grid network. Cul-de-sacs will be allowed only when physically constrained by sensitive areas such as wetlands or excessive natural grades, or to efficiently serve difficult-to-access areas due to other natural constraints. See Section 4.03D for the Minimum Street Design Standards.

(1) Street profile grade should conform closely to the natural contour of the land. In some cases, a different grade may be required by the city engineer. Unless otherwise approved by the City, the minimum longitudinal slope shall be 0.50 percent; the maximum longitudinal slope shall be 15.0 percent. For Local Access streets, Maximum grade may be exceeded for short distances of 300 feet of less, upon showing that no practical alternative exists. Grade shall not exceed 20 percent. All roads with grades exceeding 15 percent shall be paved with Portland cement concrete.

(2) Transverse slope of roadway shall be two percent each way from centerline of roadway.
STREETS, PEDESTRIAN PATHS, AND BIKEWAYS

(3) The pavement and right-of-way width depend upon the street classification, and the transportation needs of the corridor. Section 4.03D shows the minimum widths allowed. Street widths shall be measured from face of vertical curb to face of vertical curb on streets with cement concrete curb and gutter.

(4) In areas of questionable soil or ground conditions the public works director and/or city engineer may require the owner or developer to retain a licensed soils engineer to make soils tests and to provide additional recommendations for design of the sub-base and roadway sections. Over-excavation and backfill of roadway sub-base with appropriate material may be required to create a proper roadway base as deemed necessary by the public works director and/or city engineer.

(5) In special circumstances, as may be specifically approved/required by the city engineer, due to local conditions and/or geometric restrictions, paving widths or improvement standards may be required which are different than those minimums specifically listed herein.

(6) City policy generally requires connectivity of roadways within plats and throughout the City. To facilitate future development within the City, streets and rights-of-way shall be planned to give access to or permit the future subdivision of adjoining land. Temporary cul-de-sacs may be allowed when future extensions of the streets are anticipated. Streets shall be extended to the plat boundary to accommodate extensions into future subdivisions or adjoining land and the resulting temporary dead end street shall be barricaded pursuant to WSDOT standards, signed as described in Section 4.12, and provided with a temporary cul-de-sac bulb.

Temporary cul-de-sacs shall be designed pursuant to North Bend Standard Plan T-13. The cul-de-sac shall be paved. Removal of the temporary constructed cul-de-sac and construction of the extension of the curbs, gutters, and sidewalks, shall be the responsibility of the developer who extends the road. In designing streets, existing development, proposed development and possible future development shall all be considered in the recommendation of right-of-way widths, street widths, paving sections, sidewalks and other applicable standards.

(7) Street jogs with centerline offsets less than 125 feet are prohibited.

(8) Street grids are typically rectangular (“rectilinear”) but may include square patterns, modified rectilinear, or other distinct geometric shapes, and must connect with existing streets to form a cohesive network unless circumstances would prohibit such connections. Street rights-of-way shall be provided to a property edge for future connections.

Grid to modified grid blocks shall generally not exceed approximately 310 feet in width (alley) and 400 feet in length, centerline-to-centerline, except where in the opinion of the city engineer, extraordinary conditions justify a departure from the maximum. City-wide block sizes should allow a variety of lot widths and depths. Where necessary due to environmental constraints or other extenuating circumstances, block sizes may be extended in width or length, but shall not lose a pedestrian orientation and human scale. Street corridors, whether straight or moderately curved, should range in length from 500 to 1,000 feet, and then terminate in a T-intersection or otherwise. “Drag strip,” or continuous straight residential and nonresidential streets, shall be avoided.
(9) Streets shall conform to all requirements of the latest edition of the International Fire Code as adopted and amended by the City, and all requirements of the Fire Marshal.

(10) Access onto State Route 202 between milepost 28.28 and 30.17 shall meet or exceed WSDOT access standard requirements.

(11) In addition to the above requirements, street design shall incorporate the following minimum requirements:

(a) All new utility systems such as power, gas, cable TV, fiber optics, and telephone shall be buried, except where topography or site conditions prohibit reasonable installation. See NBMC 19.06.060 for exceptions. Design and installation of the system shall be done by the franchised utility company. Design shall be submitted to the city engineer for review and approval prior to installation. All existing and new utilities, such as manholes, catch basins, valve boxes, and monument cases, shall be adjusted to finished roadway grade;

(b) Roads are to be sawcut before permanent patch is made or new AC pavement is installed abutting the existing road;

(c) The street system (in residential subdivisions and short subdivisions) shall be laid out with a minimum number of intersections with arterial streets. Arterial streets shall not intersect with other arterial streets at intervals closer than one thousand feet and no streets shall intersect at intervals closer than one hundred twenty-five feet, unless, in the judgment of the city engineer, an exception to this rule would be in the public interest and welfare;

(d) All streets, sidewalks, and alleys, both public and private, shall conform as a minimum to one of the herein referenced construction standards and shall be adjusted as necessary to match existing facilities, service the proposed development, and meet the needs of anticipated future development.

(e) All topsoil, organic, and structurally unsuitable soils shall be removed from beneath the proposed street and sidewalk section.

C. Submittal of Plans

(1) All construction plans shall be submitted to the City and shall include the required minimum information, as identified in the City’s standard plan submittal checklist.

(2) The Standard Plan Notes, as shown and further referenced in the appendices, shall be included or referenced on any plans submitted to the City for construction approval dealing with street or drainage design.

4.03 Road Classifications

A. General

City roads are classified functionally as indicated in the Comprehensive Plan and as shown herein in Section 4.03D. Function and location are the controlling element for classification and shall govern right-of-way, road width, and road geometrics. Other given elements are typical.
B. Road Type

Roads are classified, per the GMA Comprehensive Plan, as follows:

- Major Arterials.
- Minor Arterials.
- Collector Streets.
- Local Access Streets.

When soil conditions support Low-Impact Development (LID) approaches, bioswales, rain gardens or similar technologies should be used within the traditional landscape strip area of streets, and specific allowances are shown below in Section 4.03D for Residential Local Access Streets. Other roadway sections may choose LID approaches and modifications to typical standards and shall be approved by the CED director and public works director.

C. Low Impact Development Street

In accordance with NBMC 18.50, developers are encouraged to implement low impact development practices. A suggested cross-section drawing has been included in these standards. Development that proposes such systems shall show consistency with the most current King County Surface Water Design Manual (KCSWDM), and shall meet the requirements of city code. The proposal shall be approved by the CED director and the public works director.

Developers are encouraged to propose street designs that implement the intent of low impact development using the suggested cross-section as a starting point. Requirements for LID stormwater approaches (in addition to or in conjunction with the guidance documents referenced above) are as follows:

1. Landscaping shall include native, noninvasive, low-maintenance plants suited to the moisture regime of their location within the LID treatment.

2. Street trees shall be provided per the street tree standards in Chapter 18.18 NBMC. Bio-channels of 6 feet or wider shall stagger location of trees in swale area on either side of the swale.

3. Proposed LID features and landscape strips shall be comprised of at least 60 percent native vegetation with the remaining as grass, unless otherwise approved by the director due to specific site circumstances.

4. Minimum plant spacing (o.c.) for most species shall be as follows:

   (a) Herbaceous plants – 12 inches;
   (b) Large shrubs and small trees – 4 feet to 10 feet;
   (c) Shrubs – 2 feet to 4 feet;
   (d) Groundcover – 12 inches;
   (e) Seeding with approved mixture in SWDM Table 6.3.1.C to the prepared seed bed is required at a rate of 80 pounds/acre.
(5) Construction and plant installation must be completed prior to completion of the project. An 80 percent survival of all grasses and plants immediately and two years following installation is required, consistent with NBMC 18.18.150, Maintenance of Plant Materials.

(6) Maintenance of vegetation and stormwater function shall be the responsibility of the homeowners’ association.

(a) The applicant shall develop a long-term maintenance program, to be reviewed and approved by the city prior to final plat approval, with clear and enforceable guidelines to best maintain the LID features of the plat. The applicant shall provide a guide that may be supplemented and distributed by the homeowners’ association to lot owners that explains the purpose and maintenance of these areas within the plat.

(b) A note(s) shall be placed on the face of each final plat that clearly describes and details the long-term maintenance requirements of the LID features of the plat and provides for guaranteed performance of said features. These requirements shall also be included in the neighborhood’s covenants, conditions and restrictions (CC&Rs), requiring proper assessments for maintenance and upkeep of said features. The final plat note shall be clear that in the event the homeowners’ association does not properly maintain said features, the city will perform the necessary maintenance and charge the owners’ association for time and expense of the maintenance work.

(c) An educational packet, to be reviewed and approved by the City of North Bend prior to final plat approval, shall be provided to all new homeowners explaining the hydrologic function and the long-term maintenance needs and requirements of the LID features.

(7) Sidewalks may be constructed of permeable concrete as approved by the PW Director and CED Director.

(8) Vertical curbs shall be provided adjacent to parking and planter strip areas. Flush curbs may be used when adjacent to an LID feature. Curbs shall be reviewed and approved based upon adjacent uses by the CED and public works director.

(9) LID stormwater facilities designed for infiltrating runoff shall be constructed in a manner that minimizes the impact on the underlying soils’ ability to infiltrate. In addition, LID projects that rely on the infiltration of stormwater runoff shall include provisions for collecting and conveying overflow runoff (runoff that does not infiltrate quickly enough to prevent localized flooding) away from the streets and homes.

D. Street Design Standards

Specific design criteria for arterial, collector, and local access streets are included in Tables 4.1 through 4.5. Special design criteria have been established for sections of North Bend Way, Cedar Falls Way, 468th Avenue SE, SE 140th Street, and Park Street, dependent upon the location. Table 4.6 identifies AASHTO sight distance criteria, based on design speed. Table 4.7 is a separate table provided for woonerf design criteria.
STREETS, PEDESTRIAN PATHS, AND BIKEWAYS

(1) Specific sections of North Bend Way and other arterials have unique design criteria, as shown in Tables 4.1 and 4.2:

(a) Cedar Falls Way;
(b) North Bend Way (Between North Bend Way Bridge and East Park Street);
(c) North Bend Way (East Park Street to Cedar Falls Way and at the SE Mount Si road intersection adjacent to properties zoned neighborhood business (NB) to the east and west to cemetery);
(d) North Bend Way (Cedar Falls Way to SE 140th Street, excluding SE Mount Si road intersection); and
(e) North Bend Way (SE 140th Street to 468th Avenue SE).

(2) Specific sections of various collector streets have unique design criteria, as shown in Tables 4.3 and 4.4:

(a) 468th Avenue SE (North of SE 146th Street to SE 14th Street);
(b) 468th Avenue SE (North of SE 144th Street to SE Middle Fork Road);
(c) SE 140th Street from North Bend Way to Middle Fork Road intersection;
(d) Park Street from Bendigo Boulevard to Main Street;
(e) Park Street from Main Street to Healy Avenue S; and
(f) Park Street from Healy Avenue S to North Bend Way.

(3) Also, local access streets have been divided into several specific classifications:

(a) Residential Local Access Streets and Cul-de-Sacs for Cottage Housing and Multiple Family;
(b) Residential Local Access Streets for Low Density Residential;
(c) Residential Local Access Streets – Low-Impact Design, Integrating Stormwater within the Rights-of-Way; and
(d) Woonerf Route for Homes Fronting to Open Space.
### TABLE 4.1

**Arterial/Cedar Falls Way Street Design Standards**

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<tr>
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<td>A. Minimum Right-of-Way</td>
<td>76’</td>
<td>76’</td>
<td>91’</td>
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<td></td>
<td>5 lanes: 66’[^2]</td>
<td>66’[^2]</td>
<td>66’[^2]</td>
</tr>
<tr>
<td>C. Bicycle Lanes</td>
<td>5’</td>
<td>5’</td>
<td>5’</td>
</tr>
<tr>
<td>D. Parking Lanes</td>
<td>As required</td>
<td>As required</td>
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<tr>
<td>E. Concrete Curb &amp; Gutter</td>
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<td>Vertical</td>
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<td>F. Landscape Strips</td>
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<td>7’ min. South Side[^3]{[^6]}</td>
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<td>G. Sidewalks</td>
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<td>8’[^3]{[^4]}</td>
<td>8’ South Side[^3]{[^5]}</td>
</tr>
<tr>
<td>H. Curb Radii</td>
<td>35’</td>
<td>35’</td>
<td>35’</td>
</tr>
<tr>
<td>I. Lighting</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
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<tr>
<td>J. Trail</td>
<td>As required</td>
<td>As required</td>
<td>-</td>
</tr>
<tr>
<td>K. Design Speed[^7]</td>
<td>40 mph</td>
<td>40 mph</td>
<td>35 mph</td>
</tr>
</tbody>
</table>

**Notes:**

[^1]: Within the above parameters, geometric design requirements shall be determined for specific roads consistent with AASHTO.

[^2]: Includes 12-foot-wide left turn lane, or planted median if turn lane is not required.

[^3]: If additional right-of-way width is available/provided, the sidewalk and/or landscaping strip widths shall be increased.

[^4]: Subject to City approval, when arterial is located adjacent to commercial/retail uses, the sidewalk design shall incorporate street tree and/or tree grate design, minimum of 4 feet by 5 feet to match downtown core.

[^5]: Adjacent to the Public Works site, excess forested right-of-way exists and shall be retained. An 8-foot meandering paved trail shall be constructed in lieu of the typical curb/gutter, planting strip and sidewalk.

[^6]: Adjacent to parcels zoned Cottage Residential, a minimum 30-foot landscape buffer shall be provided and dedicated to the City. An existing 15-foot sewer easement exists on the northern edge of the right-of-way and this area shall be planted with Type II landscaping per NBMC 18.18, with due regard to the sewer line. The remaining 15-foot buffer shall preserve existing native vegetation, trees, and significant trees to the maximum extent possible. Supplemental plantings in this buffer shall be required to achieve a Type I landscape standard per NBMC 18.18.

[^7]: Design speed serves as a basis for determining geometric elements of new roads and does not imply posted or legally permissible speeds. Design speed on existing roads is 5 mph over the posted speed limit or as tabulated above, whichever is less.
# TABLE 4.2

North Bend Way Street Design Standards

<table>
<thead>
<tr>
<th>Criteria(1)</th>
<th>North Bend Way (Bridge to East Park Street)</th>
<th>North Bend Way (East Park Street to Cedar Falls Way and at Mt. Si Road along NB Zone(12))</th>
<th>North Bend Way (Cedar Falls Way to SE 140th Street)</th>
<th>North Bend Way (SE 140 Street to 468th Avenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Minimum Right-of-Way</td>
<td>76'</td>
<td>70'</td>
<td>76'</td>
<td>70'</td>
</tr>
<tr>
<td>B. Minimum Pavement Width</td>
<td>50'(2)</td>
<td>50'(11)</td>
<td>44'(2)</td>
<td>44'(2)</td>
</tr>
<tr>
<td>C. Bicycle Lanes</td>
<td>Sharrow(4)</td>
<td>4.5'</td>
<td>5'</td>
<td>5'</td>
</tr>
<tr>
<td>D. Parking Lanes</td>
<td>8'</td>
<td>8' North Side Only</td>
<td>As required</td>
<td></td>
</tr>
<tr>
<td>E. Concrete Curb &amp; Gutter</td>
<td>Vertical</td>
<td>Vertical</td>
<td>Vertical North Side Only</td>
<td>Vertical North Side Only</td>
</tr>
<tr>
<td>F. Landscape Strips</td>
<td>-</td>
<td>Street Trees South Side</td>
<td>13' Bio-Channel North Side(3)</td>
<td>13' Bio-Channel North Side(3)</td>
</tr>
<tr>
<td>G. Sidewalk</td>
<td>13'(3)(5)</td>
<td>13' North Side(3)(5)</td>
<td>8' North Side</td>
<td>8' North Side</td>
</tr>
<tr>
<td>H. Curb Radii</td>
<td>35'</td>
<td>35'</td>
<td>35'</td>
<td>35'</td>
</tr>
<tr>
<td>I. Lighting</td>
<td>(6)</td>
<td>(6)</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
</tr>
<tr>
<td>J. Trail</td>
<td>-</td>
<td>South Side(7)</td>
<td>South Side(7)(8)</td>
<td>-</td>
</tr>
<tr>
<td>K. Design Speed(10)</td>
<td>35 mph</td>
<td>35 mph</td>
<td>35 mph</td>
<td>35 mph</td>
</tr>
</tbody>
</table>

Notes:

1. Within the above parameters, geometric design requirements shall be determined for specific roads consistent with AASHTO.
2. Includes 12-foot-wide left turn lane, or planted median if turn lane is not required.
3. If additional right-of-way width is available/provided, the sidewalk and/or landscaping strip/bio-channel widths shall be increased.
4. Sharrow bike indicator pavement markings shall be provided.
5. Street tree species shall be consistent with downtown core, pursuant to Chapter 18.18 NBMC.
6. Ornamental street light poles and fixtures on North Bend Way shall match downtown core light fixtures.
7. Match existing Tanner Trail section. On south side, street trees shall be of a medium or large species planted in the available swale area.
8. Tree species along Tanner Trail shall be Grand Fir, Douglas Fir, Western Red Cedar, or Dogwood. Native evergreen shrubs shall include Snowberry, Thimbleberry, Red Flowering Currant, Tall Oregon Grape, Nootka Rose, and Oceanspray.
9. Subject to City approval, additional right-of-way may be obtained or utilized on the south roadway edge, for emergency parking on the event of a pass closure or other.
10. Design speed serves as a basis for determining geometric elements of new roads and does not imply posted or legally permissible speeds. Design speed on existing roads is 5 mph over the posted speed limit or as tabulated above, whichever is less.
11. Includes 11-foot-wide left turn lane, or planted median if turn lane is not required.
12. Includes the SE Mount Si Road Intersection adjacent to properties zoned Neighborhood Business (NB) to the East and West to Cemetery.
TABLE 4.3
Collector/468th Avenue SE Street Design Standards

<table>
<thead>
<tr>
<th>Criteria(^{(1)})</th>
<th>Collectors</th>
<th>468th Ave SE – North of SE 146th Street to SE 144th Street</th>
<th>468th Ave SE – North of SE 144th Street to SE Middle Fork Road</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1. Minimum Right-of-Way</td>
<td>68'</td>
<td>50'</td>
<td>50'</td>
</tr>
<tr>
<td>A2. Landscape Easements</td>
<td>-</td>
<td>25' East Side</td>
<td>30'-40' West Side</td>
</tr>
<tr>
<td>B. Landscape Buffers</td>
<td>-</td>
<td>10' Type 1 West Side – Between R-O-W and Landscape Easement</td>
<td>20' Type 1 East Side</td>
</tr>
<tr>
<td>C. Minimum Pavement Width</td>
<td>38'</td>
<td>30'(4)</td>
<td>30'(6)</td>
</tr>
<tr>
<td>D. Parking Lanes</td>
<td>8'</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>E. Concrete Curb &amp; Gutter</td>
<td>Vertical(^{(2)})</td>
<td>Traffic Curb</td>
<td>-</td>
</tr>
<tr>
<td>F. Landscape Strips</td>
<td>6'</td>
<td>8' East Side</td>
<td>36' West Side(^{(7)})</td>
</tr>
<tr>
<td>G. Sidewalks</td>
<td>8'</td>
<td>6' East Side</td>
<td>12' Shared Use Path West Side</td>
</tr>
<tr>
<td>H. Curb Radii</td>
<td>35'</td>
<td>35'</td>
<td>35'</td>
</tr>
<tr>
<td>I. Lighting</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
</tr>
<tr>
<td>J. Native Plants &amp; Storm Treatment</td>
<td>-</td>
<td>Areas Beyond Sidewalks(^{(5)})</td>
<td>20' East Side</td>
</tr>
<tr>
<td>K. Design Speed(^{(3)}) mph</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

Notes:

(1) Within the above parameters, geometric design requirements shall be determined for specific roads consistent with AASHTO.
(2) Vertical curb and gutter unless low-impact development techniques are approved.
(3) Design speed serves as a basis for determining geometric elements of new roads and does not imply posted or legally permissible speeds. Design speed on existing roads is 5 mph over the posted speed limit or as tabulated above, whichever is less.
(4) Two 15-foot travel lanes separated by 12-foot landscaped median, inclusive of curbs.
(5) Areas between sidewalks and private site improvements (parking and buildings) shall be landscaped with native plants and used for stormwater treatment.
(6) Includes two 11-foot travel lanes plus 4-foot paved shoulders.
(7) Landscaping with native plants and for stormwater treatment located between roadway and sidewalk.
TABLE 4.4
SE 140th Street & Park Street Design Standards

<table>
<thead>
<tr>
<th>Criteria</th>
<th>SE 140th Street from North Bend Way to Middle Fork Road</th>
<th>Park Street from Bendigo Blvd to Main Street</th>
<th>Park Street from Main Street to Healy Avenue</th>
<th>Park Street from Healy Avenue S to North Bend Way</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Minimum Right-of-Way</td>
<td>64’</td>
<td>61’</td>
<td>60’</td>
<td>63’</td>
</tr>
<tr>
<td>B. Minimum Pavement Width</td>
<td>32’</td>
<td>41.5’(4)</td>
<td>43’(4)</td>
<td>46’</td>
</tr>
<tr>
<td>C. Parking Lanes</td>
<td>-</td>
<td>7.5’ One Side Only</td>
<td>-</td>
<td>7.5’</td>
</tr>
<tr>
<td>D. Bike Lanes</td>
<td>5’</td>
<td>-</td>
<td>4.5’</td>
<td>4.5’</td>
</tr>
<tr>
<td>E. Concrete Curb &amp; Gutter</td>
<td>Vertical</td>
<td>Vertical(7)</td>
<td>Vertical(7)</td>
<td>Vertical(7)</td>
</tr>
<tr>
<td>F. Landscape Strip</td>
<td>8’ North Side 8-10’ Biochannel South Side</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>G. Sidewalk</td>
<td>6’ North Side 8’ HMA Trail South Side</td>
<td>6.5’ North Side(6) 13’ South Side(5)</td>
<td>8’(2)</td>
<td>8’(2)</td>
</tr>
<tr>
<td>H. Curb Radii</td>
<td>35’</td>
<td>35’</td>
<td>35’</td>
<td>35’</td>
</tr>
<tr>
<td>I. Lighting</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
</tr>
<tr>
<td>J. Native Plants &amp; Storm Treatment</td>
<td>-</td>
<td>Street Tree(5) - Parrotia Persica cv</td>
<td>Street Tree(5) - Parrotia Persica cv</td>
<td>Street Tree(5) - Parrotia Persica cv</td>
</tr>
<tr>
<td>K. Design Speed(3) mph</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

Notes:
(1) Within the above parameters, geometric design requirements shall be determined for specific roads consistent with AASHTO.
(2) If additional right-of-way width is provided, the sidewalk widths shall be increased to a maximum of 15 feet.
(3) Design speed serves as a basis for determining geometric elements of new roads and does not imply posted or legally permissible speeds. Design speed on existing roads is 5 mph over the posted speed limit or as tabulated above, whichever is less.
(4) Includes 12-foot-wide left turn lane.
(5) Street tree species shall be as indicated above or as otherwise approved by the CED Director, pursuant to Chapter 18.18 NBMC. Tree pits shall be a minimum of 4’ by 5’ (larger when space is available) and should use flexipave for fill or other approved material.
(6) Sidewalk dimension includes curb.
(7) Vertical curb and gutter unless low-impact development techniques are approved.
### TABLE 4.5
Local Access Street Design Standards

<table>
<thead>
<tr>
<th>Criteria (1)</th>
<th>Residential Local Streets and Cul-De-Sacs For Cottage Housing and Multi-Family (6)</th>
<th>Local Streets - Low Density Residential (6)</th>
<th>Residential Local Streets - Low-Impact Design (4)(6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Minimum Right-of-Way</td>
<td>58'</td>
<td>54'</td>
<td>62'(3)</td>
</tr>
<tr>
<td>B. Minimum Pavement Width</td>
<td>34'</td>
<td>34'</td>
<td>34'</td>
</tr>
<tr>
<td>C. Parking Lanes</td>
<td>8'</td>
<td>8'</td>
<td>8'</td>
</tr>
<tr>
<td>D. Concrete Curb &amp; Gutter</td>
<td>Vertical (2)</td>
<td>Vertical (2)</td>
<td>Vertical (2)</td>
</tr>
<tr>
<td>E. Landscape Strips</td>
<td>5'</td>
<td>4'</td>
<td>5' One Side Only</td>
</tr>
<tr>
<td>F. Sidewalks</td>
<td>6'</td>
<td>5'</td>
<td>5'(3)</td>
</tr>
<tr>
<td>G. Curb Radii</td>
<td>25'</td>
<td>25'</td>
<td>25'</td>
</tr>
<tr>
<td>H. Lighting</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
<td>See Section 4.19</td>
</tr>
<tr>
<td>I. Minimum Biochannel</td>
<td>-</td>
<td>-</td>
<td>11'(4)</td>
</tr>
<tr>
<td>J. Design Speed (7) mph</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
</tbody>
</table>

Notes:

1. Within the above parameters, geometric design requirements shall be determined for specific roads consistent with AASHTO.
2. Vertical curb and gutter unless low-impact development techniques are approved.
3. Right-of-Way width as necessary to accommodate LID features.
4. LID features shall meet the requirements of Section 4.03C. Biochannel shall be utilized on one or both sides of roadway, and placed between sidewalk and roadway and shall be sized as necessary to accommodate the required treatment. Side slopes shall not exceed 3H:1V and the channel bottom shall be no less than 18 inches wide. Such LID features shall be placed between the roadway and sidewalk, but may be placed behind the sidewalk to retain a significant tree or other critical area.
5. Sidewalk shall meander with the contour of the biochannel/rain garden.
6. Cul-de-sacs will be allowed only when there are physical constraints, such as wetlands or excessive natural grade, or to efficiently serve difficult-to-access areas due to natural constraints.
7. Design speed serves as a basis for determining geometric elements of new roads and does not imply posted or legally permissible speeds. Design speed on existing roads is 5 mph over the posted speed limit or as tabulated above, whichever is less.
### TABLE 4.6

**AASHTO Sight Distance Criteria**

<table>
<thead>
<tr>
<th>Design Speed (mph)</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>40</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal Curvature, Radius, (Feet)</td>
<td>(1)</td>
<td>300</td>
<td>460</td>
<td>(1)</td>
<td>(1)</td>
</tr>
<tr>
<td>Stopping Sight Distance (Feet)</td>
<td>155</td>
<td>200</td>
<td>250</td>
<td>305</td>
<td>360</td>
</tr>
<tr>
<td>Entering Sight Distance (Feet)</td>
<td>280</td>
<td>335</td>
<td>390</td>
<td>445</td>
<td>500</td>
</tr>
<tr>
<td>Residential Driveway ESD</td>
<td>150</td>
<td>200</td>
<td>250</td>
<td>325</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes:
1. Local access streets that terminate in a permanent cul-de-sac or form shot loops off an adjacent local access street may use the following minimum centerline radii:
   - Up to 75 degree curve delta – 100 feet
   - 75 degree curve delta and over – 55 feet
2. Horizontal curvature to be designed by Engineer.
3. Driver eye height = 3.5 feet, object height = 2.0 feet, distances require adjustment per AASHTO for grades greater than 3 percent.
4. Driver eye height = 3.5 feet, measured 10 feet back from face of curb or edge of traveled land. Object height= 4.25 feet, distances require adjustment per AASHTO for approach grades greater than 3 percent. Entering sight distance for right turns may be reduced per AASHTO.

### TABLE 4.7

**Woonerf Design Criteria**

| Right-of-Way Width | With optional parking lane – 27 feet: vertical curb & gutter on residential side only for parking barrier, at-grade 12-inch cement concrete border on open space side of woonerf, multi-use woonerf for remainder of open space including space for one 7.5-foot parking lane and two 9-foot travel lanes (shared with pedestrians). |
|                    | Open space side of woonerf is signed with No Parking – Fire Lane. Width narrows to 15 feet (without parking lane) at driveway apron to the primary street. |
|                    | Park or common open space adjacent to woonerfs shall only accommodate the stormwater runoff originating from the woonerf area. |
| Paved Roadway Width Inside Curbs/Borders | 25.5 feet with optional parking lane, 18 feet without parking lane. Signed “No Parking – Fire Lane” on open-space side of roadway. |
| Cement Concrete Traffic Curb and Gutter or Border | With optional parking lane: vertical curb & gutter on residential side, except as when best available low-impact development techniques used as approved by the City. At-grade 12-inch-wide by 8-inch-deep cement concrete border on park side. |
|                    | Without optional parking lane: at-grade 12-inch wide by 8-inch deep cement concrete border on both sides. |
| Sidewalk and ADA Ramps | Not applicable. Sidewalk and drive area are shared. Area shall be signed “Caution. Pedestrians Share Roadway.” ADA ramp is provided at driveway apron into Woonerf. |
| Curb Radii | 25 feet. |
| Maximum Dwelling Units Accessed | Limited to serving access to approximately 16 homes. |
4.04 Street Frontage Improvements

A. All industrial, commercial, and residential development shall install street frontage improvements at the time of construction. Such improvements shall include vertical concrete curb and gutter, concrete sidewalk, street storm drainage, street lighting system, utility relocation, landscaping and irrigation, undergrounding aerial utilities and street pavement widening all per these Standards. Plans shall be prepared and signed by a licensed engineer currently registered in the State of Washington.

B. All frontage improvements shall be made across the full frontage of the property.

C. Exceptions. The following shall be exempt from constructing frontage improvements:

   (1) Projects wherein the cost of the street improvements along the property frontage is greater than 20 percent of the cost of the cumulative building alterations (including impact fees) in any 5-year period according to the following:

      a. Street improvement costs shall include, but not be limited to, roadway asphalt, storm drainage, curb and gutter, landscape strip, street trees, and sidewalk.

      b. For properties with multiple street frontages, the average length of the combined multiple street frontages will be used for the purposes of determining whether street improvements are required. If street improvements are required, the cost of the improvements along any of the multiple street frontages shall not exceed 20 percent of the cost of the cumulative building alterations (including impact fees) in any 5-year period.

   (2) When improvements cannot be reasonably accomplished in a timely manner a recorded agreement (performance surety or equal) on forms provided by the City shall be completed which provide for these improvements to be installed at a later date by the proponent.

New or improved homes on existing single-family lots may be exempt from providing “urban” type street improvements, but may be subject to “rural” type improvements provided these are consistent with the surrounding roads.

D. Right-of-way shall be conveyed to the City on a recorded plat or by a right-of-way dedication deed, even if the project is exempt from street frontage improvements under C. above. All costs of same to be borne by the property owner/developer.
4.05 Private Streets

A. General

While community street requirements are usually best served by public streets, owned and maintained by the City, private streets may be appropriate for some local access streets.

B. Conditions

Private streets shall be allowed to serve existing recorded lots when the following conditions exist:

(1) The existing lot does not abut a public street right-of-way; and

(2) The only access to the lot is by an easement across an adjacent lot or lots not under the ownership of the lot or lots to which the private street is to provide service; or across property under the same ownership when there is insufficient right-of-way width; and

(3) The private street will not serve more than four single-family dwelling units when the property to be served has been developed to its fullest extent.

Private streets shall be allowed to serve new lots created under the short plat or subdivision ordinances of the city if the following conditions exist:

(4) There is insufficient width (less than 50 feet) under single ownership to construct a standard public street in accordance with the city’s standards for that zoning district; and

(5) The ultimate number of lots to be served by the private street is four or less dwelling units or dwelling unit equivalents; and

(6) That in the judgment of the Public Works Director or his designee, there is not a need for a through connection to collector streets beyond the border of the property to be served.

C. Approval

Private streets may be approved by the Director only when they are:

(1) Permanently established by right-of-way, tract or easement providing legal access to each affected lot, dwelling unit, or business and sufficient to accommodate required improvements, to include provision for future use by adjacent property owners when applicable; and

(2) Built to these standards, as set forth herein, or secured under the provisions of the subdivision regulations; and
(3) Accessible at all times for emergency and public service vehicle use (this precludes to use of gates on private streets); and

(4) Not obstructing, or part of, the present or future public neighborhood circulation plan developed in processes such as the City of North Bend comprehensive plan, or capital improvement program; and

(5) Not going to result in land locking of present or future parcels; and

(6) Not needed as public roads to meet the minimum road spacing requirements of these standards; and

(7) Maintained by a capable and legally responsible owner or homeowners’ association or other legal entity made up of all benefited property owners, under the provisions of the applicable codes. The City of North Bend will not maintain (including snow & ice removal) or repair private streets; and

(8) Clearly described on the face of the plat, short plat, or other development authorization and clearly signed at street location as a private street, for the maintenance of which the City of North Bend is not responsible.

D. Acceptance of Private Streets

The City will not accept private streets for maintenance as public streets until such streets are brought into conformance with current City standards including Section 4.03. This requirement will include the hard surface paving of any streets originally surfaced with gravel.

The City will not accept private streets within short plats when the roads providing access to the plat are private and already have the potential to serve more than the number of lots specified in subsection 4.06 B. Short plats proposed on properties to which the access is over private streets that do not meet the standards in this section shall be denied.

E. All private streets shall be constructed in accordance with the standards set forth in this Chapter, except as modified herein:

(1) The streets shall have an unobstructed driving width of not less than 20 feet;

(2) The roadway grade shall not exceed ten percent; provided, however, the City’s Public Works Director may allow a steeper grade if, in his/her professional opinion

   a. The structural integrity of the road is not jeopardized by the steeper grades; and

   b. The public safety is adequately protected and in no way compromised by the steeper road grade. The engineer may require over-stringent construction standards including the paving of the street if he deems it
necessary in order to protect the structural integrity of the driving surface and protect the public safety as a result of the steeper grade;

(3) The private street shall have an overhead clearance of not less than 14 feet, 6 inches;

(4) If the private street is to exceed 150 feet in length, then it shall be provided with a cul-de-sac or other suitable turnaround;

(5) A road maintenance agreement on forms provided by the city shall be executed and recorded at the time of street approval and shall be covenants running with the lands;

(6) Building setbacks, where applicable, shall be measured from the private street right-of-way;

(7) The minimum right-of-way width shall be 20 feet. Additional right-of-way may be required to allow for storm drainage or other public utilities. Utilities shall be located outside of the 20-foot surface of the roadway. Utility easements shall be provided to the city as needed;

(8) Front yard setbacks, measured from the right-of-way line shall apply to buildings fronting on a private street. For corner lots that will be adjacent to a private street, the front yard setbacks shall be observed along the private and public street unless the property owner constructs a four-foot-high fence, or its equivalent, along the full length of the former lot on the private street side. The building setback from the private street shall then be the same as the side yard setback;

(9) The private street shall be paved from the paved portion of the public street to a distance 25 feet from the edge of the public street right-of-way;

(10) The standards set forth herein shall be minimum requirements as to slope and materials. Greater slope and materials may be required if in the opinion of the city engineer they are necessary in order to maintain the structural integrity of the private street.

4.06 Cul-de-Sacs, Hammer-Heads and Eyebrows

A. Whenever a street serves more than six lots or extends more than 150 feet from centerline of accessing street to farthest extent of surfaced traveled way a widened “bulb” or hammerhead shall be constructed as shown in the drawings.

B. Any permanent cul-de-sac shall not serve more than 13 potential single-family dwelling units. Cul-de-sac distances should not exceed 450 feet except where topographic or other physical constraints prevent an interconnected street pattern. Cul-de-sacs shall not exceed 600 feet.
C. Cul-de-sacs, T-shaped, and Y-shaped turnarounds shall include pedestrian and/or bicycle connections to adjoining properties whenever possible. The city engineer may require an off-street walk or an emergency vehicle access to connect a cul-de-sac at its terminus with other streets, parks, schools, bus stops, or other pedestrian traffic generators, if the need exists.

D. Temporary cul-de-sacs may be allowed when future extensions of the streets are anticipated. Temporary cul-de-sacs shall be designed pursuant to North Bend Standard Plan T-13. If a street temporarily terminated at a property boundary serves more than six lots or is longer than 150 feet, a temporary cul-de-sac shall be constructed near the plat boundary. The paved cul-de-sac shall be 90 feet in diameter. Removal of the temporary cul-de-sac and reconstruction of the street shall be the responsibility of the developer who extends the road. Reconstruction shall include demolition and wastehaul of all temporary improvements, grading and subgrade preparation, extension and installation of storm drainage (if required), curbs, gutters, sidewalks, and other improvements to make for a complete and whole street section.

E. The maximum cross slope in a bulb shall not exceed six percent.

F. A “hammer head” turnaround shall only be approved by variance, and shall not be used to serve more than 9 lots. Hammerheads shall only be used in place of a bulb when site constraints (critical areas, slope, etc.) preclude the practical use of a bulb.

4.07 Intersections

A. Traffic control devices will be as specified in the Manual on Uniform Traffic Control Devices (MUTCD) or as may be specifically modified by the City Public Works Director as a result of appropriate traffic engineering studies.

B. Street intersections shall be laid out so as to intersect as nearly as possible at right angles, and in any event, no street shall intersect with any other street at an angle of less than 85, or more than 95 degrees. Sharp angled intersections shall be avoided. For safe design, the following types of intersection features should be avoided:

(1) Intersections with more than four intersecting streets;

(2) “Y” type intersections where streets meet at acute angles;

C. On sloping approaches at an intersection, landings shall be provided with grade not to exceed one foot difference in elevation for a distance of 30 feet approaching any arterial or collector or 20 feet approaching an local access street, measured from nearest right-of-way line (extended) of intersected street.
D. Spacing between adjacent intersecting streets, whether crossing or T-connecting, shall be as follows:

<table>
<thead>
<tr>
<th>When Highest Classification involved is:</th>
<th>Minimum centerline offset shall be:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal arterial</td>
<td>1,000 feet</td>
</tr>
<tr>
<td>Minor arterial</td>
<td>500 feet</td>
</tr>
<tr>
<td>Collector</td>
<td>240 feet</td>
</tr>
<tr>
<td>Local Access</td>
<td>125 feet</td>
</tr>
</tbody>
</table>

E. Curb radii at intersections shall be 35 feet for any street connecting to a Arterial or Collector and 25 feet at all other intersections. Minimum right-of-way radius shall be 25 feet.

F. Where alleys or woonerfs intersect with streets, curbs on intersecting street will be painted for a distance of 20 feet in both directions from alley or woonerf intersection with high-visibility industrial enamel safety yellow and sight obstructions will be limited at discretion of city for safety of drivers and pedestrians negotiating the alley or woonerf.

4.08 Half Streets

A “half-street” improvement is typically constructed as a partial street along the common side property line of a developing parcel, when the adjacent parcel is undeveloped or underdeveloped. The intent is to have the first developing parcel establish the location of the street that will eventually serve both parcels. In this situation, the first developing parcel shall construct a full-width street in accordance with its associated classification, including drainage and curb-and-gutter on both sides. However, the sidewalks and planter strip on the side opposite the development shall not be required. The adjacent parcel will complete the remaining improvements at a later date, when it is developed.

No requirements in this section shall force the developer to obtain or acquire a dedication of additional right-of-way or easements from another property owner.

4.09 One-Way Streets

Local access streets, including loops, may be designated one-way upon a finding by the city engineer that topography or other site features make two-way traffic impractical.

4.10 Woonerfs

A. Woonerfs are shared access routes for use by pedestrians, bicyclists and vehicles at a very low speed, with pedestrians having the dominant role. Woonerfs may be incorporated in new single-family and multi-family residential projects to provide driveway access to the front of homes when such homes front to a park or common open space under the following conditions:

1. The woonerf may be used as an alternative to a cul-de-sac for providing access to a maximum of 16 homes in locations where providing standard streets would create excessive paving.
(2) Woonerfs must connect to a street at both ends, and must be adjacent to a park or common open space area on one side, and shall only accommodate the stormwater runoff originating from the woonerf area.

4.11 Bus Zones and Turn-Outs

During the design of arterials and collectors, the designer shall contact the service provider, and the local school district to determine bus zone (stop) locations and other bus operation needs. The road project shall provide accessible landing pads at designated bus zones as per Americans with Disabilities Act (ADA) and where required shall include turn-outs and shelter pads. Pedestrian and wheelchair access improvements within the right-of-way to and from the bus loading zone or turn-out from nearby businesses or residences shall also be provided as part of the road improvement. Surfacing requirements may also be affected, particularly on shoulders.

4.12 Access and Circulation Requirements

A. A future street plan shall:

   (1) Be filed by the applicant in conjunction with an application for a subdivision or development, when required by the city engineer. The plan shall show the pattern of existing and proposed land division and shall include other parcels within 1-quarter mile surrounding and adjacent to the proposed land division. A street proposal may be modified when subsequent subdivision proposals are submitted.

   (2) Identify existing or proposed bus routes, pullouts or other transit facilities, bicycle routes and pedestrian facilities on or within 500 feet of the site.

B. All local access and collector streets which abut a development site shall be extended within the site to provide through circulation when not precluded by environmental or topographical constraints, existing development patterns or strict adherence to other portions of the City standards. Residential local access streets should provide for multiple vehicle connections/access to collector streets, whenever feasible. A street connection or extension is considered precluded when it is not possible to redesign or reconfigure the street pattern to provide required extensions. In the case of environmental or topographical constraints, the mere presence of a constraint is not sufficient to show that a street connection is not possible. The applicant must show why the constraint precludes some reasonable street connection.

C. The location, width and grade of all streets shall conform to the approved street plan and shall be considered in their relation to existing and planned streets, to topographic conditions, to public convenience and safety, and in their appropriate relation to the proposed use of the land to be served by such streets. Such a plan shall be based on the type of land use to be serviced, the volume of traffic, the capacity of adjoining streets and the need for public convenience and safety.
D. Where the location of a street is not shown in an approved street plan, the arrangement of streets in a development shall either:

1. Provide for the continuation or appropriate projection of existing streets in the surrounding areas, or;

2. Conform to a plan adopted by the City Council if it is impractical to conform to existing street patterns because of topographical or other existing conditions of the land.

E. All development shall provide an internal network of connecting streets that minimize travel distances within the development.

F. To give access or permit a satisfactory future division of adjoining land, streets shall be extended to the boundary lines of adjacent vacant or underdeveloped properties, and

1. These extended streets or street stubs to adjoining properties are not considered to be permanent cul-de-sacs since they are intended to continue as through streets at such time as the adjoining property is developed. A temporary cul-de-sac shall be constructed in accordance with Section 4.06.

2. A Type III barricade shall be constructed at the end of the street by the developer which shall not be removed until authorized by the city engineer, the cost of which is to be included in the street construction cost. The sign shall read:

   **THIS STREET TO BE EXTENDED WITH FUTURE DEVELOPMENT BEYOND THIS POINT.**

4.13 Access Requirements

A. In order to provide for increased traffic movement on arterial and collector streets and to eliminate turning movement conflicts, the city engineer may restrict the location of driveways on streets and require the location of driveways be placed on adjacent streets upon the finding that the proposed access would:

1. Cause or increase existing hazardous traffic conditions; or

2. Provide inadequate access for emergency vehicles; or

3. Cause hazardous conditions to exist which would constitute a clear and present danger to the public health, safety, and general welfare.

B. In order to eliminate the need to use public streets for movements between commercial or industrial properties, parking areas shall be designed to connect with parking areas on adjacent properties unless not feasible. The city engineer shall require access easements between properties where necessary to provide for parking area connections.
C. In order to facilitate pedestrian and bicycle traffic, access and parking area plans shall provide efficient sidewalk and/or pathway connection between neighboring developments or land uses.

D. Proposed street or street extensions shall be located to provide direct access to existing or planned transit stops or other neighborhood activity centers, such as schools, shopping areas, and parks.

4.14 Street Names

The developer must check with the City regarding the naming of streets. This should be done at the time the preliminary plat is submitted and again upon approval of the final plat. The city engineer will insure that the name assigned to a new street is consistent with policies of the City and in accordance with NBMC 12.12.050.

An address number will be assigned by the city building official or designee to all new buildings at the time the building permit is issued in accordance with NBMC 12.12.040. It is then the owner’s responsibility to see that the house numbers are placed clearly and visibly at the main entrance to the property or at the principal place of ingress.

4.15 Signing

All street signs shall be designed by the developer and submitted for review to the city engineer. Upon approval and at the appropriate time, the City shall direct the developer to install the signs, as approved. Traffic control signing shall comply with the provisions as established by the U.S. Department of Transportation Manual on Uniform Traffic Control devices (MUTCD).

4.16 Slope, Wall and Drainage Easements

Either the functional classification or particular design features of a road may necessitate slope, sight distance, wall or drainage easements beyond the right-of-way line. Such easements may be required by the city engineer in conjunction with dedication or acquisition of right-of-way.

4.17 Pavement Markings

Pavement markings, markers or striping shall be used to delineate channelization, lane endings, crosswalks and longitudinal lines to control or guide traffic per MUTCD. All pavement markings shall be designed by the developer and submitted for review to the city engineer. Upon approval and at the appropriate time, the City shall direct the developer to install the markings, as approved. Channelization plans or crosswalk locations shall be approved by the city engineer.

All long line markings (centerline, edge line, lane line, etc.) shall be reflective hot- or cold-applied, sprayed or extruded paint. All other pavement markings (crosswalk, stop line, arrows, railroad markings, bicycle lane symbols, etc.) shall be reflective Type-A liquid hot-applied adhesive thermoplastic. All markings shall include glass beads. See Division 8 of WSDOT Standard Specifications for marking application procedures.

Crosswalks, where required by the city engineer, shall be stenciled with a piano key pattern and infilled with white thermoplastic as provided by Integrated Paving Concepts, Inc., PMB 48, 936
Peace Portal Drive, Blaine, WA 98230, or approved equal. Treatment for the crosswalk shall be as selected by the City’s Public Works Director.

Where solid double yellow striping is required (e.g., to delineate no passing zone), a pair of Type 2YY Raised Pavement Markers (RPMs) shall be installed to supplement the lines. The RPMs shall be installed immediately outside the painted lines at a spacing not greater than 40 feet.

4.18 Sight Obstruction

All new development shall design and construct streets, driveways, and street intersections in accordance with the sight distance criteria for entering sight distance (ESD) and stopping sight distance (SSD) as specified in Table 4.3.

In addition, per this section, the triangular area identified by the required sight line (as described in Table 4.3) for all existing and proposed street intersections shall be kept clear of obstructions between 42 inches and ten feet above the existing surface of the street.

Exclusions. Sight obstructions that may be excluded from these requirements include: utility poles, regulatory signs, trees trimmed from the base to a height of 10 feet above the street, and saplings or plant species of open growth habits and not in the form of a hedge which are so planted and trimmed as to leave at all seasons a clear and unobstructed cross view, buildings constructed in conformance with the provisions of appropriate zoning regulations and preexisting buildings.

4.19 Electrical and Street Illumination

Illumination shall be provided at all intersections within and abutting the development, at the end of dead-end streets containing more than three homes, at the apex of sharp curves, and any additional areas where determined for safety by the public works director, and as specified in NBMC 19.06.110. All illumination shall be designed and constructed using materials as specified by the local electrical utility, except as otherwise designated by the City.

A. All new wiring for any utilities shall be buried with pad-mounted transformers. Design and installation of the system shall be done by the franchise utility company, or qualified engineer. Design shall be submitted to the city engineer for review prior to installation.

B. Continuous illumination will be required for channelization accommodating additional lanes including the tapers. Illumination will also be required as identifiers where roads intersect arterials or for frequently used pedestrian areas on arterials.

C. Widening of arterials with existing continuous illumination will require maintaining the continuous illumination. Widening to the ultimate roadway width will require illumination designed to current standards.

D. The standard luminaire shall utilize full cutoff fixtures and a flat glass refractor. The standard luminaire shall be as specified by the local electrical utility. As an alternative, illumination may be provided from existing utility poles, with permission from the city engineer. The city engineer may require that analysis of light and glare be provided to show that any extra illumination beyond these standards will not have a significant
adverse impact on existing land uses in the area. Energy efficient fixtures shall be required and shall provide a corrected light color temperature not to exceed 3,000 Kelvin.

E. Illumination shall be provided as follows:

<table>
<thead>
<tr>
<th>Street Classification</th>
<th>Average Lighting Foot-Candles(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arterial</td>
<td>0.6</td>
</tr>
<tr>
<td>Collector</td>
<td>0.4</td>
</tr>
<tr>
<td>Local Access/Half-Street</td>
<td>0.4</td>
</tr>
</tbody>
</table>

(1) In areas where lighting is required.

Some areas are classified as high or medium pedestrian areas, as determined by the city engineer. Higher levels of illumination will be required in those areas classified as high or medium pedestrian use.

4.20 Traffic Signals

Signalization will be required if warranted as determined by an existing study and/or transportation study performed by the Developer at the request of the City. All traffic signal components shall be designed by the developer and submitted for review to the city engineer. Upon approval and at the appropriate time, the City shall direct the developer to install, test, and commission the traffic signal, as approved. All components of the signals shall become property of the City.

4.21 Parking Lots

Parking lot surfacing materials shall satisfy the requirement for a permanent all-weather surface. Asphalt concrete pavement and cement concrete pavement satisfy this requirement and are approved materials. Gravel surfaces are not acceptable for approved surface material types. Porous asphalt, permeable concrete, permeable interlocking concrete pavers, and grid pavements may also be utilized in parking lot surfacing as allowed by adopted LID standards.

4.22 Survey Staking

All surveying and staking shall be performed by an engineering or surveying firm employed by the Developer and capable of performing such work. The engineer or surveyor performing and directing such work shall be currently licensed by the State of Washington to perform said task.

General construction inspection by the City shall not be considered approval of the staking nor relieve the contractor’s responsibility to install infrastructure improvements in accordance with approved plans.

4.23 Driveways

Driveways are used to provide vehicle access from the public right-of-way to a building or interior portion of a parcel. Within the right-of-way, a driveway “entrance” provides a transition from the street to the driveway. The entrances are typically constructed of cement concrete or
asphalt/gravel. The driveway from the entrance into the parcel is constructed of cement concrete, asphalt, gravel, or pavers.

A. General

(1) Driveway entrance details are located at the end of these Standards. Driveway entrances shall be constructed in accordance with Section 8-06 of the Standard Specifications.

(2) All abandoned driveway entrance areas on the same frontage shall be removed and the curbing and sidewalk or shoulder and ditch section shall be properly restored, at the Property Owner’s expense.

(3) Maintenance of driveway entrances and culverts shall be the responsibility of the owners whose property they serve.

(4) A right-of-way use permit shall be required for any work within the public right-of-way or otherwise involving a driveway entrance, and may require the entrance to be upgraded for ADA. No person shall begin work on the construction, alteration, or removal of any driveway or the paving of any parking strip on and/or adjacent to any street, alley or other public place in the City without first obtaining a permit from the City.

(5) Existing driveways may be reconstructed or repaired as they exist provided such reconstruction is compatible with the adjacent road. A right-of-way use permit shall not be required for driveway reconstruction or repair.

(6) Notwithstanding any other provisions, driveways will not be allowed where they are prohibited by separate City Council action or where they are determined by the city engineer to create a hazard or impede the operation of traffic on the roadway.

B. Location and Width of New Driveways

(1) A residential driveway shall typically serve only one parcel. Street frontage affected by driveways may be reduced by sharing driveways and reducing driveway width; a driveway addressing more than one parcel shall be classed as a commercial driveway, or joint use driveway, except as provided in subsections (2)(a) and (2)(b) of this section.

(2) No portion of driveway entrance shall be allowed within five feet of side property lines where it intersects with the street right-of-way line in residential areas or nine feet in commercial areas except as follows:

(a) A joint use driveway tract may be used to serve a maximum of four parcels:

(i.) Minimum tract width shall be 20 feet with an 18-foot paved surface, cross slope in one direction and curb or thickened edge
on one side, or designed as an inverted crown. Minimum tract length shall be 20 feet from right-of-way line.

(ii.) Driving surface shall be paved, with a paved entrance from the edge of pavement (or curb) of intersecting street to right-of-way line.

(iii.) The city engineer may allow use of an easement if the only access to a serving roadway is through an adjacent parcel not owned by the applicant.

(b) Driveways may utilize full width of narrow “pipe-stem” parcels or easements if approved by the city engineer.

(3) Grade transitions, excluding the tie to the roadway, shall be constructed as smooth vertical curves. The maximum change in driveway grade, shall be eight percent within any 10 feet of distance on a crest and 12 percent within any 10 feet of distance in a sag vertical curve. Driveway shall be graded to match into possible future widened road section without encroachment into graded shoulder or sidewalk. The design engineer for proposed developments shall consider the access driveway profile when designing the serving road to ensure that required grade transitions can be complied with considering building setback and lot terrain conditions. A drawing showing the grade transitions shall be required to be submitted to the City at the time of building permit approval.

(4) No driveway entrances shall extend into the street further than the face of the curb.

(5) Every driveway must provide access to a garage, carport, parking area or other structure on private or public property requiring the entrance of vehicles. No public curb shall be cut unless a driveway is installed.

(6) Driveway locations should also be reviewed for sight distance and general operations. No driveway entrance shall be located as to create a hazard to pedestrians, bicyclists or motorists or to invite or compel illegal or unsafe traffic movements.

(7) No driveway entrance or driveway shall be constructed in such a manner as to be a hazard to any existing street lighting standard, utility pole, traffic regulating device or fire hydrant. At a minimum all portions of the driveway entrance shall be located 5 feet from these and similar appurtenances. The cost of relocating any such street structure when necessary to do so shall be paid by the abutting property owner. The relocation of any street structure shall be allowed with the specific written approval of the Owner of the structure involved.

(8) Driveways for corner lots shall be located on the minor street side.
C. Dimensions, Slope, Details

(1) Residential driveway widths are based on the number and orientation of garage bays. Driveway widths at the street or single-double-, and triple-bay garages that are side loaded and for garages at the rear of the lot may be up to 10-feet wide.

(2) For front-loaded garages, residential driveways may be up to 10-feet wide for a single-bay garage, and up to 16-feet wide for double- and triple-bay garages. To minimize disruption of the sidewalk, these maximum widths should be reduced where, due to lot width, lot depth, house location, building type, and/or topography, a reduced driveway width would allow vehicles to easily and safely maneuver from the garage to the street.

(3) The length of any driveway shall not exceed 150 feet, without approval of the city engineer.

(4) Driveways and off-street parking for single-family residences need not be paved; provided, however, where said residence abuts upon a paved street, the driveway access and any parking must be paved from the paved street to the building setback line or a distance of 25 feet, whichever is greater. The subsurface and paving surface shall be of such materials and constructed in such a manner as the city engineer deems appropriate and pursuant to any applicable city design and construction standards.

(5) Driveway slopes or grades shall not exceed fifteen percent unless otherwise authorized/approved by the city engineer in writing. A drawing shall be provided showing the driveway slopes on both edges. The city engineer will consider authorizing driveway slopes up to a maximum of twenty percent, if it is determined that:

(a) The driveway location is the only economically and environmentally reasonable alternative.

(b) The driveway will not present a traffic, pedestrian, bicycle or safety hazard.

(c) The Fire Marshal concurs in allowing the increased driveway slope.

(d) The public health, safety and general welfare will not be adversely affected.

(e) Driveways giving direct access onto arterials may be denied if alternate access is available.

(f) A wider road approach or driveway entrance may be approved by the city engineer where a substantial percentage of oversized vehicle traffic exists, where divisional islands are required/desired, or where multiple exit or entrance lanes are needed.
STREETS, PEDESTRIAN PATHS, AND BIKEWAYS

(g) Parking lot circulation and signing needs shall be met on site. The public right-of-way shall not be utilized as part of a parking lot flow.

(h) Road approaches and/or ingress and egress tapers may be required in industrial and commercially zoned areas as directed by the city engineer.

(i) For driveways crossing an open ditch section, culverts shall be adequately sized to carry anticipated stormwater flows and in no case be less than 12 inches in diameter. The property owner making the installation shall be responsible for determining proper pipe size. The city engineer may require the owner to verify the adequacy of pipe size. Concrete pipe shall have a minimum cover of 6 inches to finish grade. All other pipes shall have a minimum cover of 12 inches.

(6) The angle between any driveway and the street shall be not less than 60°.

(7) Generally, the two edges of each driveway shall be parallel.

(8) All driveway entrances shall be constructed over a 4-inch crushed surfacing (5/8 inch minus) top course. Driveway entrances shall be subject to the same testing and inspection requirements as curb, gutter, and sidewalk construction. Portland cement concrete driveways shall be 6-inches thick, including the portion from the gutter to the back edge of sidewalk.

(9) Driveway entrance to City streets shall be paved, unless otherwise approved by the city engineer.

D. Commercial Driveways

The maximum width for any commercial driveway shall be 35 feet. Traffic flow through a commercial site will be reviewed to determine minimum width needed. Commercial driveways shall be constructed with 8-inch-thick air-entrained Class 4000 cement concrete with reinforcing steel bars or mesh.

For commercial or industrial driveways with heavy traffic volumes or significant numbers of trucks, the city engineer may require construction of the access as a road intersection. This requirement will be based on traffic engineering analysis submitted by the applicant that considers, among other factors, intersection spacing, sight distance and traffic volumes. No commercial or industrial type driveway shall be constructed, if reasonably possible, where backing onto the sidewalk or street is required.

4.24 Sidewalks, Curbs and Gutters

A. General

All properties within commercial zones of the City, or abutting arterial streets, collectors or local access streets shall, in conjunction with new construction, alterations, reconstruction, or improvements of such properties, where the total cost of construction, reconstruction or remodeling in the opinion of the City warrants frontage improvements,
provide sidewalks, curbs and gutters along abutting streets, in accordance with the details provided herein. Single-family residences, not associated with short plats or long plats, may be exempt from this requirement, if approved by the City Engineer and CED Director. See Section 4.04.

B. Design Standards

Plans for the construction of sidewalks, curbs and gutters are to be submitted as part of the street plans when applicable.

The City has set forth minimum standards as shown in the details which must be met in the design and construction of sidewalks, curbs and gutters. Because these are minimum standards, they may be modified by the City should the city engineer feel circumstances require variances to minimum design standards.

C. Sidewalks

(1) Major and Minor Arterial Streets. Sidewalks, curbs and gutters shall be required on both sides of all arterial streets interior to the development, and also be required on the development side of streets abutting the exterior of said development. Special design criteria, according to the location of the development, is identified for Cedar Falls Way and North Bend Way, as shown in Tables 4.1 and 4.2, respectively.

(2) Collector Streets. Sidewalks, curbs and gutters shall be required on both sides of all collector streets interior to the development, and shall also be required on the development side of streets abutting the exterior of said development. Special design criteria, according to the location of the development, is identified for 468th Avenue SE, SE 140th Street, and Park Street as shown in Tables 4.3 and 4.4.

(4) Local Access Streets. Sidewalks, curbs and gutters shall be required on both sides of all local access streets interior to the development, and shall also be required on the development side of streets abutting the exterior of said development.

(a) Residential Local Access Streets and Cul-de-Sacs for Cottage Housing and Multiple Family. Sidewalks shall be separated from the curb by a landscape buffer of a minimum of 5 feet. Sidewalks shall be a minimum of 6-feet wide.

(b) Residential Local Access Streets for Low Density Residential. Sidewalks shall be separated from the curb by a landscape buffer of a minimum of 4-feet wide. Sidewalks shall be a minimum of 5-feet wide.

(c) Residential Local Access Streets with Low Impact Development. Sidewalks shall be separated from the curb on one side of the roadway by a landscape buffer a minimum of 5-feet wide, or on the other side of the roadway by a minimum of 11 feet, as a biochannel. Sidewalks shall be a minimum of 5-feet wide.
(7) All Landscape buffers adjacent to sidewalks shall be landscaped consistent with NBMC 18.18.125 or as otherwise approved by the city engineer and maintained by the abutting property owner(s). The adjacent landowner shall keep sidewalks free of all obstructions, snow, ice, and other substances that may be a hazard to the walking public.

(8) The design of all sidewalks shall provide for a gradual taper rather than an abrupt transition between sidewalks of different widths or alignments.

(9) Form and subgrade inspection by the City, are required before sidewalk is placed. Monolithic placement of curb, gutter and sidewalk will not be allowed.

(10) Sidewalks shall be constructed of Class 3000 or Class 4000 air-entrained Portland Cement Concrete, 4 inches thick (6-inches thick at driveway entrances or along access points for public facilities).

(11) Sidewalks shall be constructed on compacted crushed surfacing top or base course, of suitable thickness, but no less than 2 inches, to provide a firm and unyielding base. Sidewalks will be constructed of Portland Cement Concrete as described in Section 8-14 of the Standard Specifications and be designed and constructed in compliance with those details as shown herein. Typically, in commercially zoned areas the sidewalks shall abut the curb. The city engineer shall be at liberty to vary sidewalk dimensional characteristics and location to meet localized or existing conditions.

D. Curb and Gutter

Cement concrete curb and gutter shall be used for all street edges unless otherwise approved by the city engineer. All curbs and gutters shall be constructed in accordance with Section 8-04 of the Standard Specifications. Curbs shall be of the vertical face type. No rolled curb and gutter profile will be allowed without specific approval of the city engineer. When rolled curbs are approved, all sidewalks abutting the rolled curb shall be a minimum 6-inches thick.

No extruded curb options will be accepted by the city during construction.

Form and subgrade inspection by the City are required before curb and gutter are placed.

Forms, wood or steel, shall be staked securely in place, true to line and grade.

Sufficient support shall be given to the form to prevent movement in any direction, resulting from the weight of the concrete or the concrete placement. Forms shall not be set until the subgrade has been compacted within one inch of the established grade. Forms shall be clean and well-oiled prior to setting in place. Immediately prior to placing the concrete, forms shall be carefully inspected for proper grading, alignment and rigid construction. Adjustments and repairs as needed shall be completed before placing concrete.
The subgrade shall be properly compacted and brought to specified grade before placing concrete. The subgrade shall be thoroughly dampened immediately prior to the placement of the concrete. Concrete shall be spaded and tamped thoroughly into the forms to provide a dense, compacted concrete free of rock pockets. The exposed surfaces shall be floated, finished and brushed longitudinally with a fiber hair brush approved by the City’s inspector and/or city engineer.

Joints shall be constructed in the manner and at the locations shown in the drawings. They shall be cleaned and edged as shown on the drawings. All expansion joints shall extend entirely through the curb section above the pavement surface. Joint filler in the curb shall be normal to the pavement and in full but contact with pavement joint filler.

E. Curb Ramps

All sidewalks must be constructed to provide for curb ramps in accordance with ADA, PROWAG, and the current requirements as determined by WSDOT. Details provided herein are minimum and subject to change. It is the Developer’s responsibility to verify current requirements and install same per current standards even if City has approved of construction drawings with non-compliant requirements.

Compliant curb ramps shall be installed whenever other improvements are required adjacent to or abutting an existing ramp or location that would otherwise require a curb ramp, as determined by the City. Pavement overlays shall require installation of compliant curb ramps in all areas wherein a legal crosswalk is affected by the pavement work.

Curb Ramps shall be constructed of Portland Cement Concrete. Form and subgrade inspection by the City are required before a curb ramp is placed.

4.25 Separated Walkways, Bikeways, and Trails

Separated pedestrian, bicycle, and equestrian facilities shall be provided where designated in the Comprehensive Plan or where required by the city engineer because of anticipated significant public usage. Separated facilities are typically located on an easement, tract, or within the right-of-way when separated from the roadway by a drainage ditch or barrier. Where separated walkways, bikeways, or equestrian facilities intersect with motorized traffic, sight distance, marking and signalization (if warranted) shall be as provided in MUTCD.

Asphalt walkways and/or Combination Walkways/Bikeways shall conform to the following standards:

<table>
<thead>
<tr>
<th>Right-of-Way Width</th>
<th>As required.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathway Width</td>
<td>8 feet.</td>
</tr>
<tr>
<td>Crushed Surfacing Base Course</td>
<td>2-inch minimum.</td>
</tr>
<tr>
<td>Crushed Surfacing Top Course</td>
<td>2-inch minimum.</td>
</tr>
<tr>
<td>Paving Course</td>
<td>2-inch HMA minimum.</td>
</tr>
</tbody>
</table>
4.26 School Access

School access required as part of development approval shall be provided by an asphalt walkway or concrete sidewalk unless another alternative is available and approved by the city engineer through a road variance request.

4.27 Bikeways

Bicycle facilities shall be required in accordance with the North Bend Comprehensive Plan – Parks and Open Space Element and Transportation Element and where required by separate Council action or as described in the Standards.

A. Categories

The following provisions apply to bikeways associated with roads. Bikeways are categorized as described below based on degree of separation from motor vehicles and other transportation modes. This classification does not denote preference of one type over another. The planning and design of bikeways in any category shall be in accordance with the WSDOT Design Manual as modified herein, and the AASHTO Guide for the Development of Bicycle Facilities, current edition. Bikeways are categorized as follows:

(1) Shared Roadway: A roadway that accommodates bicyclists without special markings or designations. Shared roadways accommodate bicycles by either providing a wide paved shoulder or a wide curb lane. A paved shoulder should be at least 4-feet wide to accommodate bicycle travel. A wide curb lane should have a total width of 14 feet without parking.

(2) Signed Shared Roadway: Shared roadways that are identified by signing as preferred bicycle routes.

(3) Bike Lanes: A portion of the road that is designated by pavement striping for exclusive bicycle use. Bicycle lanes may be signed as part of a directional route system. Bicycle lanes are typically 5-feet wide on a curbed road and a minimum of 4-feet wide as a shoulder bike lane. Bike lanes shall be provided on all arterials and where designated in the Comprehensive Plan.

(4) Shared Use Path: Shared use paved trails, double track, are typically designated for bicycle and pedestrian use and in general follow a right-of-way independent of any road.

B. Striping and signing shall be implemented as follows:

(1) Pavement markings shall be used on bike lanes and paths according to MUTCD and AASHTO Guide for the Development of Bicycle Facilities, current edition.

(2) The design of all signalized intersections shall consider bicycle usage and the need for bicyclists to actuate the signal.
4.28  Equestrian Facilities

Equestrian facilities shall be provided where designated by the City of North Bend Parks and Open Space element of the Comprehensive Plan or as required by the city engineer and shall not be shared with bicycles.

4.29  Alleys and Rear Yard Access

Alleys may be incorporated in new Single Family and Multifamily residential projects to optimize development on small lots without deviation from maximum building cover and impervious surface requirements. Alleys shall be retained and utilized for nonresidential projects where alleys are existent, for example, in the DC and NB zoning district. Otherwise, alleys are encouraged where appropriate for nonresidential uses.

Alleys shall conform to the following standards:

<table>
<thead>
<tr>
<th>Right-of-Way Width</th>
<th>20 feet minimum.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paved Width</td>
<td>18 feet.</td>
</tr>
<tr>
<td>Crushed Surfacing Base Course</td>
<td>Based on engineering and geotechnical recommendations, 4 inch minimum.</td>
</tr>
<tr>
<td>Crushed Surfacing Top Course</td>
<td>Based on engineering and geotechnical recommendations, 2 inch minimum.</td>
</tr>
<tr>
<td>Paving Course</td>
<td>Based on engineering and geotechnical recommendations, 3-inch HMA minimum.</td>
</tr>
</tbody>
</table>

4.30  Side Slopes

Side slopes shall generally be constructed no steeper than 2.5:1 on both fill slopes and cut slopes. Steeper slopes may be approved by the public works director and/or city engineer upon showing that the steeper slopes, based on soils analysis, will be stable.

Side slopes shall be stabilized by grass sod or seeding, or by other plantings or surfacing materials acceptable to the city.

Handrails shall be required where slopes adjacent to sidewalks, asphalt walkways, and walkways/bikeways exceed a 2:1 cut slope. Handrails shall be in accordance with North Bend Standard Plan T-11.

4.31  Roadside Features

Miscellaneous features included herein shall be developed and constructed to encourage the uniform development and use of roadside features wherever possible. The design and placement of roadside features included herein shall adhere to the specific requirements as listed for each feature.

A.  Survey Monuments

   (1)  All existing (or new) survey control monuments and/or markers which are disturbed, lost, or destroyed during surveying or building shall be replaced with
the proper monument as outlined below by a professional land surveyor currently registered (licensed) in the State of Washington at the expense of the responsible contractor, builder or developer.

(2) All Streets:

Survey monuments, case, and cover located in roadway areas shall be in accordance with North Bend Standard Plan T-25.

(3) Monument Locations

Monuments shall be placed:

(a) At all street intersections;

(b) At the PC and PT’s of all horizontal curves;

(c) At PI of all horizontal curves of streets where the PI lies within the limits of the traveled roadway;

(d) At all corners, control points and angle points around the perimeter of subdivisions as determined by the City;

(e) At all section corners, quarter corners, and sixteenth corners that fall within the right-of-way.

B. Mailboxes

(1) Mailboxes shall be in accordance with the Postmaster.

(2) During construction, existing mailboxes shall be accessible for the delivery of mail or, if necessary, moved to a temporary location. Temporary relocation shall be coordinated with the local U.S. Postal Service. The mailboxes shall be reinstalled at the original location or to a new location as may be required by the local Postmaster, as further outlined below and approved by the U.S. Postal Service.

(3) Location

(a) Bottom or base of box shall be 36 inches to 42 inches above the finished street grade.

(b) Face of mailbox shall be 12 inches behind the face of the curb or edge of pavement.

(c) Mailboxes shall be placed on the same side of the street as “No Parking” signs wherever possible.

(d) Mailboxes shall be clustered for all subdivisions.
(e) Where no landscape strip exists and a sidewalk abuts the curb, the sidewalk shall be widened around mailbox locations to provide a minimum 5 feet of walking clearance.

C. Guard Rails

For purposes of design and location, all guard rails along roadways shall conform to the criteria of the “Washington State Department of Transportation Design Manual,” current edition. Guard rails shall only be used when necessary to protect errant vehicles from exiting the roadway and striking a fixed object, entering a water body, or rolling over.

D. Rock Walls

(1) Rock walls may be used for erosion protection of cut or fill embankments up to a maximum height of 8 feet, measured from keyway to top of wall, in stable soil conditions which will result in no significant foundation settlement or outward thrust upon the walls.

(2) For walls of any height supporting an outward thrust (surcharge), or when soil is unstable, a structural wall of acceptable design stamped by an engineer currently licensed in the State of Washington shall be used.

(3) A building permit shall be required for any wall over 4 feet in height, measured from keyway to top of wall, or any wall supporting a surcharge, regardless of height. Materials, design and construction shall be per applicable engineering recommendations, Standard Specifications Section 8-24, and these standards.

(4) All walls shall be subject to inspection by the City. Rock walls requiring design by an engineer, or walls over 4 feet in height, measured from keyway to top of wall, shall be subject to inspection by the owner’s engineer. The owner’s engineer shall continuously inspect the installation of the wall as it progresses and shall submit inspection reports, including compaction test results and photographs taken during the construction, documenting the techniques used and the degree of conformance to the engineer’s design.

(5) The rock material shall be as nearly rectangular as possible. No stone shall be used which does not extend through the wall.

(6) The rocks shall be placed in a manner such that the longitudinal axis of the rock shall be at right angles or perpendicular to the rockery face.

(7) Walls will not be allowed where deemed unsafe or where, in the opinion of the city engineer, the location will result in a hazard, nuisance, or require significant maintenance.
E. Street Trees and Landscaping Items

(1) Street trees and landscaping shall be incorporated into the design of road improvements for all classifications of roads. If no trees exist in the landscape strip, the landowner may plant trees that meet requirements of the city. Such landscaping in the right-of-way shall be coordinated with off-street landscaping required on developer’s property under the provisions of Chapter 18.18 NBMC, Landscaping Regulations. Only plant species listed on the City’s approved plant list shall be used.

(2) Planting buffer strips are required along all streets. The design of planting strips must be approved by the city engineer and must include a landscaping plan in which plant maintenance, utilities and traffic safety requirements are discussed. Where grass is approved, sod shall be installed in lieu of seeding. Prior to planting the existing soil shall be amended, or removed and replaced with suitable soil. Said landscaping plan must be approved by the city engineer.

(3) Existing trees and landscaping shall be preserved where desirable and placement of new trees shall be compatible with other features of the environment. In particular, maximum heights and spacing shall not conflict unduly with overhead utilities, or root development with underground utilities.

(4) Street trees shall be selected from the list of street trees in NBMC 18.18, or as otherwise approved by the Community and Economic Development Director as suitable for the available planting area and any obstructions. New trees shall not include poplar, cottonwood, soft maples, gum, any fruit bearing trees or any other tree or shrub whose roots are likely to obstruct sanitary or storm sewers.

(5) Landscape strips and sidewalks in the right-of-way shall be maintained by the adjacent landowner, or homeowners’ association in the case of low-impact development (LID) residential streets designed per the provisions under Section 4.03C of the Public Works Standards. The adjacent landowner shall not allow landscaping to obstruct the sidewalk or parking area along the curb, shall keep grass mowed, and shall not create an obstruction to visibility for drivers negotiating a driveway, alley, or intersection. The landowner or homeowners’ association may modify the landscaping strip with city approval.

F. Roadside Obstacles

Lateral clearance between face of curb or edge of pavement and any fixed object (excluding traffic control signs and breakaway supports) shall be 3 feet except for residential local access streets and cul-de-sacs where the clearance shall be 2 feet. Such an object shall not be placed in a sidewalk or with the object edge nearest the roadway less than 8-1/2 feet from the face of the curb in business areas or 5-1/2 feet from face of curb in residential areas. Placement of any utility structures shall be in accordance with requirements of Section 4.32, to include constraints on placement of poles on the outside of curves.
G. Roadway Barricades

Temporary and permanent barricades shall conform to the standards described in Section 6C-8 of MUTCD.

4.32 Utilities

Utilities shall be furnished and installed within the right-of-way beneath new roads, or in existing roadways and rights-of-way so as to provide minimal interference with existing utilities and shall be located as generally shown in Drawings listed herein. Where existing utilities are in place, new utilities shall conform to these Standards as nearly as practical and yet be compatible with the existing installations. Exceptions may be approved by the City when necessary to meet special or localized requirements. Utilities shall be sized and designed to serve adjacent and tributary areas. Typically, utilities shall be required to be extended to “far” property lines. Easements shall be procured and provided by the developer to facilitate same. Utilities shall not be “land locked.”

A. Waterlines

Waterlines shall be located as required and approved by the city engineer or 5 feet north and east of centerline; depth 36 inches minimum from finished grade. Mains and service connections to all lots should be completed prior to placing of surface materials.

B. Sanitary Sewers

Sanitary sewers shall be located as required and approved by the city engineer or 5 feet south and west of centerline; depth 36 inches minimum from finished grade.

Sanitary and water lines shall be horizontally and vertically separated per Washington State Department of Ecology and Department of Health minimum requirements unless otherwise approved by the city engineer.

Gravity systems, whether sanitary or storm drainage, shall have precedence over other systems in planning and installation.

C. Other Utilities

Other utilities (gas, power, telephone, fiber optic, and cable TV) shall be located as follows:

Utilities shall be placed underground, either side of road, at plan location and depth compatible with other utilities and storm drains, unless determined to not be practical by the city engineer. Minimum cover over such utilities shall be 36 inches.

Otherwise: On existing poles (as applicable) set back of ditch line or sidewalk, at locations compatible with driveways, intersections, and other essential road features. To extent practical, utilities should share facilities so that a minimum of poles are needed, and preferably on only one side of road.
Notwithstanding other provisions, underground systems shall be located at least 5 feet away from road centerline and where they will not otherwise disturb existing survey monumentation.

D. Utility Crossings in Existing Streets

For smaller diameter pipes and wires the crossing shall be made without surface cut of the traveled portion where the street is paved. The crossing shall be made by pushing or boring a pipe under the road. Where rock is known or expected in the area of the crossing, the attempt need not be first, open cutting will be permitted, but prior approval of the City is required.

4.33 Trench Backfill and Surface Restoration

Trench restoration shall be either by a patch or patch plus overlay as required by the City, and as shown in the Drawings.

A. All trench and pavement cuts shall be made by sawcuts. The cuts shall be a minimum of 1 foot outside the trench width.

B. All trenching shall be backfilled with gravel base, bank run gravel for trench backfill, suitable native excavated material, or crushed surfacing materials conforming to the WSDOT Standard Specifications. The trench shall be compacted to 95 percent maximum density, as described in Section 2-03 of the WSDOT Standard Specifications. The City will be the sole judge of approving materials to be utilized for backfill. Typically, crushed rock (5/8-inch minus) or control density fill (CDF) shall be placed and compacted in the trench sections for all right angle (±) street crossings.

If the existing native excavated material is determined by the City to be suitable for backfill, the contractor may use the native material except that the top 12 inches of the trench section shall be 5/8-inch minus crushed rock or other structurally suitable material as approved by the city engineer. Exceptions may be granted by the City based on site evaluation of excavated materials. All trench backfill materials shall be compacted to 95 percent maximum density.

Backfill compaction shall be performed in 6-inch lifts, unless otherwise approved by the City.

Replacement of the asphalt or cement concrete surfacing shall match existing asphalt or cement concrete depth, except hot mix asphalt shall be a minimum compacted thickness of 3 inches and cement concrete shall be a minimum thickness of 6 inches.

C. Tack shall be applied to the existing pavement and edge of cut and shall be emulsified asphalt grade CSS-1 as specified in Section 9-02.1(6) of the WSDOT Standard Specifications. Tack coat shall be applied as specified in Section 5-04 of the WSDOT Standard Specifications.

D. Hot mix asphalt shall be placed on the prepared surface by an approved paving machine and shall be in accordance with the applicable requirements of Section 5-04 of the
WSDOT Standard Specifications, except that longitudinal joints between successive layers of asphalt concrete shall be displaced laterally a minimum of 12 inches unless otherwise approved by the City. Fine and coarse aggregate for hot mix asphalt shall be in accordance with Section 9-03.8 of the WSDOT Standard Specifications. Hot mix asphalt over 2-inches thick shall be placed and compacted in equal lifts not to exceed 2 inches each.

All street surfaces, walks or driveways within the street trenching areas affected by the trenching shall be feathered and shimmed to an extent that provides a smooth-riding connection and expeditious drainage flow for the newly paved surface. Shimming and feathering as required by the City Inspector shall be accomplished by raking out the oversized aggregates from the hot mix asphalt as appropriate.

Surface smoothness shall be per Section 5-04.3(13) of the WSDOT Standard Specifications. The paving shall be corrected by removal and repaving of the trench only.

E. All joints and cracks shall be sealed and sanded.

F. When trenching within the roadway shoulder(s), the shoulder shall be restored to its original or better condition.

G. The final patch shall be completed as soon as possible and shall be completed within 30 days after first opening the trench. This time frame may be adjusted if delays are caused by inclement paving weather, or other adverse conditions that may exist. However, delaying of final repair is allowable only subject to the city engineer’s approval. The city engineer may deem it necessary to complete the work within the 30 days time frame and not allow any time extension. If this occurs, the Contractor shall perform the necessary work as required by the City.

4.34 Temporary Street Patching

Temporary restoration of trenches shall be accomplished by using 2-inch commercial hot mix asphalt (HMA) when available or 4-inch medium-curing (MC-250) liquid asphalt (cold mix), 3-inch asphalt treated base (ATB), or steel plates suitable for H-20 traffic loading conditions. Steel plates shall be provided with a cold mix “lip” to accommodate a smooth transition from pavement to steel plate.

All temporary patches shall be maintained by the contractor until such time as the permanent pavement patch is in place. All temporary patch materials shall be loaded and hauled to waste by the Contractor, in compliance with applicable government regulations.

If the contractor is unable to maintain a patch for whatever reason, the City will patch it at actual cost plus overhead and materials. The property owner/developer/permittee shall be invoiced for any City expenses incurred to comply with this Contractor requirement.
4.35 Material and Construction Testing

Materials shall meet requirements of Division 9 of the materials section of the WSDOT Standard Specifications for Road, Bridge, and Municipal Construction, except as specifically noted in this chapter.

Use of WSDOT Qualified Product List (QPL) and Aggregate Source Approval (ASA) databases is recommended for Approval of Materials. Use of Record of Material (ROM) and Request for Approval of Material (RAM) forms is required and needs to be approved by city prior to construction.

Testing shall be required at the developer’s or contractor’s expense. The testing shall be ordered by the developer or contractor and the chosen testing lab shall be preapproved by the City. Testing shall be done on all materials and construction as specified in the WSDOT Standard Specifications and with frequency as specified herein.

In addition, the City shall be notified before each phase that street construction commences (i.e., staking, grading, subgrade, ballast, base, top course, and surfacing).
## CITY OF NORTH BEND TESTING AND SAMPLING FREQUENCY GUIDE

<table>
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<tr>
<th>ITEM</th>
<th>TYPE OF TESTS</th>
<th>MIN. NO.</th>
<th>FREQUENCY</th>
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<td>GRADING &amp; SE</td>
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<td>BALLAST</td>
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<td>TRENCH BACKFILL</td>
<td>COMPACTION</td>
<td>1 EACH</td>
<td>1-500 LF</td>
</tr>
</tbody>
</table>

SE = Sand Equivalency

* A control lot shall be a normal day’s production. For minor quantities 200 tons or less per day, a minimum of 2 gauge readings shall be taken.
4.36 Subgrade Preparation

The subgrade area of the street right-of-way shall be prepared per Section 2-06 of the WSDOT Standard Specifications. All cleared and grubbed material shall be satisfactorily removed and disposed of properly. All depressions, or ruts, which contain water will be drained. At a minimum, the subgrade of the road shall consist of free-draining materials to a depth of 12 inches below finish grade.

The existing subgrade will be compacted to a minimum density as defined in the WSDOT Standard Specifications and as witnessed by the City Inspector. Compaction tests may be required to be conducted at the discretion of the City to verify same. All subgrade areas shall be firm and unyielding prior to placing surfacing or base course materials, and shall be confirmed by proof-rolling with a fully-loaded truck and observed by a City representative. Any soft and yielding spots shall be repaired to the satisfaction of the City prior to placement of surfacing material.

4.37 Crushed Surfacing (Top and Base Course)

Surfacing shall consist of the construction of two or more courses of crushed stone upon an existing roadway surface, or upon a subgrade properly prepared as outlined above. Crushed surfacing material shall be uniform in quality and substantially free from wood, roots, bark and other extraneous material. It will compact into a dense and unyielding mass which will be true to line, grade and cross-section. Minimum compaction of crushed materials shall be 95 percent maximum density. The crushed materials shall meet the specifications of WSDOT Section 9-03.9(3).

4.38 Surfacing Requirements

All streets in the City of North Bend will be paved with either Hot Mix Asphalt (HMA) or Portland Cement Concrete, in strict compliance with these standards. All pavement sections shall be designed by an engineer licensed in the State of Washington. The pavement design shall meet the requirements in the latest publication of the AASHTO Guide for Design of Pavement Structures. Any pavement shall be designed using currently accepted methodology that considers the load bearing capacity of the soils and the traffic carrying capacity requirements of the roadway. Plans shall be accompanied by a pavement thickness design based on soil strength parameters reflecting actual field tests and traffic loading analyses. The analysis shall include the traffic volume and axle loading, the type and thickness of roadway materials and the recommended method of placement.

When an existing asphalt paved street is to be widened, the edge of pavement shall be sawcut to provide a clean, vertical edge for joining to the new asphalt. After placement of the new asphalt section, the joint shall be sealed and the street overlaid, 2 inches, plus a prelevel course, full width throughout the effected area.

One soil sample per each 500 LF of centerline with three minimum per project representative of the roadway subgrade shall be taken by the Developer and delivered to a City approved soils lab in order to determine a statistical representation of the existing soil conditions.
Soil tests shall be performed by an engineering firm specializing in soils analysis and currently licensed in the State of Washington.

The soils report, signed and stamped by a soils engineer licensed by the State of Washington, shall be based on actual soils tests and submitted with the plans. All depths indicated are a minimum compacted depth.

Construction of streets paved with Hot Mix Asphalt shall conform to Section 5-04 of the Standard Specifications. Pavement material will be Hot Mix Asphalt Class 1/2" PG 64-22 and be constructed at least 3-inches thick (minimum compacted thickness) over the prepared crushed surface, top course, or asphalt treated base. Mechanical spreading and finishing will be as described in Section 5-04.3(9) of the Standard Specifications. Compaction will be performed by the equipment and methods presented in Section 5-04.3(10) of the Standard Specifications, and Surface Smoothness shall satisfy the requirement of Section 5-04.3(13) of the Standard Specifications.

Cement concrete streets will be designed and constructed as specified in Section 5-05 of the Standard Specifications. Cement concrete shall be placed over a minimum of 4 inches of compacted crushed surfacing.

Permanent pavement patching will be performed as described in the pavement repair detail listed herein, and in compliance with Section 5-04 of the Standard Specifications. All fill material will be placed in lifts no thicker than six inches and mechanically compacted to 95 percent of standard density, as described in Section 2-03 of the Standard Specifications and to the satisfaction of the city engineer.

The City has established minimum surfacing requirements, for collectors and local access streets only. These minimum standards are to be used in lieu of a pavement design by a licensed engineer on collector or local access streets only and only upon approval by the city engineer:

<table>
<thead>
<tr>
<th></th>
<th>Hot Mix Asphalt</th>
<th>Asphalt Treated Base or Crushed Surfacing</th>
<th>Crushed Surfacing Base Course</th>
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<td>Local Access</td>
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APPENDIX 4-1

STREETS, PEDESTRIAN PATHWAYS, AND BIKEWAYS

STANDARD DETAILS

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CITY OF NORTH BEND

RIGHT-OF-WAY 76' MIN

R-O-W LINE

MAX. SLOPE 2.5:1

PLANT STRIP

BIKE LANE

DRIVING LANE

TURN LANE

DRIVING LANE

BIKE LANE

PLANT STRIP

WATERLINE ON NORTH AND/OR EAST SIDE OF STREET, DEPTH VARIES

2' MIN.

SIDEWALK

VERTICAL CURB & GUTTER

CATCH BASIN

SANITARY SEWER LINE ON SOUTH AND/OR WEST SIDE OF STREET, DEPTH VARIES

NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY AND/OR SLOPE EASEMENT AS REQUIRED.

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.

4. TURN LANES SHALL BE CONSTRUCTED WHERE REQUIRED.

CITY OF NORTH BEND
ARTERIAL STREETS (INCLUDES CEDAR FALLS WAY FROM NORTH BEND WAY TO MALONEY GROVE AVENUE SE)
TYPICAL SECTION

APPROVED:  
MARK RIGOS, P.E.  MAY 2018

BY CITY  DATE

DWG. NO.  T-1A
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY AND/OR SLOPE EASEMENT AS REQUIRED.

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.
NOTE:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY AND/OR SLOPE EASEMENT AS REQUIRED.

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.

4. WHERE INTERSECTION BULL-OUTS ARE INSTALLED STREET WIDTH SHALL BE ADJUSTED.
CITY OF NORTH BEND

NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY EASEMENT

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.

4. TURN LANES SHALL BE CONSTRUCTED AS VEGETATED MEDIANS IN AREAS WHERE DRIVEWAYS ARE INFREQUENT OR WHEN NECESSARY TO CONSOLIDATE DRIVEWAYS.

5. WALKWAYS ON SOUTH SIDE OF STREET SHALL BE BUILT TO MATCH EXISTING TANNER TRAIL SECTION.

6. SECTION ALSO APPLIES TO THE SE MOUNT SI ROAD INTERSECTION ADJACENT TO PROPERTIES ZONED NEIGHBORHOOD BUSINESS (NB) TO THE EAST, AND WEST TO CEMETERY.

7. PARKING LANE NORTH SIDE ONLY.
CITY OF NORTH BEND

NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY AND/OR SLOPE EASEMENT AS REQUIRED.

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.

4. TURN LANES SHALL BE CONSTRUCTED AS VEGETATED MEDIANS IN AREAS WHERE DRIVEWAYS ARE INFREQUENT OR WHEN NECESSARY TO CONSOLIDATE DRIVEWAYS.

5. TRAIL ON SOUTH SIDE OF STREET SHALL BE BUILT TO MATCH EXISTING TANNER TRAIL SECTION.

6. SECTION DOES NOT APPLY TO SE MOUNT SI ROAD INTERSECTION.
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY AND/OR SLOPE EASEMENT AS REQUIRED.

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.

4. TURN Lanes SHALL BE CONSTRUCTED AS VEGETATED MEDIANS IN AREAS WHERE DRIVEWAYS ARE INFREQUENT OR WHEN NECESSARY TO CONSOLIDATE DRIVEWAYS.

5. SUBJECT TO CITY OF NORTH BEND APPROVAL, ADDITIONAL RIGHT-OF-WAY MAY BE OBTAINED OR UTILIZED ON SOUTH ROADWAY EDGE FOR EMERGENCY PARKING IN THE EVENT OF PASS CLOSURES OR OTHER.
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER, OR MINIMUM PER SECTION 4.38.

2. 5' UTILITY EASEMENT (BOTH SIDES)

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER, OR MINIMUM PER SECTION 4.38.

2. 5' UTILITY EASEMENT (BOTH SIDES)
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER, OR MINIMUM PER SECTION 4.38.

2. 5' UTILITY EASEMENT (BOTH SIDES)
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER, OR MINIMUM PER SECTION 4.38.

2. 5' UTILITY EASEMENT (BOTH SIDES)

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY AND/OR SLOPE EASEMENT AS REQUIRED.

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.

4. TURN LAKES SHALL BE CONSTRUCTED WHERE REQUIRED.

5. CURB IS INCLUDED IN SIDEWALK DIMENSION.
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY AND/OR SLOPE EASEMENT AS REQUIRED.

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER.

2. 10' UTILITY AND/OR SLOPE EASEMENT AS REQUIRED.

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER, OR MINIMUM PER SECTION 4.38.

2. 5' UTILITY EASEMENT (BOTH SIDES)

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.
CITY OF NORTH BEND

NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER, OR MINIMUM PER SECTION 4.38.

2. 5' UTILITY EASEMENT (BOTH SIDES)

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.

4. DUE TO NARROW WIDTH OF PLANTING STRIP, VEGETATION SHALL INCLUDE GRASSES, ORNAMENTAL SHRUBS, AND GROUNDCOVER, BUT SHALL NOT INCLUDE TREES.

CITY OF NORTH BEND
RESIDENTIAL LOCAL STREETS FOR LOW DENSITY RESIDENTIAL TYPICAL SECTION

MARK RIGOS, P.E.      MAY 2018
BY CITY DATE

APPROVED:                DWG. NO. T-8
NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER, OR MINIMUM PER SECTION 4.36.

2. 5' UTILITY EASEMENT (BOTH SIDES)

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.
CITY OF NORTH BEND

NOTES:

1. PAVEMENT DESIGN BY WASHINGTON STATE LICENSED CIVIL ENGINEER AND AS APPROVED BY THE CITY ENGINEER, OR MINIMUM PER SECTION 4.38.

2. 5' UTILITY EASEMENT (BOTH SIDES)

3. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.

4. AT-GRADE 12" CEMENT CONCRETE BORDER SHALL BE INSTALLED AT EDGE OF TRAVEL LANE ON OPEN SPACE SIDE OF ROADWAY. VERTICAL CURB AND GUTTER SHALL BE USED IN CONJUNCTION WITH PARKING LANE ON RESIDENTIAL SIDE OF ROADWAY.

5. PARKING LANE IS OPTIONAL. WHEN PARKING LANE IS PROVIDED, OPEN SPACE SIDE SHALL BE SIGNED WITH "NO PARKING-FIRE LANE" PER MUTCD. BOTH SIDES SHALL BE SIGNED "NO PARKING-FIRE LANE" WHEN PARKING LANE IS NOT PROVIDED. IF NO PARKING LANE IS PROVIDED, ROAD WIDTH SHALL BE MINIMUM OF 18 FEET, PLUS 12" CEMENT CONCRETE BORDER, EAST SIDE.

6. RIGHT-OF-WAY WIDTH SHALL BE 27 FEET WITH PARKING LANE AND 20 FEET WITHOUT PARKING LANE.
CITY OF NORTH BEND

PAVEMENT DESIGN BY CURRENT WASHINGTON STATE LICENSED ENGINEER AND AS APPROVED BY CITY, OR MINIMUM PER SECTION 4.38

NOTES:
1. SLOPE MUST ALLOW REASONABLE ACCESS TO ABUTTING PROPERTIES.
NOTES:

1. SEE SEC. 4.06.

2. ISLAND IS MANDATORY. MINIMUM DIAMETER 20’.

3. ISLAND AT CENTER OF BULB SHALL HAVE VERTICAL CURB.

4. ISLAND TO BE LANDSCAPED AND MAINTAINED BY ADJACENT PROPERTY OWNERS.

5. SEE SEC. 4.06 FOR CUL-DE-SAC LENGTH EXCEPTION.
NOTES:
① SEE SEC. 4.06.
② BARRICADE REQUIRED AT END OF BULB.
   SEE SEC. 4.11.
③ 28 FOOT RADIUS (TYP)
SECTION

NOTES:
1. SEE SEC. 4.07 FOR INTERSECTION REQUIREMENTS.
NOTES:

SEPARATED WALKWAYS, BIKEWAYS AND TRAILS
TYPICAL CROSSWALK
ON ARTERIAL AND COLLECTOR STREETS

NOTES:

1. ALL CROSSWALK STRIPING TO BE THERMOPLASTIC.

2. DOUBLE YELLOW STRIPING TO BE REFLECTIVE PAINT.
NOTES:
1. SEE SECTION 4.24.
2. COMMERCIAL/INDUSTRIAL DRIVEWAYS MUST BE APPROVED BY THE ENGINEER, CONSIDERING BOTH TRAFFIC SAFETY AND THE ACTIVITY BEING SERVED. ALL COMMERCIAL/INDUSTRIAL DRIVEWAYS SHALL HAVE AN EXPANSION JOINT LOCATED MID-WIDTH.
3. DRIVEWAYS SHALL BE LOCATED AS FAR FROM THE INTERSECTION AS POSSIBLE.
4. NO PORTION OF ANY DRIVEWAY SHALL ENCROACH IN CURB RETURN.
5. DRIVEWAYS SHALL BE SETBACK A MINIMUM OF 5' FROM OBJECTS.
6. MAXIMUM DRIVEWAY SLOPE IS 15% (PERCENT).
7. MAXIMUM DRIVEWAY WIDTH IS 10 FEET FOR RESIDENTIAL FRONT-LOADED SINGLE-BAY GARAGES, SIDE LOADED GARAGES AND GARAGES AT THE REAR OF THE LOT; 16 FEET FOR RESIDENTIAL FRONT-LOADED DOUBLE AND TRIPLE BAY GARAGES; 30 FEET FOR COMMERCIAL.
8. DRIVEWAYS SHALL BE SETBACK A MINIMUM OF 20 FEET FROM CROSSWALKS AND TRAFFIC CALMING DEVICES.
9. ALL DRIVEWAYS SHALL BE PAVED WITH ASPHALT OR CONCRETE.
SECTION

NOTES:

1. THRU JOINTS AND CONTRACTION JOINTS SHALL BE AS SHOWN ABOVE. THRU JOINTS SHALL ALSO BE PLACED IN THE SIDEWALK SECTION AT DRIVEWAY RETURNS. ALL JOINTS SHALL BE CLEAN AND EDGED WITH AN EDGE HAVING 1/4" RADIUS. JOINT SHALL BE FLUSH WITH THE FINISHED SURFACE.

2. ALL METER BOXES, ETC. IN SIDEWALK AREAS SHALL HAVE 3/8" JOINT MATERIAL (FULL DEPTH) PLACED AROUND THEM BEFORE PLACING CONCRETE.

3. PREMOLDED JOINT FILLER SHALL BE ASPHALT SATURATED FELT OR PAPER, FULL DEPTH OF SIDEWALK.

4. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THESE SPECIFICATIONS.

5. CEMENT CONCRETE SHALL BE AIR-ENTRAINED CLASS 3000 PSI, EXCEPT CLASS 4000 SHALL BE USED AT DRIVEWAY CROSSINGS.

6. FOR SIDEWALKS GREATER THAN 8' IN WIDTH, ADDITIONAL EXPANSION AND CONTRACTION JOINTS WILL BE REQUIRED.

PLAN

CITY OF NORTH BEND

SIDEWALK WITHOUT PLANTING STRIP

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE T-18
SECTION

NOTES:

1. THRU JOINTS AND CONTRACTION JOINTS SHALL BE AS SHOWN ABOVE. THRU JOINTS SHALL ALSO BE PLACED IN THE SIDEWALK SECTION AT DRIVEWAY RETURNS. ALL JOINTS SHALL BE CLEAN AND EDGED WITH AN EDGE HAVING 1/4" RADIUS. JOINT SHALL BE FLUSH WITH THE FINISHED SURFACE.

2. ALL METER BOXES, ETC. IN SIDEWALK AREAS SHALL HAVE 3/8" JOINT MATERIAL (FULL DEPTH) PLACED AROUND THEM BEFORE PLACING CONCRETE.

3. PREMOLDED JOINT FILLER SHALL BE ASPHALT SATURATED FELT OR PAPER, FULL DEPTH OF SIDEWALK.

4. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THESE SPECIFICATIONS.

5. CEMENT CONCRETE SHALL BE AIR-ENTRAINED CLASS 3000 PSI, EXCEPT CLASS 4000 SHALL BE USED AT DRIVEWAY CROSSINGS.

6. FOR SIDEWALKS GREATER THAN 8' IN WIDTH, ADDITIONAL EXPANSION AND CONTRACTION JOINTS WILL BE REQUIRED.

PLAN

CITY OF NORTH BEND

SIDEWALK WITH PLANTING STRIP

APPROVED: .................................................................................................

MARK RIGOS, P.E. .....................................................................................

MAY 2018 ..................................................................................................

BY CITY .......................................................................................................
INTERSECTION DIAGRAM

DIMENSIONS:

A - VARIES 22' - 36'
B - 25' MIN.
C - 1'-0" - 5'-0"
D - VARIES
E - 20' MIN.

NOTE: TRAFFIC CIRCLES SHALL NOT BE CONSTRUCTED ON COLLECTOR OR LOCAL ACCESS STREETS.
TYPICAL TRAFFIC CIRCLE

PLANT MATERIAL PER CITY-APPROVED LANDSCAPING PLAN

CURB, CEMENT CONCRETE MOUNTABLE

THROUGH JOINTS:
USE 4 FOR < 20' DIAMETER.
USE 8 FOR ≥ 20' DIAMETER.

2 - NO. 3 BARS (TYP. BETWEEN JOINTS)

3 - NO. 3 CURB DOWELS (TYP. BETWEEN JOINTS)

TYPICAL SECTION A

PLANT MATERIAL PER CITY-APPROVED LANDSCAPING PLAN

PLANTING MULCH (2")

TOP SOIL (3")

EX. CONC. OR HMA
NO. 3 BARS TYP.
NO. 3 CURB DOWEL

LINE DRILL REMOVE PAVEMENT
CURB, CEMENT CONCRETE MOUNTABLE (DOWELED)

OM1-3 OR OM1-1

18" x 18" YELLOW HIGH INTENSITY TYPE 1 OBJECT MARKER PLACED IN TRAFFIC CIRCLE FOR EACH APPROACH.

30" x 30" BLACK ON YELLOW PLACED 75' TO 100' BACK FROM TRAFFIC CIRCLE ON EACH APPROACH.

NOTE: LANDSCAPED AREAS MUST BE PROVIDED WITH SEPARATE WATER METER. ALL IRRIGATION PLANS MUST BE APPROVED BY THE CITY.
**OFFSET HAMMERHEAD**

**HAMMERHEAD**

**NOTES:**
1. This turnaround shall only be utilized if specifically approved in writing by the city.
2. All dimensions are minimum requirements.
3. Minimum road width shown does not include any shoulder dimensions or curb dimensions if required.
4. All legs of the turnaround shall be a minimum of 20 feet of unobstructed width.
5. The turnaround shall be marked as a fire lane.
6. The turnaround shall meet the same grade and surfacing standards applied to fire access roads.
7. The maximum cross slope on turnaround shall not exceed six percent.
8. Alternative designs that do not meet the criteria established in this section may be approved by the city.
VERTICAL CONCRETE CURB AND GUTTER

NOTES:

1. THE CURBS, GUTTERS AND SIDEWALKS SHALL HAVE EXPANSION JOINTS (3/8") AT INTERVALS OF NOT GREATER THAN 15'-0"

2. CEMENT CONCRETE SHALL BE AIR–ENTRAINED CLASS 3000, EXCEPT CLASS 4000 SHALL BE USED AT DRIVEWAY APPROACHES.

3. WHEN REPAIRING AND/OR REPLACING CEMENT CONCRETE CURB AND GUTTER, EXISTING CURB AND GUTTER SHALL BE REMOVED TO THE NEAREST JOINT, SAWCUTTING AND REMOVAL SHALL NOT BE ALLOWED.
NOTES:

1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15 FEET MAXIMUM SPACING WHEN DRIVEWAY WIDTHS EXCEED 30 FEET.

2. ALL CEMENT CONCRETE SHALL BE AIR-ENTRAINED.

3. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE LINE BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.

4. THE RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAX. LENGTH, THE RUNNING SLOPE OF THE RAMP SHALL BE AS FLAT AS FEASIBLE.

5. MINIMUM LENGTH OF FULL HEIGHT CURB BETWEEN DRIVEWAYS SHALL BE 2 FEET.
NOTES:

1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15 FEET MAXIMUM SPACING WHEN DRIVEWAY WIDTHS EXCEED 30 FEET.

2. ALL CEMENT CONCRETE SHALL BE AIR-ENTRAINED.

3. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE LINE BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.

4. THE RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAX. LENGTH, THE RUNNING SLOPE OF THE RAMP SHALL BE AS FLAT AS FEASIBLE.

5. MINIMUM LENGTH OF FULL HEIGHT CURB BETWEEN DRIVEWAYS SHALL BE 2 FEET.
NOTES:

1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15 FEET MAXIMUM SPACING WHEN DRIVEWAY WIDTHS EXCEED 30 FEET.

2. ALL CEMENT CONCRETE SHALL BE AIR-ENTRAINED.

3. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE LINE BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.

4. THE RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAX. LENGTH, THE RUNNING SLOPE OF THE RAMP SHALL BE AS FLAT AS FEASIBLE.

5. MINIMUM LENGTH OF FULL HEIGHT CURB BETWEEN DRIVEWAYS SHALL BE 2 FEET.

LEGEND

SLOPE IN EITHER DIRECTION
NOTES:

1. WHEN THE DRIVEWAY WIDTH EXCEEDS 15 FEET, CONSTRUCT A FULL DEPTH EXPANSION JOINT WITH 3/8" JOINT FILLER ALONG THE DRIVEWAY CENTERLINE. CONSTRUCT EXPANSION JOINTS PARALLEL WITH THE CENTERLINE AS REQUIRED AT 15 FEET MAXIMUM SPACING WHEN DRIVEWAY WIDTHS EXCEED 30 FEET.

2. ALL CEMENT CONCRETE SHALL BE AIR-ENTRAINED.

3. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE LINE BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.

4. THE RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAX. LENGTH, THE RUNNING SLOPE OF THE RAMP SHALL BE AS FLAT AS FEASIBLE.

5. MINIMUM LENGTH OF FULL HEIGHT CURB BETWEEN DRIVEWAYS SHALL BE 2 FEET.
NOTES
1. CURB RAMP LOCATION SHALL BE PLACED WITHIN THE WIDTH OF THE ASSOCIATED CROSSWALK.
2. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE GRADE BREAK BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.
3. DO NOT PLACE GRATING, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.
4. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15-FOOT MAX. LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.
5. CURB RAMP, LANDING, AND FLARES SHALL RECEIVE BROOM FINISH.
6. PEDESTRIAN CURB MAY BE OMITTED IF THE GROUND SURFACE AT THE BACK OF THE CURB RAMP AND/OR LANDING WILL BE AT THE SAME ELEVATION AS THE CURB RAMP OR LANDING AND THERE WILL BE NO MATERIAL TO RETAIN.
7. SUBGRADE AND FORM INSPECTION BY THE CITY SHALL BE REQUIRED PRIOR TO PLACING CEMENT CONCRETE. ALL CEMENT CONCRETE SHALL BE AIR-ENTRAINED.

LEGEND
SLOPE IN EITHER DIRECTION

CITY OF NORTH BEND
PARALLEL CURB RAMP

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE T-24A
NOTES

1. PROVIDE A SEPARATE CURB RAMP FOR EACH MARKED OR UNMARKED CROSSWALK. CURB RAMP LOCATION SHALL BE PLACED WITHIN THE WIDTH OF THE ASSOCIATED CROSSWALK.

2. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE GRADE BREAK BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.

3. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS, OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.

4. THE CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15- FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15- FOOTMAXIMUM LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.

5. CURB RAMP, LANDING, AND FLARES SHALL RECEIVE BROOM FINISH.

6. SUBGRADE AND FORM INSPECTION BY THE CITY SHALL BEREQUIRED PRIOR TO PLACING CEMENT CONCRETE. ALL CEMENT CONCRETE SHALL BE AIR-ENTRAINED.

LEGEND

SLOPE IN EITHER DIRECTION

CITY OF NORTH BEND
PERPENDICULAR CURB RAMP

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE
NOTES

1. THIS PLAN IS TO BE USED WHERE PEDESTRIAN CROSSING IN ONE DIRECTION IS NOT PERMITTED.

2. CURB RAMP LOCATION SHALL BE PLACED WITHIN THE WIDTH OF THE ASSOCIATED CROSSWALK, OR AS SHOWN IN THE CONTRACT PLANS.

3. WHERE "GRADE BREAK" IS CALLED OUT, THE ENTIRE LENGTH OF THE GRADE BREAK BETWEEN THE TWO ADJACENT SURFACE PLANES SHALL BE FLUSH.

4. DO NOT PLACE GRATINGS, JUNCTION BOXES, ACCESS COVERS OR OTHER APPURTENANCES IN FRONT OF THE CURB RAMP OR ON ANY PART OF THE CURB RAMP OR LANDING.

5. CURB RAMP MAXIMUM RUNNING SLOPE SHALL NOT REQUIRE THE RAMP LENGTH TO EXCEED 15 FEET TO AVOID CHASING THE SLOPE INDEFINITELY WHEN CONNECTING TO STEEP GRADES. WHEN APPLYING THE 15 FOOT MAXIMUM LENGTH, THE RUNNING SLOPE OF THE CURB RAMP SHALL BE AS FLAT AS FEASIBLE.

6. CURB RAMPS AND LANDINGS SHALL RECEIVE BROOM FINISH.

7. PEDESTRIAN CURB MAY BE OMITTED IF THE GROUND SURFACE AT THE BACK OF THE CURB RAMP AND/OR LANDING WILL BE AT THE SAME ELEVATION AS THE CURB RAMP OR LANDING AND THERE WILL BE NO MATERIAL TO RETAIN.

8. SUBGRADE AND FORM INSPECTION BY THE CITY SHALL BE REQUIRED PRIOR TO PLACING CEMENT CONCRETE. ALL CEMENT CONCRETE SHALL BE AIR-ENTRAINED.

LEGEND

- SLOPE IN EITHER DIRECTION
NOTE: ALL CEMENT CONCRETE SHALL BE AIR-ENTRAINED
NOTES

1. THE DETECTABLE WARNING SURFACE (DWS) SHALL EXTEND THE FULL WIDTH OF THE CURB RAMP (EXCLUSIVE OF FLARES) OR THE LANDING.

2. THE DETECTABLE WARNING SURFACE SHALL BE PLACED AT THE BACK OF CURB, AND NEED NOT FOLLOW THE RADIUS.

3. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED TO BE PERPENDICULAR TO THE GRADE BREAK AT THE BACK OF CURB.

4. THE ROWS OF TRUNCATED DOMES SHALL BE ALIGNED TO BE PARALLEL TO THE DIRECTION OF TRAVEL.

5. IF CURB AND GUTTER ARE NOT PRESENT, SUCH AS A SHARED-USE PATH CONNECTION, THE DETECTABLE WARNING SURFACE SHALL BE PLACED AT THE PAVEMENT EDGE.

6. WHEN THE GRADE BREAK BETWEEN THE CURB RAMP AND THE LANDING IS LESS THAN OR EQUAL TO 5 FT. FROM THE BACK OF CURB AT ALL POINTS, PLACE THE DETECTABLE WARNING SURFACE ON THE BOTTOM OF THE CURB RAMP.
NOTES:
1. MACHINE BEARING FACES OF COVER AND CASE TO INSURE POSITIVE FIT.
2. MATERIAL SHALL CONFORM TO THE CURRENT EDITION OF STANDARD SPECIFICATIONS.
3. SEE 4.31A(3) FOR REQUIRED LOCATIONS.

MONUMENT COVER

NEAT LINE CUTS SHALL BE SEALED WITH A HOT ASPHALT EMULSION AND COVERD WITH SAND

CAST IRON MONUMENT COVER AND CASE

1 1/2" MIN. COMPACTED THICKNESS ASPHALT CONCRETE CLASS "B"

CEMENT CONCRETE CLASS 3000 PSI

1" MIN. SAND

PAVEMENT SECTION VARIES

CEMENT CONCRETE CL 3000 PSI

BRASS DISC MARKER STAMPED BY LICENSED SURVEYOR

1-#3 STIRRUP

UNDISTURBED EARTH

POURED-IN-PLACE MONUMENT

CITY OF NORTH BEND
POURED-IN-PLACE MONUMENT

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE

T-25
NOTES:

1. See Section 4.31.
2. WSDOT/APWA 9-03.12(4)
3. Fence or handrail may be required when rockery height exceeds 30 inches and is located in a public area.
4. The wall foundation is to be cleared of organic matter and debris and the underlying mineral soil compacted to 95 percent of the max. dry density.
5. Zone of influence. Flatter slope may be required in less stable soils. All driveways, parking areas, and roads shall lie below the zone of influence.
6. Height for building permit purposes. Maximum height, as measured from the keyway, is eight (8) feet. All walls four feet or higher shall require a building permit. All walls supporting a surcharge (driveway, road, building, or parking area) shall require design by a licensed engineer.
7. The top of all rock walls shall be configured to prevent surface drainage over the top of the wall.
NOTES:

1. SEE SECTION 4.31.
2. WSDOT/APWA 9–03.12(4)
3. FENCE OR HANDRAIL MAY BE REQUIRED WHEN ROCKERY HEIGHT EXCEEDS 30 INCHES AND IS LOCATED IN A PUBLIC AREA.
4. THE WALL FOUNDATION IS TO BE CLEARED OF ORGANIC MATTER AND DEBRIS AND THE UNDERLYING MINERAL SOIL COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY. THE EMBANKMENT MATERIAL IS TO BE GRAVEL BORROW MEETING THE REQUIREMENTS OF 9–03.14 OF THE WSDOT STANDARDS. THE BACKFILL IS TO BE PLACED IN THIN LIFTS, NOT EXCEEDING SIX INCHES IN THICKNESS AND COMPACTED TO 95 PERCENT OF THE MAX. DRY DENSITY.
5. ZONE OF INFLUENCE. FLATTER SLOPE MAY BE REQUIRED IN LESS STABLE SOILS. ALL DRIVEWAYS, PARKING AREAS, AND ROADS SHALL LIE BELOW THE ZONE OF INFLUENCE.
6. HEIGHT FOR BUILDING PERMIT PURPOSES. MAXIMUM HEIGHT, AS MEASURED FROM THE KEYWAY, IS EIGHT (8) FEET. ALL WALLS FOUR FEET OR HIGHER SHALL REQUIRE A BUILDING PERMIT. ALL WALLS SUPPORTING A SURCHARGE (DRIVEWAY, ROAD, BUILDING, OR PARKING AREA) SHALL REQUIRE DESIGN BY A LICENSED ENGINEER.
7. THE TOP OF ALL ROCK WALLS SHALL BE CONFIGURED TO PREVENT SURFACE DRAINAGE OVER THE TOP OF THE WALL.
8. OVERBURDEN SHALL EXTEND BEYOND THE CUT FACE AT LEAST THE HEIGHT OF THE WALL.
SAWCUT AS REQUIRED AND REMOVE ASPHALT. CLEAN AND TACK EDGES WITH SEALER CSS-1 AND SEAL JOINTS WITH HOT ASPHALT CEMENT (AR-4000W) AND SAND.

EXISTING PAVEMENT

FULL MORTAR CONTINUOUS JOINT

CONCRETE ADJUSTMENT RINGS

2" MIN. COMPACTED THICKNESS HOT MIX ASPHALT

CEMENT CONCRETE COLLAR (CLASS 3000 PSI) WITH WIRE MESH

NOTES:

1. HOT MIX ASPHALT SHALL BE HMA CLASS 1/2" PG 64-22.

2. ALL JOINTS SHALL BE SEALED WITH MATERIALS AND IN A MANNER TO PREVENT "TRACKING" OF SEALANT.
WITHIN TRAVELED WAY

OUTSIDE OF TRAVELED WAY

NOTES:

1. ALL MATERIALS EXCEPT HMA AND BEDDING MATERIAL SHALL BE COMPACTED IN 6-INCH MAXIMUM LIFTS TO 95% DENSITY.

2. BEDDING SHALL CONFORM TO STANDARD SPECIFICATIONS.

3. COMPACATION: BEDDING SHALL BE COMPACTED TO 95% MAX. AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE COMPACTED TO 85% IN UNPAVED AREA, AND 95% IN PAVED OR SHOULDER AREAS AS DETERMINED BY ASTM D1557.

4. ALL MATERIALS, WORKMANSHIP, AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AS AMENDED BY CITY STANDARDS.

5. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. A BELL JOINT SHALL BE REQUIRED AT EACH JOINT FOR PROPER SUPPORT. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.

6. BANK RUN GRAVEL FOR TRENCH BACKFILL UNLESS OTHERWISE APPROVED BY CITY.

7. ALL EDGES SHALL BE NEAT-LINE SAWCUT.

8. CLASS "B" ASPHALT SHALL BE HMA CLASS B PG 58-22
SECTION 5
STORM DRAINAGE

Planning, Designing, and Constructing

Drainage Systems for Collection, Conveyance,

Treatment, and Discharge of Storm Water Runoff...
SECTION 5  STORM DRAINAGE

5.01 General

All development projects shall evaluate the project’s impact with respect to storm drainage and design and construct temporary measures and conduct best management practices (BMPs) necessary to prevent sediment-laden water from entering the drainage system during construction. Projects shall design and construct permanent conveyance, flow control, and water quality treatment facilities to mitigate for increased volume and rate of stormwater runoff and increased pollution in stormwater runoff from the project site. The analysis, design, implementation, and construction of necessary facilities shall be as required in NBMC 14.16 and the currently adopted King County Surface Water Design Manual (“surface water design manual”). Runoff computation and facility design shall utilize the King County Runoff Time Series (KCRTS) program.

The standards established by this chapter are intended to represent the minimum standards for the design and construction of storm drainage facilities and to supplement NBMC 14.16 and the surface water design manual. Greater or lesser requirements may be mandated by the City due to localized conditions. All storm drains and facilities shall be designed by a professional engineer licensed in the State of Washington.

If warranted based on the condition and capacity of the existing storm drainage infrastructure (or lack thereof) and impacts caused by the proposed development, off-site improvements may be required, at the Public Works Director’s discretion, to mitigate impacts caused by the proposed development.

When working on existing drainage systems, including stream culverts, the bypass of incoming storm flows or stream flows shall be the responsibility of the party performing the work. Bypass shall be conducted with the least possible disturbance to traffic, adjacent properties, upstream and downstream drainage systems, and natural drainage systems.

Plugging and abandonment of existing pipes shall be in accordance with the Standard Specifications, however, storm drainage structures that are found or will no longer be used shall be removed and the resulting void filled with suitable compacted backfill material. Abandoned pipes shall be shown on as-built drawings.

5.02 Design Standards

All drainage facilities shall be designed and constructed in accordance with the surface water design manual. The following additional design considerations shall apply:

A. Parking lots shall not be used for stormwater detention.

B. Generally, storm drainage facilities located in public right-of-way or tracts dedicated to the City shall be publicly owned and maintained. The City may assume maintenance responsibility for some facilities located on private property under certain conditions. Otherwise facilities located on private property shall be privately owned and maintained with the City having right of entry for inspection. Privately owned and maintained facilities shall be constructed to the standards described herein. The owner of the facility shall be clearly defined, with documents recorded against the property’s title.

C. Privately maintained storm drainage facilities may be allowed within the public right-of-way only upon city approval. For instances where storm drainage facilities are located within the public right-of-way, and said facilities have specific landscaping requirements (i.e., bioretention,
bioswales, etc.,), the facilities shall be maintained by the adjacent landowner, homeowners’ association, or similar organization.

D. The Standard Plan Notes, as contained in the appendices and further referenced herein shall be included on any plans submitted to the City for construction approval dealing with storm system design.

E. The City has implemented supplemental requirements for the design and construction of stormwater facilities. All stormwater facilities constructed within the city shall be constructed in accordance with these requirements, which will provide a better functioning storm drainage system that provides safe, efficient, and maintainable facilities that are aesthetically pleasing and allow for potential expansion to provide protection of the environment. Therefore, the following shall be required for construction of new stormwater facilities:

1. General
   
   a. All open stormwater facilities shall be landscaped as described in the surface water design manual, Title 18.18 NBMC, and as approved by the City.
   
   b. Stormwater facilities shall not be located where, in the City’s opinion, the facility will create an attractive nuisance or be considered as unattractive from any public street, park, or venue.
   
   c. When preparing the Technical Information Report and construction drawings, the engineer shall make appropriate accommodation for conveyance and bypass of upstream off-site runoff AND discharge onto adjacent downstream properties. This will include provisions for easements to accommodate upstream properties and/or constructing a tight line system across downstream properties (in an appropriate easement) where a suitable natural or previously constructed tight line system does not exist.
   
   d. No storm drainpipe shall be buried deeper than 20 feet except that installation to a depth greater than 20 feet can be approved to avoid the need for a pump system. Manhole access to a pipe deeper than 20 feet shall include a minimum 60-inch-diameter manhole and a grated landing mid-way.
   
   e. Unless otherwise approved by the City, pipes shall not be located underneath sidewalks, driveways, walls, or landscaped areas except for where drainpipes cross perpendicular to these areas.
   
   f. Where frontage improvements are required by the city, the developer shall include them in the detention and treatment calculations and provide detention and treatment for those improvements.
   
   g. Unless otherwise approved by the City, pump systems will not be allowed for conveying storm runoff to a detention or treatment system.
   
   h. Depending upon the soils and moisture conditions, for steep pipe runs, trench dams may be required to prevent the flow of water along the trench. If required, the trench drains shall be connected into the structures to drain the trench, and prevent water from “piping” down the trench.
Detention and Treatment Facilities

(a) Underground vaults or tanks shall not be located underneath public roads.

(b) Underground vaults or tanks shall not protrude above the ground surface in any location. Where site conditions warrant and the City approves a portion of a vault to extend above the ground surface, the area shall be screened with landscaping and the exposed portion shall be configured with a decorative facing approved by the City.

(c) Underground vaults shall be equipped with a locking hatch as described in the KCSWDM, rather than a standard manhole cover.

(d) Underground vaults and tanks shall be accommodated with easements or setbacks large enough to provide for the complete replacement (without encroaching on any other structures, utilities, or roads) of the structure, should replacement be required in the future.

(e) Open vaults with exposed vertical side(s) shall be prohibited.

New Technology

Regarding new and evolving technology for treating stormwater, only those self-contained treatment devices certified by the Department of Ecology with a General Use Level Designation (GULD) will be approved. If selected, the developer shall provide proof that the associated maintenance costs do not exceed 50 percent of the total revenue from the stormwater utility fees for that specific project.

Biofiltration

(a) Bioswales shall only be constructed where approved by the city. Specifically, bioswales shall not be constructed in areas that are shaded during the growing season or between single family residences or commercial buildings.

(b) Bioswales shall not be constructed with vertical side(s).

(c) Bioswales shall not be designed as wet swales. Bioswales shall not be designed with a longitudinal slope less than 1.5 percent.

Pond Design Criteria

(a) Bollards or a gate shall be installed approximately 25 feet from the edge of the traveled way in order to provide a safe parking area for maintenance personnel when accessing the pond.

Easements and Dedications

(a) For privately owned and/or operated storm drainage systems, the developer shall execute and record a Declaration of Covenant that identifies the property and the storm drainage system, allows access to the city to inspect and maintain, if
necessary, and identifies the private owner as the party responsible for operation and maintenance.

(b) All easements shall be of sufficient width to allow complete replacement of the identified storm system component without encroaching into the foundation support of nearby buildings, walls, roads, steep slopes, driveways, utilities, sidewalks, or other structures.

(c) All easements shall be provided in a form acceptable to the city and recorded at the King County assessor’s office prior to allowing the construction of a building on the property, or prior to recording of a plat. For land subdivisions, the easements may be shown on the plat map so long as the plat map identifies the specific party to which the easement is granted (grantee), the restrictions for the grantee and grantor, and clearly identifies the dimensions of the easement(s).

(d) No public storm drainage easement shall be less than 15 feet in width. Where the easement is provided to gain access to a structure (catch basin, manhole, inlets) the easement width shall not be less than 20 feet. Building setbacks shall be applied at the easement boundary. Private storm drain easements may be 10 feet in width.

(e) Pipes and swales not located in the center of the easement shall have at least 7.5 feet (5.0 feet for private easements) of easement width from the pipe or swale to the edge of the easement.

(f) Easements shall be located entirely on a single property and shall not be split along property lines.

(g) Where easements are provided between properties to convey runoff from an upstream property to a downstream conveyance system within a single project (e.g., subdivision), the conveyance system shall be installed as a requirement of the plat recording or project final approval.

(7) Infiltration Design Criteria

(a) The fluctuation of groundwater levels in the City is very dynamic, and therefore, determining the wet season high groundwater level can be difficult, depending upon the time of year that groundwater observations are made. In addition to typical soil explorations and infiltration testing, groundwater levels, for the design of infiltration facilities, shall be monitored during the wet season. The monitoring shall include at least 3 months during the period of November 1 through March 31. This information shall be made available prior to engineering plan approval.

F. The city encourages the use of low impact design for the purpose of reducing stormwater quantity and quality impacts. These LID techniques may include those items listed in NBMC 18.50.070, as summarized herein, and also the specific requirements for LID street design in Section 4.03:

(1) Maximizing retention of native forest cover and restoring disturbed vegetation to intercept, evaporate, and transpire precipitation.

(2) Preserve permeable, native soil and enhance disturbed soils to store and infiltrate storm
flows.

(3) Retain and incorporate topographic features that slow, store, and infiltrate stormwater.

(4) Retain and incorporate natural drainage features and patterns.

(5) Locate buildings and roads away from critical areas and soils that provide effective infiltration.

(6) Minimize total impervious area and limit effective impervious surfaces.

(7) Manage stormwater as close to its origin as possible to utilize small scale, distributed hydrologic controls.

(8) Create a hydrologically rough landscape that slows storm flows and increases the time of concentration. Increase the reliability of the stormwater management system by providing multiple or redundant points of control.

(9) Integrate stormwater controls into the development design and utilize the controls as amenities; create a multifunctional landscape.

5.03 Conveyance

The minimum pipe size shall be 12-inches diameter and minimum pipe slope shall be 0.5 percent. Nothing shall preclude the City from requiring the installation of a larger sized main if the City determines a larger size is needed to serve adjacent areas or for future service.

All pipe for storm mains shall be “preapproved” by the director based on localized conditions and comply with the WSDOT Standard Specifications Section 7-04. For conventional construction, storm pipe shall be lined corrugated polyethylene, solid wall PVC, or ductile iron, unless otherwise approved by the director. For above-ground steep slope pipe systems, the pipe material shall be butt fuse-welded high density polyethylene (HDPE), with energy-dissipation tee at the bottom of the slope, prior to discharge.

Where storm drain pipes run outside the public right-of-way, permanent easements shall be recorded for public or private maintenance as may be required and warranted. A construction (temporary) easement of suitable width shall also be provided prior to start of construction.

Maximum catch basin spacing shall be 200 feet on road grades up to 3 percent, 300 feet when the road grade is 3 percent or greater, with a 400-foot maximum spacing on main storm drains between access structures, whether catch basins or manholes. No surface water shall cross any roadway, unless approved by the City. In addition, catch basins shall be placed whenever the length of surface drainage exceeds 300 feet, extending either direction from crest or sag vertical curves.

Through-curb inlets shall be provided in all low spots, where possible. Otherwise, a combination of two inlets and one catch basin may be used in low spots in lieu of a through-curb inlet. Vaned grates shall be installed on all catch basins located within the street, gutter, or shoulder. Herringbone grates may be used in high pedestrian areas, including parking lots and crosswalks. Catch basin grates shall be non-locking when located within the public right-of-way, and locking when located outside the public right-of-way. Catch basins or manholes that do not collect runoff, and also control structures, shall use solid locking covers.
5.04  Manholes, Catch Basins, and Connections

All manholes and catch basins shall be constructed from precast concrete bases and risers. Cast-in-place concrete bases shall only be used for “straddle” of existing systems and shall be watertight.

In areas of new and existing pavement, the grate rim elevation shall be set to promote drainage flow. In unimproved areas, the rim elevations shall be set 2-inches above finished grade unless otherwise shown on the Plans.

Connection of new storm drain pipe into an existing main storm drain shall be made only with a new structure. Where piping is to be connected to existing structures, the opening(s) shall be core-drilled in the structure. The use of jackhammers and/or sledgehammers to knock out the hole shall not be allowed.

Where pipes of dissimilar materials are connected, a coupling device specifically manufactured for that purpose shall be used. Where pipe of differing sizes are installed at a structure, the crown of laterals and smaller mains shall match the crown of the larger, exiting main.

Unless otherwise approved, drain pipe shall be connected to manholes and Type 2 catch basins as follows:

<table>
<thead>
<tr>
<th>Pipe Type</th>
<th>Connection System</th>
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<tbody>
<tr>
<td>DI</td>
<td>Kor-N-Seal*</td>
</tr>
<tr>
<td>HDPE</td>
<td>Kor-N-Seal*</td>
</tr>
<tr>
<td>PVC</td>
<td>Kor-N-Seal*</td>
</tr>
<tr>
<td>Corrugated Polyethylene</td>
<td>Per Manufacturer’s Recommendation</td>
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<tr>
<td></td>
<td>*Or City approved equal.</td>
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</tbody>
</table>

If the angle of a storm drain pipe entering a Type 1 or Type 1-L catch basin is such that the standard knockout must be enlarged by hammering and removing portions of the basin wall, then a larger structure shall be used. Spacing between pipes entering the same structure shall be in accordance with the manufacturer’s recommendations.

5.05  Trench Excavation

Installation of storm drains shall be performed in accordance with WSDOT Section 7-08 of the Standard Specifications. This is supplemented by the following:

A. Clearing and grubbing where required shall be performed within the easement or public right-of-way as permitted by the City and/or governing agencies. Debris resulting from the clearing and grubbing shall be disposed of in accordance with the terms of all applicable permits.

B. The trench shall be kept free from water until joining is complete. Surface water shall be diverted so as not to enter the trench. The Contractor shall maintain sufficient pumping equipment on the job to insure that these provisions are carried out. Disposal of the water shall be in such a manner as not to cause a nuisance or menace to the public. The dewatering system shall be installed and operated so that the groundwater level outside the excavation is not reduced to the extent that would damage or endanger adjacent structures or property.

C. The contractor shall perform all excavation of every description and whatever substance encountered and boulders, rocks, roots and other obstructions shall be entirely removed or cut out to the width of the trench and to a depth 6 inches below storm line grade. Where materials are
removed from below the pipeline grade, the trench shall be backfilled to grade with material satisfactory to the City and thoroughly compacted.

D. Trenching and shoring operations shall not proceed more than 100 feet in advance of pipe laying without specific written approval of the City, and shall be in conformance with Washington Industrial Safety and Health Administration (WISHA) and Office of Safety and Health Administration (OSHA) Safety Standard.

E. The bedding course shall be finished to grade with hand tools in such a manner that the pipe will have bearing along the entire length of the barrel. The bell holes shall be excavated with hand tools to sufficient size to facilitate the construction of pipe joints.

5.06 Bedding

Generally, bedding for storm sewer pipes shall be “pea gravel” meeting the specifications for a relatively round, processed, washed rock with:

100% passing the 3/8-inch screen
0% passing the #4 screen

If necessary on steep pipe runs, the pipe trench shall be constructed with trench dams of clay or CDF to prevent the migration of water through the pea gravel. Water collected in the trench shall be piped to a suitable discharge location.

For convenience, crushed rock bedding conforming to Section 9-03.9(3) Crushed Surfacing Top Course of the Standard Specification may also be used as bedding material for pipe. Native Material shall not be used for bedding, unless approved by the director.

Selected bedding material shall be placed and compacted around and under the storm drain by hand tools. Special precautions should be provided to protect the pipe to a point 12 inches above the crown of the pipe.

5.07 Backfilling

Backfilling and surface restoration shall closely follow installation of pipe so that not more than 100 lineal feet of trench is left exposed during construction hours. Above the pipe bedding, the remaining backfill shall be compacted to 95 percent of the maximum density in traveled areas, 90 percent outside driveway, roadways, shoulders, parking, or other traveled areas.

Typically, trench sections crossing existing roadways, or beneath traffic bearing areas shall be backfilled and compacted with Crushed Surfacing Base Course per Section 9-03.9(3) of the Standard Specifications. Due to localized conditions, the City may allow/permit the backfill of the trench section with suitable excavated material, as determined by the City, or if this material is not available from trenching operations, the City may order the placing and compaction of Gravel Borrow per Section 9-03.14(1) of the Standard Specifications (WSDOT) for backfilling the trench. All excess material shall be loaded and hauled to waste.

The top 4 feet of longitudinal trenches in paved areas shall be backfilled with Crushed Surfacing Base Course per Section 9-03.9(3) of the Standard Specifications.
5.08 Testing

Materials testing, trench backfill compaction testing, and low-pressure air tests shall be required for storm drainage systems.

5.09 Street Patching and Restoration

See Section 4 for requirements regarding street patching and trench restoration.

5.10 Adjustment of New and Existing Utility Structures to Grade

This work consists of constructing and/or adjusting all new and existing utility structures encountered on the project to finished grade. All utility castings and monuments within the existing and/or new pavement area shall be referenced by the Contractor prior to any pavement removal or planing. The Contractor shall keep a record of such references, and submit a copy to the City.

Existing structures and new structures shall be adjusted to the finished grade as shown on the Details and as further specified herein. Existing boxes, rings, grates, covers, and lids shall be reset in a careful and workmanlike manner to conform to the required grades.

The new and existing utility castings and monuments shall be adjusted to grade in the following manner:

As soon as the street has been paved past each structure or casting, the asphalt concrete mat shall be scored around the location of the structure or casting. After rolling has been completed and the mat has cooled, it shall be cut along the scored lines. The structure or casting shall then be raised to finished pavement grade and the annular spaces filled. The pavement shall be installed to give a smooth finished appearance. All covers, lids, frames, and grates shall be thoroughly cleaned.

After pavement is in place, all new pavement joints shall be sealed with a 6-inch-wide strip of hot asphalt sealer. A sand blanket shall be applied to the surface of the hot asphalt sealer immediately after the placement of the sealer to help alleviate the tracking of the asphalt. The sealer shall meet the requirements of Section 9-04.2(1) of the Standard Specifications.

5.11 Finishing and Cleanup

After all other work on the project is completed and before final acceptance, the entire roadway, including the roadbed, planting, sidewalk areas, shoulders, driveways, alley, and side street approaches, slopes, ditches, utility trenches, and construction areas shall be neatly finished to the lines, grades and cross sections of a new roadway consistent with the original section, and as hereinafter specified.

Slopes, sidewalk areas, planting areas and roadway shall be smoothed and finished to the required cross section and grade by means of a grading machine insofar as it is possible to do so without damaging existing improvements, trees and shrubs. Machine dressing shall be supplemented by hand work to meet requirements outlined herein, to the satisfaction of the director.

All excavated material at the outer lateral limits of the project shall be removed entirely. Trash of all kinds resulting from clearing and grubbing or grading operations shall be removed and not placed in areas adjacent to the project. Where machine operations have broken down brush and trees beyond the lateral limits of the project, the Developer shall remove and dispose of same and restore said disturbed areas at his own expense.
Drainage facilities such as inlets, catch basins, culverts, and open ditches shall be cleaned of all debris which is the result of the Developer operations.

All pavements, whether new or old, shall be thoroughly cleaned. Existing improvements such as Portland cement concrete curbs, curb and gutters, walls, sidewalks, and other facilities which have been sprayed by the asphalt cement shall be cleaned to the satisfaction of the director.

Upon completion of the cleaning and dressing, the project shall appear uniform in all respects. All graded areas shall be true to line and grade. Where the existing surface is below sidewalk and curb, the area shall be filled and dressed out to the walk. Wherever fill material is required in the planting area, the finished grade shall be elevated to allow for final settlement, but nevertheless, the raised surface shall present a uniform appearance.
### APPENDIX 5-1

**STORM DRAINAGE STANDARD DETAILS**

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REMOVABLE WOODEN BOLLARD ............................................................SD-24
PERMANENT WOODEN BOLLARD .......................................................SD-25
NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M 199) & C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE WSDOT/APWA STANDARD SPECIFICATIONS.

2. AS AN ACCEPTABLE ALTERNATIVE TO REBAR, WELDED WIRE FABRIC HAVING A MIN. AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN KNOCKOUTS.

3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000.

4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MIN. ALL PIPE SHALL BE INSTALLED IN FACTORY PROVIDED KNOCKOUTS. UNUSED KNOCKOUTS NEED NOT BE GROUTED IF WALL IS LEFT INTACT.

5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS.

6. ROUND KNOCKOUTS MAY BE ON ALL 4 SIDES, WITH MAX. DIAM. OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE.

7. THE MAX. DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0''.

8. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2'/'FT.

9. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS AND MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR-F-621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.

10. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.

11. FOR CATCH BASINS IN PARKING LOTS REFER TO WSDOT/APWA STANDARD DWG. B-5.60-02.

12. EDGE OF RISER OR BRICK SHALL NOT BE MORE THAN 2' FROM VERTICAL EDGE OF CATCH BASIN WALL.
FRAME AND GRATE
SEE WSDOT
SEC. 7.05 AND
APPLICABLE DWGS.

NOTES:
1. CATCH BASINS SHALL BE CONSTRUCTED
IN ACCORDANCE WITH ASTM C478
(AASHTO M 199) & C880 UNLESS
OTHERWISE SHOWN ON PLANS OR NOTED
IN THE WSDOT/APWA STANDARD
SPECIFICATIONS.

2. AS AN ACCEPTABLE ALTERNATIVE TO
REBAR, WELDED WIRE FABRIC HAVING A
MIN. AREA OF 0.12 SQUARE INCHES PER
FOOT MAY BE USED. WELDED WIRE
FABRIC SHALL COMPLY TO ASTM A497
(AASHTO M 221). WIRE FABRIC SHALL
NOT BE PLACED IN KNOCKOUTS.

3. ALL REINFORCED CAST-IN-PLACE
CONCRETE SHALL BE CLASS 4000.

4. PRECAST BASES SHALL BE FURNISHED
WITH CUTOUTS OR KNOCKOUTS.
KNOCKOUTS SHALL HAVE A WALL
THICKNESS OF 2" MIN. ALL PIPE SHALL
BE INSTALLED IN FACTORY PROVIDED
KNOCKOUTS. UNUSED KNOCKOUTS NEED
NOT BE GROUTED IF WALL IS LEFT
INTACT.

5. KNOCKOUT OR CUTOUT HOLE SIZE IS
EQUAL TO PIPE OUTER DIAM. PLUS
CATCH BASIN WALL THICKNESS.

6. KNOCKOUTS MAY BE ON ALL 4 SIDES
WITH MAX. DIAM. OF 28". KNOCKOUTS
MAY BE EITHER ROUND OR "O" SHAPE.

7. THE TAPER ON THE SIDES OF THE
PRECAST BASE SECTION AND RISER
SECTION SHALL NOT EXCEED 1/2"/FT.

8. CATCH BASIN FRAME AND GRATE SHALL
BE IN ACCORDANCE WITH STANDARD
SPECIFICATIONS AND MEET THE STRENGTH
REQUIREMENTS OF FEDERAL
SPECIFICATION RR-F-620. MATING
SURFACES SHALL BE FINISHED TO
ASSURE NON-ROCKING FIT WITH ANY
COVER POSITION.

9. FRAME AND GRATE MAY BE INSTALLED
WITH FLANGE DOWN OR CAST INTO
RISER.

10. MAX. DEPTH FROM FINISHED GRADE TO
PIPE INVERT SHALL BE 5'-0".

11. EDGE OF REDUCING SECTION OR BRICK
SHALL NOT BE MORE THAN 2" FROM
VERTICAL EDGE OF CATCH BASIN WALL.
NOTES:

1. CATCH BASINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478 (AASHTO M119) AND ASTM C890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.

2. HANDHOLDS IN ADJUSTMENT SECTION SHALL HAVE 3" MIN. CLEARANCE. STEPS IN CATCH BASIN SHALL HAVE 8" MIN. CLEARANCE. HANDHOLDS SHALL BE PLACED IN ALTERNATING GRADE RINGS OR LEVELING BRICK COURSE WITH A MIN. OF ONE HANDHOLD BETWEEN THE LAST STEP AND FINISHED GRADE. ALL STEPS AND HANDHOLDS SHALL BE MADE OF POLYPROPYLENE.

3. ALL REINFORCED CAST-IN-PLACE CONCRETE SHALL BE CLASS 4000. ALL PRECAST CONCRETE SHALL BE CLASS 4000.

4. PRECAST BASES SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MIN. UNUSED KNOCKOUTS NEED NOT BE GRouted IF WALL IS LEFT INTACT. PIPES SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS OTHERWISE APPROVED BY THE ENGINEER.

5. KNOCKOUT OR CUTOUT HOLE SIZE SHALL EQUAL PIPE OUTER DIAM. PLUS CATCH BASIN WALL THICKNESS. MAX. HOLE SIZE SHALL BE 38" FOR 48" CATCH BASIN, 42" FOR 54" C.B., 46" FOR 60" C.B., 60" FOR 72" C.B., 64" FOR 96" C.B. MIN. DISTANCE BETWEEN HOLES SHALL BE 8" FOR 48", 54", AND 60" C.B.; 12" FOR 72" AND 96" C.B.

6. CATCH BASIN FRAMES AND GRATES OR COVERS SHALL BE IN ACCORDANCE WITH SEC. 7.05 OF THE WSDOT STANDARD SPECIFICATIONS. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.

7. ALL BASE REINFORCING STEEL SHALL HAVE A MIN. YIELD STRENGTH OF 60,000 PSI AND BE PLACED IN THE UPPER HALF OF THE BASE WITH 1" MIN. CLEARANCE.

8. MIN. SOIL BARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT.

9. FOR DETAILS SHOWING LADDER, STEPS, HANDRAILS AND TOP SLABS, SEE OTHER STANDARD DETAILS.

10. SEE THE WSDOT STANDARD SPECIFICATIONS SEC. 7–05.3 FOR JOINT REQUIREMENTS.

CITY OF NORTH BEND
CATCH BASIN – TYPE 2
48", 54", 60", 72", & 96"

APPROVED:
MARK RIGOS, P.E. MAY 2018
BY CITY DATE

DWG. NO. SD–3
1. USE WITH FRAME DRILLED AND TAPPED FOR LOCKING BOLTS.
2. USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS STEEL TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG.
3. COVER MATERIAL IS CAST IRON PER ASTM A48 CLASS 30.
4. SHALL CONFORM TO SEC. 7.05 OF THE WSDOT STANDARD SPECIFICATIONS.
5. COVER SHALL HAVE THE WORD "DRAIN" IN 2-INCH RAISED LETTERS.
6. ALL LIDS TO BE LOCKING UNLESS OTHERWISE SPECIFIED IN PLANS.
CITY OF NORTH BEND

NOTES:
1. SLOT FORMED AND RECESSED FOR 5/8"-11 NC X 2" SOCKET HEAD (ALLEN HEAD) BOLT.
2. GRATE SHALL BE DUCTILE IRON.
3. SHALL CONFORM TO SEC. 9-05.15 OF THE WSDOT STANDARD SPECIFICATIONS.
4. USE VANED GRATE IN CURB LINE.
5. USE FRAME SHOWN IN STANDARD DETAIL SD-6.
6. ALL LIDS TO BE LOCKING UNLESS OTHERWISE SPECIFIED IN PLANS.

CITY OF NORTH BEND
PARKING LOT AREA GRATE

APPROVED:       MAY 2018
MARK RIGOS, P.E.       DWG. NO. SD-5
BY CITY
CITY OF NORTH BEND

NOTES:
1. DRILL AND TAP FOR, AND PROVIDE, TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG, WHERE REQUIRED.
2. FRAME MATERIAL IS CAST IRON PER ASTM A48 CLASS 30 OR BETTER.
3. SET FRAME TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.
4. ALL LIDS TO BE LOCKING UNLESS OTHERWISE SPECIFIED IN PLANS.

CITY OF NORTH BEND
STANDARD FRAME INSTALLATION

APPROVED: MARK RIGOS, P.E. MAY 2018 SD-6
BY CITY DATE
NOTES:

1. SELF-LOCK VANED GRATE MANUFACTURER SUBJECT TO APPROVAL BY ENGINEER.

2. USE WITH TWO LOCKING BOLTS 5/8"-11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) BOLTS, 2" LONG. NOTE SLOT DETAIL PROVIDE WHERE REQUIRED.

3. MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80–55–06.

4. "OUTFALL TO STREAM DUMP NO POLLUTANTS" IN RAISED LETTERS SHALL BE LOCATED ON GRATE AS SHOWN, OR ON BORDER AREA.

5. SHALL CONFORM TO SEC. 7.05 OF THE WSDOT STANDARD SPECIFICATIONS.

6. WELDING IS NOT PERMITTED.

7. EDGES SHALL HAVE 0.125" RADIUS, 0.125" CHAMBER OR COMPLETE DEBURRING.

8. USE A BI-DIRECTIONAL VANED GRATE IN SAG VERTICAL CURVES.

9. ALL LIDS TO BE LOCKING UNLESS OTHERWISE SPECIFIED IN PLANS.
CITY OF NORTH BEND

NOTES:
1. SET TO GRADE AND CONSTRUCT ROAD AND GUTTER TO BE FLUSH WITH FRAME.
2. THROUGH CURB INLET TO BE USED IN SAG CURVES.

NOTE:
1. ALL LIDS TO BE LOCKING UNLESS OTHERWISE SPECIFIED IN PLANS.
NOTES:

1. MATERIAL SHALL CONFORM TO SECTION 9-05.15(2) OF THE WSDOT STANDARD SPECIFICATIONS.

2. PATTERN ON TOP SURFACE OF HOOD SHALL BE 3/16" NON–SKID DIAMOND.

3. BOLT, WASHER, AND NUT SHALL BE GALVANIZED OR CORROSION RESISTANT.

4. ALL LIDS TO BE LOCKING UNLESS OTHERWISE SPECIFIED IN PLANS.
NOTES:
1. BOLT-LOCKING CAST IRON RING AND COVER SHALL BE USED IN RIGHT-OF-WAY AND EASEMENTS AND MUST BE RATED HS-20 IF USED IN PAVED AREAS. SEE TABLE FOR SIZES.
2. MID-STATES PLASTIC BOX OR EQUAL MAY BE USED IF C.O. IS OUTSIDE OF RIGHT-OF-WAY OR EASEMENT. SEE TABLE FOR SIZES. THE COVER FOR THE PLASTIC BOX SHALL BE DUCTILE IRON AND READ "SEWER" OR BE BLANK (NO LABEL).
3. CAST IRON COVER SHALL READ "STORM".
4. 14" BOLT-LOCKING CAST IRON COVER SHALL BE EQUAL TO OLYMPIC FOUNDRY PART NUMBER M1060.
5. SPECIAL "DECORATIVE" CASTING MAY BE USED IF PRE-APPROVED BY CITY.
CITY OF NORTH BEND

STORM SEWER STUB

NOTES:

1. UNLESS OTHERWISE INDICATED ON PLAN, SIDE SEWER SHALL BE MINIMUM OF 5 FEET DEEP AT PROPERTY LINE, OR 5 FEET LOWER THAN THE LOWEST ELEVATION, WHICHEVER IS LOWER.

2. PIPE CAN BE REDUCED TO 4" DIAMETER ON PRIVATE PROPERTY.

3. CLEANOUT SHALL BE INSTALLED WITHIN 25 FEET OF WYES.

MARK RIGOS, P.E. 
MAY 2018

SD-11
MAXIMUM DISTANCE BETWEEN SPACERS SHALL BE 6 FEET ON CENTER.

SEAL BOTH ENDS OF CASING WITH A MANUFACTURED RUBBER SEALING DEVICE.

PLACE END SPACER MAXIMUM OF 12” FROM END OF CASING (TYP.)


STEEL PIPE CASING (MILL PIPE) OR DUCTILE IRON.

USE 2 STAINLESS STEEL HOSE CLAMPS TO SECURE RUBBER SEAL (1 ON CARRIER PIPE AND 1 ON CASING PIPE).

<table>
<thead>
<tr>
<th>CARRIER PIPE DIAMETER</th>
<th>4”</th>
<th>6”</th>
<th>8”</th>
<th>10”</th>
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</thead>
<tbody>
<tr>
<td>CASING DIAMETER</td>
<td>10”</td>
<td>12”</td>
<td>14”</td>
<td>16”</td>
<td>20”</td>
</tr>
<tr>
<td>STEEL CASING THICKNESS</td>
<td>0.25”</td>
<td>0.25”</td>
<td>0.25”</td>
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<tr>
<td>SPACER BAND WIDTH</td>
<td>8”</td>
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NOTES:
1. RUNNER HEIGHT SHALL BE SIZED TO PROVIDE:
   A. MIN. 0.75” BETWEEN CARRIER PIPE BELL AND CASING PIPE WALL AT ALL TIMES.
   B. MIN. 1.00” CLEARANCE BETWEEN RUNNERS AND TOP OF CASING WALL TO PREVENT JAMMING DURING INSTALLATION.
2. MINIMUM RUNNER WIDTH SHALL BE 2 INCHES.
3. STEEL CASING DIAMETERS ARE “OUTSIDE DIAMETER” FOR 16” AND LARGER.
4. SPACER BAND WIDTH SHALL BE 12” FOR CARRIER PIPES THAT ARE 36” DIAMETER OR GREATER.
5. FOR STEEL CASING, PROVIDE SHOP—APPLIED ANTI—CORROSIVE COATING ON CASING EXTERIOR CONFORMING TO AWWA 210. MINIMUM COATING 16 MILS DFT (DO NOT EXCEED MANUFACTURER’S MAXIMUM THICKNESS). PRODUCT SHALL BE EQUAL TO TNEMEC HI—BUILD TNEMEC—TAR SERIES 46H—413.
NOTES:

1. MATERIAL: DUCTILE IRON ASTM A536, CL80–55–06.
2. PROVIDE 2–5/8” DIAMETER STAINLESS STEEL ALLEN TYPE BOLTS COUNTER SUNK FLUSH WITH COVER.
3. ALL LIDS TO BE LOCKING UNLESS OTHERWISE SPECIFIED IN PLANS.

NOTES:

2. PROVIDE 2–5/8” DIAMETER STAINLESS STEEL ALLEN TYPE BOLTS COUNTER SUNK FLUSH WITH COVER.
3. ALL LIDS TO BE LOCKING UNLESS OTHERWISE SPECIFIED IN PLANS.
NOTES:

1. FOR PIPES 15-INCHES AND UNDER, TRENCH WIDTH=I.D. + 30-INCHES. FOR PIPES 18-INCHES AND OVER, TRENCH WIDTH=(1.5 x I.D.)+18-INCHES. PER SECTION 2-09.4, "MEASUREMENT", OF THE WSDOT STANDARD SPECIFICATIONS.

2. EXCAVATE UNSTABLE MATERIAL DOWN TO FIRM SOIL AND REPLACE WITH FOUNDATION GRAVEL PER SECTION 9-03.9(1), "BALLAST", OF THE STANDARD SPECIFICATIONS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANCHORING PIPE TO PREVENT FLOTATION DURING CONCRETE PLACEMENT.

4. WHEN THE DESIGN OF TANKS OR PIPES DOES NOT TAKE INTO ACCOUNT BUOYANCY, UNDERDRAINS SHALL BE PROVIDED.

5. PROVIDE CLEANOUTS ON UNDERRAIN PIPE, EVERY 100 FEET, AND AT BENDS OR JUNCTIONS.

6. SEE WSDOT SECTION 9-03.9 FOR ADDITIONAL REQUIREMENTS.

7. 4-INCHES FOR PIPE 18-INCH DIAMETER AND LESS; 6-INCHES FOR PIPE GREATER THAN 18-INCH DIAMETER.

8. COMPACTED CRUSHED SURFACING TOP COURSE CAN ALSO BE USED AS BEDDING GRAVEL.
NOTES:

1. ALL STEEL PARTS MUST BE GALVANIZED & ASPHALT COATED (TREATMENT 1 OR BETTER).

2. CONTRACTOR TO VERIFY DIMENSIONS.

3. REQUIRED ON ALL PIPE ENDS 18" OR GREATER PER KCSWDM 4–12, 2016 VERSION.
3/4" DIAMETER SMOOTH BARS EQUALLY SPACED (4" O.C. MAX.)

LOWER STEEL BAND 3/4"x 4" WIDE FORMED TO FIT IN GROOVE OF CB RISER

PLAN VIEW

UPPER STEEL BAND 3/4"x 4" WIDE

24"
SEE NOTE 1

LOWER STEEL BAND 3/4"x 4" WIDE FORMED TO FIT IN GROOVE OF CB RISER

SECTION A

STANDARD GALVANIZED STEPS OR LADDER

CB TYPE 2

3/4" DIA. SMOOTH ROUND BARS WELDED EQUALLY SPACED. BARS SHALL BE TO UPPER AND LOWER BANDS. BANDS EVENLY SPACED (SEE NOTE 1)

DETAIL HOOK CLAMP

NOTES:

1. DIMENSIONS ARE FOR ILLUSTRATION ON 54 IN. DIAMETER CB. FOR DIFFERENT DIAMETER CB'S, ADJUST TO MAINTAIN 45 DEGREE ANGLE ON "VERTICAL" BARS AND 7 IN. O.C. MAXIMUM SPACING OF BARS AROUND LOWER STEEL BAND.

2. METAL PARTS MUST BE CORROSION RESISTANT, STEEL BARS MUST BE GALVANIZED.

3. THIS DEBRIS BARRIER IS ALSO RECOMMENDED FOR USE ON THE INLET TO ROADWAY CROSS-CULVERTS WITH HEIGHT POTENTIAL FOR DEBRIS COLLECTION.

4. USE OF THIS STRUCTURE WITHIN THE ROAD RIGHT-OF-WAY SHALL MEET THE MINIMUM CLEAR ZONE REQUIREMENTS.

5. SEE THE WSDOT/APWA STANDARD SPECIFICATIONS SECTION 9-05.15 FOR METAL CASTINGS REQUIREMENTS.
NOTE:

1. SIDE SLOPE SHALL BE WARPED TO MATCH THE BEVELED PIPE END. WHEN CULVERT IS ON SKEW, BEVELED END SHALL BE ROTATED TO CONFORM TO SLOPE. IF SLOPE DIFFERS FROM 3:1, PIPE SHALL BE BEVELED TO MATCH SLOPE.

2. REFER TO WSDOT STANDARD PLAN B-70.20.00 FOR ADDITIONAL DETAILS.

3. FOR PIPES UNDER 18" DIAMETER.
NOTES:

1. USE A MINIMUM 54 IN. DIAM. TYPE 2 CATCH BASIN.
2. OUTLET CAPACITY: 100-YEAR DEVELOPED PEAK FLOW.
3. METAL PARTS: CORROSION RESISTANT, NON-GALVANIZED PARTS PREFERRED. GALVANIZED PIPE PARTS TO HAVE ASPHALT TREATMENT 1.
4. FRAME AND LADDER OR STEPS OFFSET 5/8 IN.
5. A. CLEANOUT GATE IS VISIBLE FROM TOP;
   B. CLEANOUT SPACE IS CLEAR OF RISER AND CLEANOUT GATE;
   C. FRAME IS CLEAR OF CURB.
6. IF METAL OUTLET CONNECTS TO CEMENT CONCRETE PIPE, OUTLET PIPE TO HAVE SMOOTH O.D. EQUAL TO CONCRETE PIPE I.D. LESS 1/4 IN.
7. PROVIDE AT LEAST ONE 3 X 0.090 GAUGE SUPPORT BRACKET ANCHORED TO CONCRETE WALL WITH 5/8 IN. STAINLESS STEEL EXPANSION BOLTS OR EMBEDDED SUPPORTS 2 IN. INTO M/H WALL (VERTICAL SPACING).
8. LOCATE ELBOW RESTRICTOR(S) AS NECESSARY TO PROVIDE MIN. CLEARANCE AS SHOWN.
9. LOCATE ADDITIONAL LADDER RUNGS IN STRUCTURES USED AS ACCESS TO TANKS OR VAULTS TO ALLOW ACCESS WHEN CATCH BASIN IS FILLED WITH WATER.

FLOW RESTRICTOR TEE TYPE

CITY OF NORTH BEND

APPROVED: MARK RIGOS, P.E. MAY 2018

BY CITY DATE
SIX EVENLY SPACED HOLES ON 10 3/8" BOLT CIRCLE FOR BOLTING TO FLANGE CONNECTION.

LEVEL LINE

HANDLE WITH LOCK PIN.

ADJUSTABLE LOCK HOOK WITH LOCK SCREW.

1" ROD OR TUBING, VARIABLE LENGTH.

LIFT HANDLE SHALL BE ATTACHED PER MANUFACTURER'S RECOMMENDATIONS.

NOTES:
1. SHEAR GATE SHALL BE ALUMINUM ALLOY PER ASTM B-26-2G-32a OR CAST IRON ASTM A48 CLASS 30B AS REQUIRED.

2. GATE SHALL BE 8 IN. DIAM. UNLESS OTHERWISE SPECIFIED.

3. GATE SHALL BE JOINED TO TEE SECTION BY BOLTING (THROUGH FLANGE), WELDING, OR OTHER SECURE MEANS.

4. LIFT ROD: AS SPECIFIED BY MFR. WITH HANDLE EXTENDING TO WITHIN ONE FOOT OF COVER AND ADJUSTABLE HOOK LOCK FASTENED TO FRAME OR UPPER HANDHOLD.

5. GATE SHALL NOT OPEN BEYOND THE CLEAR OPENING BY LIMITED HINGE MOVEMENT, STOP TAB, OR SOME OTHER DEVICE.

6. NEOPRENE RUBBER GASKET REQUIRED BETWEEN RISER MOUNTING FLANGE AND GATE FLANGE.

7. MATING SURFACES OF LID AND BODY TO BE MACHINED FOR PROPER FIT.

8. FLANGE MOUNTING BOLTS SHALL BE 3/8 IN. DIAM. STAINLESS STEEL.

9. ALTERNATE CLEANOUT/SHEAR GATES TO THE DESIGN SHOWN ARE ACCEPTABLE, PROVIDED THEY MEET THE MATERIAL SPECIFICATIONS ABOVE AND HAVE A SIX BOLT, 10 3/8 IN. BOLT CIRCLE FOR BOLTING TO THE FLANGE CONNECTION.

10. SEE THE WSDOT/APWA STANDARD SPECIFICATIONS SECTION 9-05.15 FOR METAL CASTINGS REQUIREMENTS.
NOTES:

1. USE WITH THREE LOCKING BOLTS 5/8 IN.—11 NC STAINLESS TYPE 304 STEEL SOCKET HEAD (ALLEN HEAD) CAP SCREWS 2 IN. LONG. DRILL HOLES SPACED 120° AT 11 1/16 IN. RADIUS.

2. MATERIAL IS DUCTILE IRON ASTM A536 GRADE 80—55—06.

3. SEE SEC. 7.05.

4. DRILL THREE 1 IN. HOLES SPACED AT 120° AND 9 1/2 IN. RADIUS.

5. SEE THE WSDOT/APWA STANDARD SPECIFICATIONS SECTION 9—05.15 FOR METAL CASTINGS REQUIREMENTS.

6. ALL LIDS TO BE LOCKING UNLESS APPROVED OTHERWISE.
BOLT-DOWN DETAIL

NOTES:
1. MATERIAL IS CAST IRON ASTM A48 CLASS 30.
2. DRILL AND TAP THREE 5/8 IN.-11 NC HOLES THROUGH FRAME AT 120° AND 11 1/16 IN. RADIUS.
3. SEE SEC. 7.05.
4. SEE THE WSDOT/APWA STANDARD SPECIFICATIONS SECTION 9-05.15 FOR METAL CASTINGS REQUIREMENTS.
CAST IRON GRATE, EAST JORDAN IRON WORKS OR EQUAL

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<td>18&quot;</td>
<td>23&quot;</td>
<td>3.75&quot;</td>
<td>6018M</td>
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</table>

NOTES:
1. GRATE SHOWN IS FLAT. BEEHIVE GRATE IS OPTIONAL.
2. PLACE CEMENT CONCRETE IN BOTTOM TO FORM FLOOR, IF DESIRED.
3. AREA DRAIN BODY IS MODIFIED CAST CONCRETE BELL/SPIGOT PIPE.
4. 18" CPEP, BASE WITH AN OLYMPIC FOUNDRY LID (PART NO. 10-1800) CAN BE USED AS AN ALTERNATIVE, WITH CITY OF NORTH BEND APPROVAL.

CITY OF NORTH BEND
TYPE 45 AREA DRAIN

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE SD-22
NOTES:
1. SEE DETAIL SD–23B FOR BASE DETAILS.
2. PLANS TO SPECIFY TYPE AND STYLE USED.

PAINT ASSEMBLY WITH A "HIGHLY VISIBLE" COLOR. (SAFETY YELLOW IS ACCEPTABLE)
DIRECTION OF PEDESTRIAN/BICYCLE TRAFFIC

ROUND FOOTING

1/8" x 1 7/8" SQUARE PLATE

1/4" CHAIN ~ GRADE 3, 6" LONG

POST SLEEVE

BASE PLATE

CAP AND HINGE

1 1/4" x 2", FULL SURFACE, HEAVY DUTY, WELD-ON HINGE

1/8" x 4 1/2" DIAM. STEEL PLATE

CAP AND HINGE

STEEL PIPE ~ ASTM A 53, NPS 4 (4" NOM.), SCHEDULE 40 ~ WELD TO TOP PLATE

POST SLEEVE

COVER PLATE

TOP PLATE

1/8" x 1 7/8" SQUARE PLATE

ALL 4 1/8" THICK - 3 3/4" SIDES

1 1/8" PLATE - 3 13/16" DIAM.

1 1/8" PLATE - 4 3/4" DIAM.

3/4" DIAM. DRAIN HOLE

1/2" CHAMFER (TYP.)

5"

1/8" PLATE

TOP PLATE

COVER PLATE

NOTES:
1. SEE DETAIL SD-23A FOR POST DETAILS.
2. PLANS TO SPECIFY TYPE AND STYLE USED.

PAINT ASSEMBLY WITH A "HIGHLY VISIBLE" COLOR. (SAFETY YELLOW IS ACCEPTABLE)

CITY OF NORTH BEND

STEEL BOLLARD DETAILS

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE

DWG. NO. SD-23B
NOTES:

1. TIMBER SHALL BE DOUGLAS FIR, DENSE CONSTRUCTION GRADE, AND SHALL BE TREATED PER WSDOT 9-09.3.
2. STEEL TUBE SHALL CONFORM TO ASTM 453 OR ASTM A53 GRADE A.
3. NUTS, BOLTS & WASHERS SHALL CONFORM TO WSDOT STANDARD.
4. ALL STEEL PARTS SHALL BE GALVANIZED.
5. PLANS TO SPECIFY TYPE AND STYLE USED.
NOTES:

1. TIMBER SHALL BE DOUGLAS FIR, DENSE CONSTRUCTION GRADE, AND SHALL BE TREATED PER WSDOT 9–09.3.

2. PLANS TO SPECIFY TYPE AND STYLE USED.
SECTION 6
WATER

Planning, Designing, and Constructing

Water Systems for the Production, Transmission, and Distribution of Clean Water...
SECTION 6 WATER

6.01 General Requirements

A. General

These Engineering Standards set forth minimum standards for the planning, design, and construction of water facilities.

These standards do not include design of special facilities, such as Pump Stations or Reservoirs. These special facilities require unique design requirements and will be subject to individual review by the City.

Although these standards are intended to apply to physical development within the City’s retail service area (both within city limits and in unincorporated King County), the Standards will not apply for all situations. Compliance with these Standards does not relieve the designer of the responsibility to apply conservative and sound professional judgment. These are minimum standards and are intended to assist, but not substitute for competent work by design professionals. The City may at its sole discretion due to special conditions and/or environmental constraints, require more stringent requirements than would normally be required under these Standards.

B. References

Wherever references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user, the following acronyms or abbreviations which may appear shall have the meanings indicated herein:

- AASHTO American Association of State Highway and Transportation Officials
- ANSI American National Standards Institute, Inc.
- WSDOT Washington State Department of Transportation
- APWA American Public Works Association
- ASTM American Society for Testing and Materials
- AWWA American Water Works Association
- DOE Washington State Department of Ecology
- DOH Washington State Department of Health
- UPC Uniform Plumbing Code
- WAC Washington Administrative Code

C. Governmental Agency Requirements

All construction on City, County or State roads or right-of-way shall be done in accordance with the agency’s standards and requirements and in accordance with the franchise and/or permit requirements. The Contractor is responsible to determine these requirements prior to construction.

Where conflict exists between these Standards and permit requirements, the more stringent requirements as determined by the City shall take precedence.

Metal lids, hatches, and manhole covers located in sidewalks, crosswalks, or other pedestrian
areas must comply with ADA requirements and have a slip resistant surface.

D. The Reduction of Lead in Drinking Water Act

New USEPA Regulations Regarding Lead-Free Water System Materials

Effective January 4, 2014

The Reduction of Lead in Drinking Water Act was enacted on January 4, 2011, to amend Section 1417 of the Safe Drinking Water Act, which covers the use and introduction into commerce of lead pipes, plumbing fittings or fixtures, solder and flux. The Reduction of Lead in Drinking Water Act changes the Safe Drinking Water Act definition of “lead free.” All water system materials installed under these Standards shall comply with the revised Act. The Contractor shall provide Manufacturer’s Certificate of Compliance in accordance with the current edition of the Washington State Standard Specifications for all water system materials to be used. The Certificate must clearly state that the materials furnished comply with “lead-free” requirements of the revised Safe Drinking Water Act.

6.02 Plan Submittal

A. General

A submittal checklist is included in the appendices of these standards. Following the standards in accordance with the submittal checklist will help ensure a timely review of the proposed project and keep review costs to a minimum.

B. Water General Plan Notes

A listing of General Notes that must be incorporated on the first water plan sheet is contained in the Appendix. All the notes on the list may not pertain to every project. The Developer should include only those notes that are relevant to the project and may omit non-relevant notes. However, do not renumber the remaining General Notes. If additional notes are needed for specific aspects, they should be added after the General Notes.

C. As-Built Documentation

For all water projects the Developer or City Department responsible for the project shall provide as-built plans at completion of the project, in accordance with Section 3.20.

6.03 Water Planning and Design Standards

A. Planning Criteria

(1) Serve to Extreme of Property: Ensure adjacent properties can be provided water service (extend to extreme of property with adequate capacity and pressure).

(2) Demand Projections

Demand projections shall be taken from City of North Bend Water System Plan.
(3) System Parameters

(a) Water velocity in mains - velocities shall not exceed 8 feet per second during highest demand and fire flow.

(b) Distribution System Pressures (Measured at Building Elevation):

<table>
<thead>
<tr>
<th></th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desirable</td>
<td>60 psi</td>
<td>80 psi</td>
</tr>
<tr>
<td>Allowable</td>
<td>50 psi</td>
<td>100 psi</td>
</tr>
</tbody>
</table>

Minimum 30 psi is allowed for existing systems.

Individual pressure reducing valves are required on all services when water pressure exceeds 80 psi.

(c) Reservoir Replenishment - Facilities (i.e., transmission mains, pump stations) shall be sized to enable storage facilities to be refilled within 72 hours after an emergency or major fire.

(4) Fire Flow Requirements

Fire flow requirements shall be as determined by City of North Bend Fire Marshal.

(a) The City will determine available fire flow using its computer model.

(b) The distribution system shall maintain a minimum pressure of 20 psi throughout the system, under maximum day demand (MDD) during fire flow conditions.

B. General Design Standards

(1) Each fitting/valve shall have attachment type listed (e.g. FL, MJ, FL x MJ, etc.).

(2) List pipe length (from center-of-fitting to center-of-fitting), size, and material along side of each pipe, e.g., 150 LF – 8-INCH D.I. Pipe material can be listed in a general note in lieu of listing along each pipe run.

(3) Indicate type of pavement restoration required by right-of-way authority having jurisdiction (if working in existing streets).

(4) Dimension existing and new main locations from right-of-way line and/or property line, or label stations and offsets.

(5) Blocking: Reference Standard Details

(a) At vertical bends, pipe shall be restrained a minimum of 36 feet (two joints) from each side of bend. Reduced-size concrete blocks shall be installed at bends per Standard Detail W-2. No change in pipe direction or diameter shall occur within 36 feet of the vertical bend. In addition, bends, tees, reducers, etc., beyond the
36-foot limit, shall be restrained with standard blocking per Standard Detail W-1 and W-3. Where these criteria cannot be met, plans should call for vertical blocking without joint restraint per Standard Detail W-3, or a restraint method should be designed and detailed on the plan.

(b) Check if special blocking or joint restraint designs are necessary (e.g., poor soil, conflicting utility, etc.).

(c) Show all blocking on any detail drawing that shows vertical bends.

(d) See Appendix 6-2 – Approved Materials List for joint restraint methods, other than concrete blocking.

(6) Check if system may require additional looping (i.e., eliminate dead end lines).

(7) To assure compatibility with existing system, check with Public Works Department to determine hydraulic gradients.

(8) Drawings shall reference distance to nearest existing valve and/or hydrant from new point of connection to existing water main.

(9) Check with local jurisdiction for necessary permitting requirements.

(10) Provide temporary 2-inch blow off assemblies for testing and disinfection of new water mains (where hydrants are not available). Place blowoff at high end of line, where possible.

(11) Cap end of existing water lines to be abandoned as follows:

(a) Asbestos cement lines: use end cap coupling.

(b) Cast or ductile iron lines: use MJ cap or plug.

(12) Minimum water main size

(a) 8 inch minimum when serving fire hydrants.

(b) 6 inch minimum may be used in localized conditions where fire hydrants are served by looped lines, subject to approval.

(c) 4 inch minimum shall be used to serve water to end of cul-de-sac when no future extension is required.

(13) Pressure reducing station plans shall show location of pressure relief discharge pipe and discharge point of floor drain piping (drain to daylight). Pressure relief discharge pipe shall be shown at a location that will not be subject to damage or erosion during discharge of water.
(14) All water vaults (water service, backflow assembly, pressure reducing station, etc.) shall include designs for floor drain piping draining to daylight, or if daylight is not feasible, to the storm system. Discharge point of vault floor drains shall be shown on the plan. Where vault floor drain cannot drain to daylight or the storm system, consult with the City during project design review to determine the best alternative.

Exception: Outside-installed Reduced Pressure Backflow Assemblies (RPBA) shall be installed in above-ground enclosures. The following drain requirements shall apply to enclosures. RPBA shall not be installed in vaults. Each enclosure design shall be as approved by the City. Floor drains for RPBA shall not connect to closed storm drain systems. All RPBA enclosures shall be provided with a bore sighted daylight drain. This bore sighted drain to daylight shall be clearly visible end to end, sized to meet the flow requirements of the RPBA relief vent.

(15) Placement of surface appurtenances (manhole lids, water valve lids, etc.) in tire track of traffic lanes shall be avoided whenever possible. Meter vaults shall be located outside the sidewalk whenever possible.

(16) Service connections or water utility distribution system piping shall not be used for grounding of electrical systems or for the maintenance, integrity or continuity of any grounding attachment or connection.

(17) Manufacturer’s certification of testing and accuracy shall be provided for all commercial meter installations.

C. Valving

(1) 600 foot maximum distance between valves on distribution mains, except, in the Central Business District (CBD), maximum valve spacing shall be 200 feet.

(2) Provide a valve at each end of an easement.

(3) At water main intersections, valves shall be placed on four out of four legs at each cross, and three out of three legs at each tee (unless tapping an existing water main).

(4) For all fire service connections greater than 3 inches in diameter, isolation valves shall be installed on all three legs of the tee. Tapping tees are not allowed for fire service connections greater than 2 inches in diameter.

(5) For all domestic water service connections greater than 2 inches in diameter, isolation valves shall be installed on all legs of the tee. Tapping tees are not to be used for domestic service connections greater than 2 inches in diameter.

(6) Additional valving may be required for area isolation.

(7) Air/vacuum relief valves shall be installed at local high points in water main.
D. Fire Hydrants

The following information is provided as a guideline to be used during design. The final number of hydrants and their location shall be approved by the City Fire Marshal. All fire hydrants shall be pressure tested prior to issuance of building permits.

(1) Guard posts are to be used only in parking lots when no curbs are present or in exposed areas in parking lots.

(2) Fire line/hydrant run over 50 feet in length must be 8 inches (terminate with tee, plug and hydrant assembly).

(3) Fire hydrant location:

(a) Single-family residential: Spacing = 500 feet apart. Coverage = 250 feet from front property line of the main body of a lot.

(b) Multi-family/commercial: As determined by the Fire Marshall.

(c) Exception: On arterial streets without residential access (through traffic only), maximum hydrant spacing shall be 1,000 feet.

(d) On dead-end streets, reduce single-family residential spacing shall be 400 feet.

(4) 3-feet minimum clearance shall be provided around outside of hydrant for operation. Provide 5-feet horizontal clearance from the outside of the hydrant to concrete walls, structures, utility poles and above-ground electrical enclosures.

(5) Where feasible, fire hydrants shall be installed on the same side of the street as the water main.

(6) Private Fire Hydrants and Fire Protection Waterline:

(a) When a fire hydrant is to be installed on commercial, multi-family and institutional property, outside of the right-of-way or designated public water utility easements, and the fire hydrant is intended to provide fire protection for only that property, the fire hydrant and the waterline serving the fire hydrant shall be privately owned and maintained by the benefitting property owner. Such water line and fire hydrant are considered to part of the benefitting property’s fire protection system and shall be designated on the approved construction drawings and the City’s as-built drawings as “PRIVATE” or “PVT.”

(b) The private water line that serves the private fire hydrant and/or the fire sprinkler system shall be owned by the benefitting property owner beginning immediately downstream of the valve where the private water line connects to the public water main. Connection shall include, at a minimum, a Double Check Valve Assembly (DCVA).

(c) The private fire hydrant and private water line (fire protection system) shall be designed and constructed in accordance with the fire hydrant and water main standards herein. No domestic, irrigation, or industrial water services shall be
connected to the fire protection system.

(d) The benefitting property owner shall have the responsibility for all maintenance, repair, annual testing and flushing of the fire protection system in accordance with the fire system maintenance standards set forth by the Fire Marshall. At the time of permit issuance, the property owner/applicant shall execute an agreement acknowledging that the property owner/applicant shall be responsible for the proper maintenance and repair of the fire protection system.

(e) If the fire protection system is contributing to a water quality issue, the property owner/applicant may be required to conduct more frequent flushing of the fire protection system or install a backflow assembly, at the discretion of the City.

E. Pipe Class, Protection, and Cover

(1) Pipe shall be ductile iron, class 52.

(2) Ductile iron pipe shall be encased in a steel or ductile iron casing when crossing under improvements where the ability to remove and replace pipe without disturbance to the improvement is needed. Casings are required when:

(a) Crossing under rockeries over 4-feet high.

(b) Crossing under retaining wall footings over 4-feet wide.

(c) Crossing under reinforced earth retaining walls (both wall and reinforcing material).

Casings shall extend a minimum of 5 feet past each edge of the improvement, or a distance equal to the depth of pipe whichever is greater. The carrier pipe shall be supported by casing spacers, where casing length exceeds 10 feet.

Minimum clearance between bottom of rockery and top of pipe or casing shall be 2 feet. The trench shall be backfilled with crushed rock.

(3) Water main depth of cover:

(a) 3 feet minimum from final grade (see exception in 6.03 E.(4)(d) below).

(b) 6 feet maximum from final grade.

(4) Building setback requirements:

(a) 5 feet minimum from covered parking to water main.

(b) 10 feet minimum from building (and retaining walls) to water main.

(c) 20 feet minimum easement shall be provided between buildings.

(d) When passing between buildings which are 25 feet apart or less, ductile iron pipe shall be installed with 2 feet of pipe cover (5 feet beyond the limits of each
(5) All pipe, fittings and hardware immersed inside water reservoirs shall be stainless steel.

F. Clearances/Other Utilities

(1) All clearances listed below are from edge-to-edge of each pipe.

(2) Water services and sewer stubs shall have at least 5-foot horizontal separation.

(3) Check for crossing or parallel utilities. Maintain minimum vertical and horizontal clearances. Avoid crossing at highly acute angles (smallest angle measure between utilities should be between 45 and 90 degrees).

(4) At points where thrust blocking is required, minimum clearance between the concrete blocking and other buried utilities or structures shall be 5’.

(5) Horizontal clearances from water main:

- Cable TV 5 feet
- Gas 5 feet
- Power 5 feet
- Storm 5 feet
- Sanitary 10 feet
- Telephone, Fiber Optics 5 feet

(6) Vertical clearances from water main:

- Cable TV 1 foot
- Gas 1 foot
- Power 1 foot
- Storm 1 foot
- Sanitary 2 feet
- Telephone, Fiber Optics 1 foot

(7) Where water main crosses above or below sanitary sewer, one full length of water pipe shall be used with the pipes centered for maximum joint separation. Washington Department of Ecology criteria will also apply.

(8) Send letter and preliminary plan to existing utilities to inform them of new construction. Request as-built information and incorporate into plans. At minimum the following utilities should be contacted:

- Cable Television
- Natural Gas
- Power
- Sanitary Sewer
- Storm Drainage
- Telephone, Fiber Optics
(9) Draft plans shall be sent to the above listed utilities to allow coordination of projects.

G. Slopes

(1) Vertical bends shall be used when joint deflection would exceed one-half of pipe manufacturer’s recommended maximum deflection.

(2) Pipe joints shall be restrained where slopes are 20 percent or greater. Joint restraint on slopes shall be “megalug” restrainer for mechanical joint fittings and tie rod/retainer clamp assemblies for DI push-on joints, or other methods from approved materials list.

(3) Where pipe are proposed on hills or steep slopes, the Director shall determine if the pipe location and configuration will be allowed. If allowed, the Developer’s engineer shall propose design details reasonably acceptable to the Director for permanently securing and anchoring the pipe.

H. Connections to Existing System

(1) When authorized by the City, water mains shall be tapped using stainless steel, full-bodied cast iron Mueller-type tapping tee, or ductile iron mechanical joint tapping tees with outlet flange.

(2) Connections to existing mains 8 inches and larger shall be via a wet tap unless otherwise approved by the City. If a wet tap is authorized, it shall be a minimum of one pipe size smaller than the existing main.

(3) Size-on-size tapping tees are not allowed, unless a shell cutter, one size smaller than the existing main, is used.

(4) Connections to existing mains smaller than 8-inch diameter shall be made by cutting in a tee, unless otherwise approved by the City.

(5) Where cut-in connection is made for all commercial, multi-family, institutional and school connections, always install two in-line gate valves.

(6) In the Central Business District (CBD), 3-inch, 4-inch and 6-inch domestic service and fire sprinkler lines shall connect to the existing water main with 8-inch pipe and 8-inch gate valve sizes. Extend 8-inch pipe from water main to vault before reducing to service/fire line size. No tapping tees or sleeves are allowed.

(7) Any property owner who plans to demolish or remove any structure connected to the public water system shall notify the City and complete a Utility Abandonment form prior to the commencement of such work. The City will determine whether the water service can be reused (if sufficiently sized for the new use). If the City determines that the water service cannot be reused, the property owner must pay for abandonment or upgrade of the water service through a water service application or through a water system extension agreement for new site improvements.

(8) Do not connect water system to private sewer pump stations.
I. Easements

(1) Show easements on plans and identify width.

(2) Show easements on all private property. If easement is defined as a constant width on each side of water main, then show a segment of the easement and label as “Typical” (typ).

(3) All easements shall be a minimum of 15 feet in width, unless otherwise approved or required by the City.

(4) A 20-foot minimum easement shall be provided between buildings.

(5) Also see Section 6.03 E(4). “Building Setback Requirements.”

(6) Easement Documentation Requirements:

(a) All easements shall be shown on the project plans and identified as “private” or “public”, together with the width dimension and utility use, (e.g., 20-foot Public Water Easement).

(b) All documents for public easements shall conform to these Standards, will be provided on the City’s easement template and shall comply with King County Recorder’s Office formatting requirements. Include the King County tax parcel number(s), site address, owner names and site legal description. All pages must be numbered.

(c) Easements shall be dedicated to and approved by the City prior to acceptance of a public water system. The Grantee shall be the “City of North Bend, a Washington municipal corporation, its heirs, successors and assigns”. The City may require indemnification agreements to hold the City harmless where maintenance access across private property is deemed necessary.

(d) The description contained within the easement document shall be prepared and stamped by a land surveyor licensed in the State of Washington. The description shall be identified as an Exhibit, together with the title of the utility use, (e.g., Permanent Public Water Utility Easement). The description shall be clearly written and referenced to the underlying property. The description shall be accompanied by an additional graphic Exhibit which depicts a scaled drawing of the easement location relative to the subject parcel.

(e) Off-site easements shall be delivered to the City prior to issuing a Notification to Proceed with construction. Submittal of on-site easements may be delayed until completion of construction requirements.

(f) Bill of Sale for all utility facilities appurtenant to public easements or tracts shall be given to the City.
J. Services

1. Minimum allowable service size shall be 1" x 1". Check that minimum pressure can be maintained when service is flowing at anticipated maximum levels. If friction losses will cause pressure at building to drop below minimum, increase service line size as necessary to raise pressure.

2. Show location of water services on plan and indicate size. Sizes shall be determined by the Developer per the Uniform Plumbing Code. **Minimum service size for all commercial and multi-family customers is 1" x 1".**

3. Fire and irrigation lines shall be by separate water main connection and service. Single family domestic services are not required to have separate water main connections.

4. Static service pressures at ground floor elevation shall be determined at all lots/buildings to ensure compliance with system pressure standards.

5. Plan shall identify lots/buildings where builder/owner should install individual pressure reducing valves. PRVs are required on customer side of service lines (after water meter box) when service pressures exceed 80 psi.

6. 3-inch through 8-inch service installations shall include full-size bypass per Standard Details.

7. For commercial and multi-family customers, domestic services, 1-1/2 inch and larger, that connect to an existing water main with a cut-in tee, shall include a gate valve on each leg of the tee. If the building is served by a second full-size service, that can remain in service while the water main supplying the other service is shut down, only one mainline and one branch-line valve will be required with the cut-in tee connection.

8. All new mixed-use buildings shall have separate meters for the multi-family portion and the commercial portion of the building.

9. If a customer needs a larger size service, the customer is responsible for up size, up-size charges, and abandonment of existing connection.

K. Backflow Prevention

Per 13.16 NBMC, irrigation systems, fire sprinkler systems, and other water uses which may or will cause the contamination of the potable water supply by backflow, shall be required to install approved backflow prevention assemblies, and/or otherwise meet the requirements of the WAC 246-290-490 “Cross Connection Control Regulation in Washington State,” and the recommendations of the PNWS-AWWA Cross Connection Control Manual, latest edition. Requirements may include premise isolation, point of use protection, or a combination. All backflow prevention assemblies installed shall be on the Washington State DOH list of approved backflow prevention assemblies, most recent edition at the time of installation, and shall be installed as approved by Washington State Dept. of Health and as shown in the Standard Details.

Reduced Pressure Principle Backflow Assembly (RPBA) installations that differ from the Standard Details W-46, W-47, and W-48 must be approved by the Director, and will be reviewed on a case-by-case basis to ensure current minimum requirements for installation and freeze point.
protection are met.

Satisfactory testing shall be completed upon installation, repair, or relocation of all backflow assemblies, and annually thereafter. A completed test report must be submitted to the City or plumbing inspector of record prior to final acceptance.

Fire sprinkler system connections to the City’s water system shall be owned and maintained by the property owner, beginning immediately downstream of the gate valve where the system connects to the City’s water main.

The backflow prevention assembly on fire system connections shall be located as close to the serving water main as possible, no more than 50 feet from the water main without prior City approval, either on the owner’s property or an easement dedicated to the owner’s property. A Double Check Detector Assembly is required on all fire lines, other than privately owned fire hydrants, that are 3 inches and larger (applies to both interior and exterior assemblies).

Interior backflow prevention, when permitted, must meet the Uniform Plumbing Code requirements as administered by the Building Division. Such backflow prevention must also meet the requirements of the Public Works Department.

Multi-family projects that have eight or more units and that require a double check valve assembly are strongly recommended to provide a bypass with equal backflow prevention to avoid loss of service during maintenance and repair.

Premise isolation at the water meter by an approved air gap or a reduced pressure backflow assembly (RPBA) is required for all sites utilizing an auxiliary supply (i.e., on-site well, pond, etc.) regardless of whether there is a cross connection between the auxiliary and public water system.

All multiple use buildings are required to have a reduced pressure backflow assembly (RPBA) for premise isolation.

6.04 Water Materials

A. General

All materials shall be new and undamaged. The same manufacturer of each item shall be used throughout the work.

Where reference is made to other specifications, it shall be the latest revision at the time of construction, except as noted on the plans or herein.

All materials not specifically referenced shall comply with applicable sections of ANSI, ASTM, AWWA or the APWA/WSDOT Standard Specifications.

Approved manufacturers and model numbers of various materials are listed in Appendix 6-2 of these Engineering Standards. When specific manufacturers or models are listed, no substitutions will be allowed without prior approval by the City.
B. Water Pipe

Water pipe shall be ductile iron pipe, minimum thickness Class 52, cement-lined unless otherwise specified and shall conform to ANSI/AWWA C151/A21.51 or as shown on plans.

Rubber gasket pipe joints to be push-on-joint (Tyton) or mechanical joint (M.J.) in accordance with ANSI/AWWA C111/A21.11, unless otherwise specified.

Flanged joints shall conform to ANSI B16.1, class 125 drilling pattern, rated for 250 psi working pressure.

Standard thickness cement lining shall be in accordance with ANSI/AWWA C104/A21.4.

The Contractor shall furnish certification from the manufacturer of the pipe and gasket being supplied that the inspection and all of the specified tests have been made and the results thereof comply with the requirements of the above referenced standards.

C. Polyethylene Encasement

Polyethylene encasement shall be eight mil tube or sheet and shall be furnished with all ductile iron pipe when corrosive soil conditions are present. Materials shall comply with ANSI/AWWA C105/A21.5.

D. Fittings

All water main fittings shall be ductile iron, short body, cement lined, and for pressure rating of 350 psi for mechanical joint fittings and 250 psi for flange joint fittings, unless otherwise noted. Metal thickness and manufacturing process shall conform to applicable portions of ANSI/AWWA C110/A21.10. Mechanical joint, ductile iron, compact fittings 24 inches and less shall be in accordance with ANSI/AWWA C153/A21.53. Flanged fittings, cast or ductile iron, shall conform to ANSI B16.1, class 125 drilling pattern.

Standard cement lining shall be in accordance with ANSI/AWWA C104/A21.4.

Rubber gaskets for push-on-joints (Tyton) or mechanical joint (M.J.) shall be in accordance with ANSI/AWWA C111/A21.11.

Gasket material for flanges shall be neoprene, Buna N, chlorinated butyl, or cloth-inserted rubber.

Type of connections shall be specified as push-on joint (Tyton), mechanical joint (M.J.), plain end (P.E.), flanged (FL), and threaded.

E. Galvanized Iron Pipe

Where galvanized iron pipe is specified, the pipe shall be standard weight, Schedule 40, steel pipe per Standard Specification for black and hot-dipped, zinc-coated (galvanized) welded and seamless steel pipe for ordinary uses (ASTM A-120). Fittings shall be screwed malleable iron galvanized per ANSI B16.3. Galvanized pipe shall be used only for dry pipe in pressure relief vacuum breaker assemblies.
F. Couplings

Flexible coupling and transition coupling cast components shall be ductile iron. Center rings and end rings shall be ductile iron in accordance with ASTM 536-80, Grade 65-45-12.

Gasket material shall be virgin SBR in accordance with ASTM D2000 MBA 710.

Bolts shall be high strength, low alloy steel trackhead bolts with national course rolled thread and heavy hex nuts. Steel shall meet ANSI/AWWA C111/A21.11 composition specifications.

G. Adapters

All flange by mechanical joint (FL x MJ) adapters shall be ductile iron.

H. Bolts in Piping

Bolts shall be malleable iron, Cor-ten, or stainless steel.

Bolts and nuts for flanged pipe and fittings shall conform in size and length with ANSI/AWWA C115/A21.15. T-bolts shall be malleable iron or Cor-ten in accordance with ANSI/AWWA C111/A21.11. Stainless steel bolts shall meet the requirements of ASTM A-307, Grade A. Shackle rods shall be stainless steel all thread 316SS.

Stainless steel nuts, bolts and washers shall be type 316SS.

I. Flange Gaskets

Gasket Material shall be neoprene, Buna N, chlorinated butyl, or cloth inserted rubber.

J. Gate Valve

The minimum requirements for all gate valves shall, in design, material and workmanship, conform to the following Standards:

- 2" to 12" Cast Iron: AWWA C-509
- 4" to 12" Ductile Iron: AWWA C-515
- 14" to 24" Ductile Iron: AWWA C-515
- 30" to 36" Ductile Iron: AWWA C-515
- 42" to 48" Ductile Iron: AWWA C-515

Buried gate valves shall be iron body, bronze mounted, resilient seat, and non-rising stem, suitable for installation with the type and class of pipe being installed. Ends to be as specified. Operating stems shall be equipped with standard 2-inch operation nut, and O-ring stem seals. Valves not buried shall be as specified.

K. Valve Box

Valve Box shall be cast iron, two-piece, 8-inch or 18-inch slip type top section with flange located within 3 inches of top, with 24-inch bottom section (and extension, if required), equal to RICH - Seattle Type. Valve box lid shall be cast iron, 3-inches deep, with recessed lifting handle,
and the word “WATER” or “WW” cast into it.

Valve box paving risers shall be cast iron suitable for H-20 traffic loading. The riser shall have four lugs or a flange around the perimeter, and be sized to fit into a RICH - Seattle Type valve box top.

Valve box adjusting sleeves (for use in unimproved areas) shall be cast iron, 12” long.

All castings shall be coated with asphaltic varnish.

L. Valve Operating Nut Extension

Use where valves are installed more than 3 feet below finished grade. Extensions are to be a minimum of 1 foot with only one extension per valve. See Standard Detail.

M. Butterfly Valve

Butterfly valves shall conform to ANSI/AWWA C504, Class 150B. Valves in chambers shall have a manual handwheel operation. Buried valves shall have a stem extension with AWWA 2-inch operating nut and suitable valve box. Butterfly valves will be required for all lines 12 inches or larger.

N. Check Valve

Check valves shall be for 150 psi working pressure, unless otherwise specified. Valve shall have adjustable tension lever and spring to provide non-slamming action under all conditions unless otherwise specified.

O. Air and Vacuum Release Valve

Combination Air Valves shall be of the single housing style that combines the operating features of both an Air/Vacuum and Air Release Valve.

The Air/Vacuum portion shall automatically exhaust air during the filling of the pipeline and automatically allow air to re-enter the pipeline when the internal pressure of the pipeline approaches a negative value due to column separation, draining of the pipeline, power outage, pipeline break, etc.

The Air Release portion shall automatically release small pockets of air from the pipeline while the pipeline is in operation and under pressure, and during filling of the pipeline.

The Combination Air Valve shall have minimum 1-inch NPT inlet and outlet connections and be able to withstand a working pressure of 300 psi.

The valve body and cover shall be cast iron with stainless steel float.

P. Pressure Reducing Station

Unless otherwise shown on the construction plans, a standard pressure reducing station shall have a 6-inch pressure reducing valve with flanged ends and a bypass with a 2-inch pressure reducing valve with threaded ends. Pressure reducing valves shall have opening/closing speed controls,
epoxy coated body, and valve position indicator. Pressure reducing valves and pressure relief valves shall be equipped with stainless steel trim (seat, stem, and cover bearing). Pilot controls shall be on the side of the pressure reducing valve facing vault interior. Each pressure reducing valve shall include two 3/8-inch test cocks located on the opposite side of valve body from the pilot controls (one at inlet and one at outlet end of valve).

Strainers shall be installed on the inlet side of each pressure reducing valve with bronze ball valve sized to correspond with the strainer blowoff outlet size. A 2-inch pressure relief valve with threaded ends shall be installed on the discharge side of the 2-inch pressure reducing valve line and vented to atmosphere as shown on the plans.

The pressure reducing valve shall maintain a constant downstream pressure regardless of varying inlet pressure. The valve shall be a hydraulically operated diaphragm-actuated, globe valve. The pilot control shall be a direct-acting, adjustable, spring loaded, normally open, diaphragm valve, designed to permit flow when controlled pressure is less than the spring setting. The control system shall include a fixed orifice.

The pressure relief valve shall maintain constant upstream pressure by by-passing or relieving excess pressure, and shall maintain close pressure limits without causing surges. The main valve shall be hydraulically operated, diaphragm-actuated, globe valve. The pilot control shall be a direct acting, adjustable, spring loaded, diaphragm valve, designed to permit flow when controlling pressure exceeds spring setting. The pilot control system shall operate such that as excess line pressure is dissipated the main valve shall gradually close to a positive, drip-tight seating.

All diaphragm-actuated valves shall contain a resilient, synthetic rubber disc, having a rectangular cross-section, contained on three and one-half sides by a disc retainer and forming a tight seal against a single removable seat insert. The diaphragm assembly containing a valve stem shall be fully guided at both ends by a bearing in the valve cover and an integral bearing in the valve seat. This diaphragm assembly shall be the only moving part and shall form a sealed chamber in the upper portion of the valve, separating operating pressure from line pressure. The diaphragm shall consist of nylon fabric bonded with synthetic rubber and shall not be used as a seating surface. Packing glands and/or stuffing boxes are not permitted and there shall be no pistons operating the valve or pilot controls. All necessary repairs shall be possible without removing the valve from the line.

Strainers 2 inches and smaller shall be iron bodied “Y” type equal in size to corresponding pressure reducing valve. Strainers 3 inches and larger shall be Cla-Val X43H “H” style strainers. Strainer shall feature bolted cover machined to hold screen securely in place and tapped F.I.P.T. for blowoff outlet. Screens 2 inches and smaller shall be constructed from perforated stainless steel. Main-line strainer shall have flanged-ends and bypass strainer shall have threaded ends.

The vault shall be equal to Utility Vault Co. model 777-LA with cover as specified in the Standard Detail. Vault exterior shall be coated with a single component, moisture curing urethane with micaceous iron oxide applied at 5 to 7 micron dry film thickness per coat, two coats minimum, Sherwin-Williams Corothane 1-Coal Tar, or equal. Vault interior shall not be coated.

Q. Lids, Hatches, and Covers – Slip Resistance

Metal lids, hatches and access covers shall be constructed with a non-slip treatment having a coefficient of friction between 0.6 and 1.0 wet, as determined by ASTM C1028-89. Lids, hatches and access covers located on slopes of 4 percent or greater shall have a coefficient of friction.
between 0.8 and 1.0 wet, as determined by ASTM C1028-89. Prior to installation, the Contractor shall supply the Engineer with a shop drawing of the appurtenance, specifying a coefficient of friction meeting or exceeding the above requirement.

R. Fire Hydrant

Fire Hydrants shall have a minimum valve opening of 5-1/4-inch “O” ring stem seal, two 2-1/2-inch N.S.T. hose nozzle connections, and one 4-inch pumper connection with City of Seattle standard threads. The shoe connection, foot valve connection, and all joints between shall be six-inch mechanical joint with lugs. The operating and port cap nuts are 1-1/4-inch pentagonal. Hydrants shall be as shown in the approved materials list, with no exceptions unless approved by the Engineer. All hydrants shall be of the “Traffic Model” type with approved break-away features and brass to brass sub-seat. Shackle rods are not permitted on hydrants.

The portion of the public fire hydrant that is above ground shall be painted with two coats of Rust-Oleum, Krylon, or Sherwin-Williams Safety Yellow paint as set forth by the City of North Bend Fire Marshall.

The portion of the private fire hydrant that is above ground shall be painted with two coats of Rust-Oleum, Krylon, or Sherwin-Williams Red paint as set forth by the City of North Bend Fire Marshall.

S. Hydrant Guard Posts

Hydrant guard posts shall be 6-inch-diameter concrete filled ductile iron pipe class 52, 6-feet long. Pipe shall be painted with two coats of Rust-Oleum, Krylon, or Sherwin Wiliams Safety Yellow paint.

T. Meter Setter

Meter setters shall have double purpose couplings, unless otherwise specified, and angle meter valve with drilled wings for padlock, 12-inches high. The angle copper setter for the size meter to be installed, see Standard Details.

1-1/2-inch meter setters shall have vertical inlet and outlet tees with 1-inch lateral bypass, flanged ball meter valves on inlet and outlet, ball valve on bypass, and padlock wings on all valves, see Standard Details.

2-inch meter setters shall have vertical inlet and outlet tees with 1-inch lateral bypass, flanged ball meter valve on inlet, flanged key meter valve on outlet, ball valve on bypass, and padlock wings on all valves, see Standard Details.

U. Corporation Stop

Corporation stops shall be brass in accordance with AWWA Standard C800 with AWWA tapered thread (CC) inlet by compression fitting for copper outlet, complete with coupling nut for copper service.

Corporation stops for 1-inch, 1-1/2-inch, and 2-inch tap shall be the ball valve type.
V. Meter Box

Cast iron, steel and plastic composite meter boxes with non-slip ductile iron lid as specified in the Standard Details. Meters shall be centered in box.

W. Plastic Service Pipe

All joints with plastic pipe shall be made utilizing stainless steel inserts along with couplings or adapters.

Materials: Pipe shall meet the requirements of the standard specifications of Section 9-30.6(3)B and shall be Pure Blue Core as manufactured by JM Eagle or equal. Pipe shall be manufactured from ultrahigh molecular weight, high density polyethylene resin PE 3408. It shall meet the requirements of AWWA C901 and ASTM D-2239 or ASTM D-3727.

Marking: Pipe shall be permanently imprinted with manufacturer's brand name, pipe size, product standard (pipe only), identification of the NSF approval, ASTM specification, recommended working pressure, and production code. Letters shall be at least 3/16-inch high and should appear on the pipe at intervals no less than every 24 inches.

Dimensions: Pipe dimensions and tolerances shall correspond with the values listed in ASTM-D-2239 for flexible plastic pipe with a standard dimension ratio (SDR) of 7 I.P.S.

Working Pressure: Pipe shall have working pressure of 200 psi at 73.4 degrees F.

X. Pipe Insulation

All pipe for above ground service shall have 2-inch-thick foam insulation with an aluminum jacket. Foam insulation and aluminum jacket shall conform to the following:

Foam insulation shall be closed cell polystyrene foam manufactured by extrusion process. Foam insulation shall be odorless, chemically inert, with no food value and shall be resistant to ground chemicals and microorganism. Foam insulation shall conform to the following properties:

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>ASTM TEST</th>
<th>AVERAGE</th>
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<tr>
<td>Thermal Conductivity “K” Factor BTU HR./SQ. FT./+F/IN. Mean Temp. 40+</td>
<td>C518-70 &amp; C177-63</td>
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<tr>
<td>Moisture Resistance Water Absorption % By Volume</td>
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<tr>
<td>Water Vapor Transmission (Parm-Inch)</td>
<td>C355-64</td>
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<tr>
<td>Physical Density (lb./cu. ft.)</td>
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<td>40</td>
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</tbody>
</table>

Aluminum jacketing shall be manufactured from Type 3003 or 5005 alloy; temper of H-14 gauge 0.016.
Y. Concrete Bedding and Blocking

Bedding, blocking, encasement, or slope anchor concrete shall be mixed from materials acceptable to the Engineer and shall have a 30-day compressive strength of not less than 2,500 psi. The mix shall contain five sacks of cement per cubic yard and shall be of such consistency that the slump is between 1 inch and 5 inches. All concrete shall be mechanically mixed. Blocks shall be left open for inspection.

Z. Joint Restraint

Joint restraint methods shall be as per the Approved Materials list. Where shackle restraint is used, all parts shall be stainless steel (All Thread 316SS), along with 316SS stainless steel hardware. Stainless steel shackle restraints do not require painting.

AA. Reduced Pressure Backflow Assembly

All Reduced Pressure Backflow Assemblies shall be as listed on the most current copy of “Backflow Prevention Assemblies Approved for Installation in Washington State,” published by Washington State Department of Health (D.O.H.). The assembly shall include a tightly closing resilient seated shut-off valve on each end of the body and each assembly shall be fitted with four properly located resilient seated test cocks. All other appurtenances shall be as shown in the Standard Detail.

BB. Reduced Pressure Detector Assembly

This assembly shall include a line-sized D.O.H. approved (listed on the most current copy of “Backflow Prevention Assemblies Approved for Installation in Washington State” published by Washington State D.O.H.) Reduced Pressure Backflow Assembly with a parallel 3/4-inch meter and 3/4-inch D.O.H. approved Reduced Pressure Backflow Assembly. Each assembly shall include a tightly closing resilient seated shutoff valve on each end of the body and each assembly shall be fitted with four properly located resilient seated test cocks. All other appurtenances shall be as shown in the Standard Detail.

CC. Double Check Valve Assembly

All Double Check Valve Assemblies shall be as listed on the most current copy of “Backflow Prevention Assemblies Approved for Installation in Washington State” published by Washington State D.O.H. The assembly shall include a tightly closing resilient seated shutoff valve on each end of the body and each assembly shall be fitted with four properly located resilient seated test cocks. All other appurtenances shall be as shown in the Standard Detail.

DD. Double Check Detector Assembly

This assembly shall include a line sized D.O.H. approved (listed on the most current copy of “Backflow Prevention Assemblies Approved for Installation in Washington State” published by Washington State D.O.H.) Double Check Valve Assembly with a parallel 3/4-inch meter and 3/4-inch D.O.H. approved double check Valve Assembly. Each assembly shall include a tightly closing resilient seated shutoff valve on each end of the body and each assembly shall be fitted with four properly located resilient seated test-cocks. All other appurtenances shall be as shown in the Standard Detail.
EE. Backflow Assembly Resilient Seated Shut-Off Valves

Each valve shall be marked with model number with designation of resilient seat; such as “RS” or “R,” which must be cast, molded, or affixed onto the body or bonnet of the valve. All ferrous-bodied valves shall be coated with a minimum of 4 mils of epoxy or equivalent polymerized coating. 2 inch and smaller R.P.B.A.s and D.C.V.A.s shall use ball valves, and all 2-1/2 inch and larger R.P.B.A.s and D.C.V.A.s shall use resilient seated gate valves for domestic supply and resilient seated O.S. and Y. valves for fire lines.

The minimum requirements for all resilient seated gate valves shall, in design, material and workmanship, conform to the standards of AWWA C509.

FF. Barrier Fence

Barrier Mesh shall be manufactured from Low Density Polyethylene, stabilized against UV degradation, and with a special selection of pigments to ensure optimum visual performance under harsh weather conditions. Barrier Mesh shall be corrosion-free and resistant to salt water and most chemicals.

Barrier Mesh shall present a visual target area of approximately 0.5 square meter per square meter of mesh.

GG. Bedding and Backfill

(1) Pipe Bedding Materials

For PVC and Ductile Iron pipe, bedding for water mains shall be “pea gravel” meeting the specifications for a relatively round, processed, washed rock with:

- 100% passing the 3/8-inch screen
- 0% passing the #4 screen

If necessary on steep pipe runs, the pipe trench shall be constructed with trench dams of clay or CDF to prevent the migration of water through the pea gravel. Water collected in the trench shall be piped to a suitable discharge location.

For convenience, crushed rock bedding conforming to crushed surfacing top course material of Section 9-03.9(3) Crushed Surfacing Top Course of the Standard Specifications may also be used as bedding material for pipe.

(2) Trench Backfill Materials

For transverse trenches (perpendicular to the roadway centerline) in paved areas, trench backfill conforming to Section 9-03.9(3) Crushed Surfacing Base Course of the Standard Specifications shall be used. In paved areas, if a full pavement restoration is not being constructed, trench shall be backfilled with CDF to within 12 inches of the finished surface. The remaining 12 inches shall be restored with crushed surfacing and HMA.

For longitudinal trenches (trenches parallel to the centerline of the roadway) in paved areas, backfill material (4 feet and deeper below finished grade) shall conform to Section 9-03.14(1) Gravel Borrow of the Standard Specifications. The Contractor may request to
use excavated material as trench backfill and must demonstrate to the Engineer that the suitable excavated material conforms to Section 9-03.14(1) Gravel Borrow of the Standard Specifications and proper compaction levels can be achieved. Admixtures and/or additives may not be used to modify the moisture content in order to meet compaction specifications.

The top 4 feet of longitudinal trenches in paved areas shall be backfilled with crushed rock conforming to Section 9-03.9(3) Crushed Surfacing Base Course of the Standard Specifications.

In unpaved areas, trench backfill material shall conform to Section 9-03.14(1) Gravel Borrow of the Standard Specifications. The Contractor may request to use excavated material as trench backfill when it has been determined by the Engineer to be suitable and conforms to Section 9-03.14(1) Gravel Borrow of the Standard Specifications and proper compaction levels can be achieved.

(3) Structure Backfill Materials

In paved areas, backfill material (4 feet and deeper below finished grade) shall conform to Section 9-03.14(1) Gravel Borrow of the Standard Specifications. The Contractor may request to use excavated material as trench backfill when it has been determined by the Engineer to be suitable and conforms to Section 9-03.14(1) Gravel Borrow of the Standard Specifications and proper compaction levels can be achieved.

The top 4 feet around structures shall be backfilled with crushed rock conforming to Section 9-03.9(3) Crushed Surfacing - Top Course of the Standard Specifications.

In unpaved areas, structure backfill material shall conform to Section 9-03.14(1) Gravel Borrow of the Standard Specifications. The Contractor may request to use excavated material as structure backfill when it has been determined by the Engineer to be suitable and conforms to Section 9-03.14(1) Gravel Borrow of the Standard Specifications and proper compaction levels can be achieved.

(4) Foundation Gravel Materials

Foundation gravel for structures shall consist of one of the following aggregates as set forth in the Standard Specifications:

- Ballast 9-03.9(1)
- Permeable Ballast 9-03.9(2)
- Gravel Backfill for Foundations (Class A or B) 9-03.12(1)
- Foundation Material Class A and Class B 9-03.17

(5) Controlled Density Fill Materials

Controlled density fill (CDF, aka flowable fill) shall be a mixture of Portland Cement, admixture (optional), Fly Ash, aggregates and water. It shall be proportioned to provide a grouty, non-segregating, free flowing, self-consolidating and excavatable material that will result in a non-settling fill which has measurable unconfined compressive strength. CDF shall meet the standard specifications of Section 2-09.3(1)E.
HH. Steel Casing

Steel casing shall be black steel pipe conforming to ASTM A53. Before installation, coat casing exterior with shop-applied anticorrosive coating conforming to AWWA C210. Minimum coating thickness shall be 16 mils dry film thickness (DFT); however, thickness shall not exceed manufacturer’s recommended thickness. Coating type shall be a polyamide epoxy-coal tar equal to Tnemec Hi-Build Tnemec-Tar, Series 46H-413.

Casing wall thickness shall be 0.250 inch for casings 24 inches or less in diameter and 0.375 inch for casings over 24 inches in diameter.

Carrier pipe for water shall be Ductile Iron, Class 52.

II. Casing Spacer

Casing spacer shell shall be manufactured in two pieces from heavy gauge T-304 stainless steel or 14-gauge hot rolled pickled steel joined with ribbed flanges. The shell shall be lined with a PVC liner 0.090 inch thick with 85-90 durometer.

Carbon steel casing spacer shell and risers shall be coated with a heat fused PolyVinyl chloride coating, or hot-dip galvanized.

PolyVinyl Chloride Coating Specifications:

- Durometer - Shore A2 (10 Sec.) (ASTM D1706-61T)  - 80
- Max. operating temperature (constant) - 150° (65°C)
- Electrical properties (ASTM D149-61)(short time .010") - 1380 V/Mil
- Resistance:
  - Salt spray (ASTM B117)  - Excellent
  - Acids  - Good
  - Alkalies  - Good

All nuts and bolts shall be 18-8 stainless steel.

Runners shall be supported by risers made from heavy gauge T-304 stainless steel or 12 gauge hot rolled pickled steel. Runners shall be ultra high molecular weight polymer with high resistance to abrasion and sliding wear.
## TYPICAL DATA

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<th>UNITS</th>
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<td>Tensile Strength (Break)</td>
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### ABRASION CHARACTERISTICS

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<tr>
<td>Sand Slurry*</td>
<td>D-1000</td>
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*Sand slurry condition - 7 hours in one part sand/one part water slurry at 1,725 rpm. Carbon steel - 100, Hifax - 15. The lower the value, the more resistant to abrasion.

Casing spacers shall be “center positioning” type. Height of risers and runners combined shall be sufficient to keep the carrier pipe bell, couplings, or fittings at least 0.75 inch from the casing pipe wall at all times and provide at least 1-inch clearance between runners and top of casing wall, to prevent jamming during installation.

### 6.05 Water Methods of Construction

#### A. General Construction Requirements

The improvements shall be constructed as shown on the plans and in accordance with these Standards, Standard Details, and Standard Specifications. Manufacturer’s equipment shall be installed in compliance with specifications of the manufacturer, except where a higher quality of workmanship is required by the plans and specifications. All materials and work shall be in strict accordance with any applicable regulations of the State, County and local authorities. The Contractor shall arrange for such inspection by these agencies as may be required and shall submit evidence of their approval, if requested by the Engineer.

1. **Alignment & Staking**
   
   All work done under a Project shall be to the lines and grades shown on the plans or to approved revisions.

2. **Inspections & Tests**
   
   (a) The Engineer shall, at all times, have access to the work for the purpose of inspecting and testing, and the Contractor shall provide proper facilities for such access and such inspection and testing.

   (b) If any work is covered up without approval or consent of the Engineer, it must, if required by the Engineer, by uncovered for inspection.
(c) Before a performance test is to be observed by the Engineer the Contractor shall make whatever preliminary tests are necessary to assure that the material and/or equipment are in accordance with the plans and specifications.

(d) Written notice of deficiencies, adequately describing the same, shall be given to the Contractor upon completion of each inspection and the Contractor shall correct such deficiencies within seven days of the notice and before final inspection will be made by the Engineer, unless otherwise approved.

B. Surface Water Quality

The Contractor is required to implement water pollution controls and maintain these until the project is accepted by the City. The Contractor shall familiarize himself with the requirement of the King County Surface Water Design Manual (KCSWDM).

The following list of requirements is a summary of the construction activity requirements of the KCSWDM and is provided as a guide to the Contractor. The City may have additional requirements with which the Contractor shall comply.

(1) Chlorine Residual from Water Main Testing or Disinfection

Water with chlorine residual shall be disposed of through sanitary sewers, storing and aerating or percolation into the ground. Water containing a chlorine residual shall not be disposed of into the storm drainage system or any waterway.

(2) Oil and Chemical Storage and Handling

Storage area shall be diked. No disposal of oil products or waste on the site, including oil filters. The Contractor shall provide a waste oil disposal tank, if needed.

C. Laying Ductile Iron Pipe

Work shall be accomplished in accordance with AWWA Standard C600 and the manufacturer’s recommendation.

The bottom of the trench shall be finished to grade in such a manner that the pipe will have bearing along the entire length of the barrel. Bolts on mechanical pipe and fittings shall be tightened uniformly with a “Torque” wrench which measures the torque for mechanical joints shall be as follows:

- 2” - 3” pipe sizes 5/8” Bolts 40 - 60 ft-lbs torque
- 4” - 24” pipe size 3/4” Bolts 60 - 90 ft-lbs torque

Installation of push-on joint (Tyton) pipe shall be in accordance with the manufacturer’s instructions. All buried ductile iron pipe and adjacent valves and fittings shall be encased with 8-mil polyethylene.

Pipe shall not be located below soil nails. If the pipe is located above a soil nail, a minimum of 5 feet of clearance is required.
D. Laying Galvanized Iron Pipe

The galvanized iron pipe, valves and fittings shall be threaded.

Joints shall be made in accordance with good plumbing practice. Threads shall be coated with Teflon tape before connecting.

Pipe shall not be located below soil nails. If the pipe is located above a soil nail, a minimum of 5 feet of clearance is required.

E. Fire Hydrant Installation

Fire hydrants shall be set as shown in the Standard Details and AWWA Standard C600. Hydrant and the gate valve must have lugs. The tee on the main line shall not be considered as part of the assembly. The hydrant run shall be restrained with MEGALUG restrainer at M.J. end on hydrant and gate valve. If more than one pipe is required on hydrant run, connect pipes with mechanical joint sleeve and MEGALUG restrainers.

When fire hydrants are located in parking lots, or other areas where permitted speed limits do not exceed 5 miles per hour, hydrant guard posts shall be installed as follows:

Hydrant guard post shall be installed in areas where the hydrant is not protected by a cement concrete curb on all sides where vehicles may have access. Guard posts shall be installed according to the minimum dimensions shown in the Standard Details.

Where a hydrant is being installed, reset, moved or reconnected, a blue raised pavement marker (Type 2) shall be installed perpendicular to each hydrant in the interior channelization of the outside lane, unless one already exists. Install the lane marker 1 foot off of the channelization line, toward the hydrant.

F. Valve Installation

Before installation, valves shall be cleaned of all foreign material. Such blocking as the Engineer may deem necessary shall be provided. The valve and valve box shall be set plumb with the valve box centered on the valve. The top of the valve box shall be set with all valves except auxiliary valves for hydrants. Where valve operating nut is more than three feet below finished grade, a stem extension conforming to the Standard Detail must be installed. Tapping valves shall be water tested prior to tapping water main.

The top of the valve box base section shall be located a minimum of 6 inches and maximum of 9 inches below finished grade. A polyethylene sheet, 8-mils thick, shall be placed between the top and base valve box sections to prevent metal to metal contact where the sections overlap.

Valve box top sections shall be adjusted flush with the finished pavement and, in those areas to be excavated for future roadway grades, enough adjustment shall be provided in the valve box to allow the top of the box to be adjusted to the required grade.

G. Air Vacuum Installation

Installation shall be as shown on the Standard Detail.
Iron Piping and fittings shall be galvanized. Location of the air release valves as shown on the plans is approximate. The installation shall be set at the high point of the line. The water line must be constructed so the air release valve may be installed in a convenient location.

H. Valve Box Marker Installation

Concrete marker posts, painted with two coats Rust-Oleum No. 2766 Hi-Gloss white paint, shall be set for all valves, where needed. The marker shall be set on a line through the valve at right angles to the center line of the road. The marker shall generally be set on the property line unless the Engineer decides another location is safer or more conspicuous. Distance to the valves shall be neatly stenciled on the post with 2-inch numerals. Valve markers shall be installed only in unimproved or unpaved areas.

I. Service Lines

(1) New Service Installations

Service installation shall be as shown on the Standard Details.

Tapping of polyethylene encased ductile iron pipe shall be performed by wrapping three layers of polyethylene compatible adhesive tape completely around the pipe to cover the area where the direct tapping machine and chain will be mounted.

Where a saddle is used in lieu of direct tapping, make a cut in the taped area large enough to accommodate the gasket directly in contact with the ductile iron pipe. Make necessary repair for damaged encasement.

The existing polyethylene encasement shall be field cut and replaced after the tap is installed.

(2) Reconnecting Existing Services

Install service connections as shown on the Standard Detail and plans. Install services under paving by boring. Bore or tunnel under sidewalks and curbs. Damages shall be repaired by Contractor. Provide 30-inches minimum cover on service lines. Install service at 90 degrees horizontally to the main to intercept the existing meters. A deviation of not more than 3 degrees will be allowed. Blow off service prior to connection to meter.

Install meter setter and boxes as shown on the Standard Detail and where directed by the Engineer.

Service connections shall not be transferred to the new main until it has been successfully flushed, disinfected and tested. When transferring services from the existing main to the new main, the Contractor shall take sanitary precautions to protect the potable water supply in both the existing and new mains.

The Contractor shall submit for approval a sketch and a list of proposed bushings, adapters, etc. The sketch shall show proposed fittings, (by brand name) for single meter hookups, and connection to existing copper and plastic pipe of various diameters. Multi-meter hook-ups are not allowed, when existing multi-meter hook-ups are encountered,
the Contractor shall convert them to single meter hook-ups.

All new service line shall be soft annealed copper.

No reconnection to substandard service lines shall be allowed.

Substandard plastic service pipe is usually 80 psi polyethylene pipe. The Engineer shall decide if existing service lines are substandard.

J. Pressure Reducing Station

The pressure reducing valves, strainers, pressure relief, pipes and fittings shall be constructed in accordance with the applicable AWWA and uniform plumbing code requirements. Pressure reducing valves, 6 inches and larger, shall be supported by a pipe stanchion. Stanchion shall be bolted to vault floor.

Pressure relief discharge pipe shall be placed in location that will not be subject to damage or erosion during discharge of water.

K. Concrete Blocking

All bends and tees and valves shall be blocked in accordance with the Standard Details. All poured in place blocking shall have a minimum measurement of 12 inches between the pipe and the undisturbed bank. The Contractor shall install blocking which is adequate to withstand full test pressure, as well as, to continuously withstand operating pressures under all conditions of service. All concrete shall be mechanically mixed.

L. Connection to Existing Water Main

Points of connection to existing water mains shall be exposed prior to trenching of the new line, and not less than 48 hours prior to the anticipated connection time. The contractor shall request a shut-down from the City at least 7 calendar days excluding holidays in advance of the need of any water main shut-off or connection. Water main shut-offs shall not be scheduled to take place on Fridays, or on the 5 days before nor 1 day after a City holiday, unless otherwise approved by the City. The Contractor shall notify impacted water customers not less than 48 hours (2 calendar days excluding weekends and holidays) in advance of interruption of water service. The Contractor shall ensure that the existing fittings are in accordance with the Contract Plans and that the connection can be made in accordance with the Contract Plans. The Contractor shall immediately notify the Engineer if the connection cannot be made in accordance with the plans in order that the connection detail may be revised.

Connection to the existing main shall take place only after the new main is flushed, disinfected, and satisfactory bacteriological sample results are obtained. An approved backflow prevention assembly shall be installed between the existing and new water lines during disinfection and flushing of new main. All connections to the existing system and all testing of the new line must be with the authorization of, and in the presence of, the authorized representative of the City. Opening and closing of valves, and use of water from the City’s system will be done only by the City. The backflow preventer and supply hose must be disconnected during hydrostatic pressure testing of new main.
The City priority is to install connections to existing water mains via cut-ins. Tapping tees are of second priority and may be installed upon approval by the City. Connections may be made to existing pipes under pressure with a tapping machine by determining the size and type of pipe and installing tapping tee to fit complete with tapping gate valve. Tapping tees shall be installed as shown on the Standard Details. Where cut-ins are permitted to be made in existing pipes, the work shall be conducted at such a time and in such a manner as to minimize the interruption of service. Cut-in time must be approved by the City. Necessary pipe, fittings and gate valves shall be assembled at the site ready for installation prior to the shutting-off of water in the existing main. Once the water has been shut off, the work shall be prosecuted vigorously and shall not be halted until the line is restored to service. The interiors of all pipe and fittings to be used in final connection shall be swabbed or sprayed with a 1 percent available chlorine solution.

All water main shutoffs shall be performed by City staff. Water main shut-offs shall occur during non-holiday weekdays unless otherwise specified herein or as agreed to by the Engineer. The Contractor shall request water main shut-offs at least seven calendar days in advance (not including holidays) of need. The Contractor shall notify all affected water users in writing at least 48 hours in advance (not including weekends and holidays) of any water shutoffs. The Engineer will provide the written notice to customers for the Contractor to distribute. Water main shut-offs shall not occur in the 5 weekdays preceding or the day after the major holidays listed below:

- Memorial Day
- Fourth of July
- Labor Day
- Thanksgiving
- Christmas
- New Year’s Day

Due to the needs of various water customers in the project vicinity, water shut-off periods are limited to the times set forth below:

<table>
<thead>
<tr>
<th>Days</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>8:30 AM to 3:00 PM</td>
</tr>
<tr>
<td>Tuesday</td>
<td>8:30 AM to 3:00 PM</td>
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<tr>
<td>Wednesday</td>
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<td>Saturday</td>
<td>DO NOT SCHEDULE</td>
</tr>
<tr>
<td>Sunday</td>
<td>DO NOT SCHEDULE</td>
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</tbody>
</table>

The Engineer, at his sole discretion, may adjust these shutoff periods in order to address specific project circumstances and customer needs.

M. Order of Construction

Restoration of trenches shall closely follow installation and testing of pipe. The Engineer will inspect and observe the hydrostatic test of the pipe within 24 hours after notification by the Contractor that a section is ready for inspection and test. The Contractor shall contact the Engineer at least 24 hours in advance of the completion of sterilization and flushing and his representative shall be present when the Engineer takes water samples.
N. Hydrostatic Tests

Prior to the acceptance of the work, the installation shall be subjected to a hydrostatic pressure test per WSDOT Standard Specifications Section 7-09.3(23) in the line and any leaks or imperfections developing under said pressure shall be remedied by the Contractor before final acceptance of the work. No air will be allowed in the lines. The mains shall be tested between valves. Insofar as possible, no hydrostatic pressure shall be placed against the opposite side of the valve being tested. Test pressure shall be maintained while the entire installation is inspected. The Contractor shall provide all necessary equipment and shall perform all work connected with the test. Tests shall be made after all valved connections have been made. At unvalved connection points, a temporary plug (or 2-inch blowoff assembly on lines without hydrants) shall be installed at the end of the new main. This shall include concrete blocking necessary to withstand pressures encountered during the hydrostatic test.

Fire Line testing shall be in accordance with the City’s Fire Code and National Fire Prevention Association (NFPA) Standard #13 and #25, with no loss for two hours.

Once the new line is successfully tested and disinfected, the plug (blowoff) shall be removed and the connection to the existing main completed. Insofar as it is practical, tests shall be made with pipe joints, fittings and valves exposed for inspection. For approval, pressure shall not drop more than 10 psi for 15 minutes. The Contractor shall perform the test to assure that the equipment to be used for the test is adequate and in good operating condition, and the air in the line has been released before requesting the Engineer to witness the test. The Engineer shall witness the test; if the test does not pass inspection for any reason, additional trips required to witness the test shall be done at the Contractor’s expense.

The contractor shall provide special plugs and blocking necessary in those locations where it would be necessary to test against butterfly valves to insure that the pressure ratings of these valves is not exceeded during testing.

O. Sterilization and Flushing of Water Mains

Sterilization of water mains shall be accomplished by the Contractor in accordance with the requirements of the Washington State Department of Health and in a manner satisfactory to the Engineer. The section to be sterilized shall be thoroughly flushed at maximum flow established by the Engineer prior to chlorination. Flushing period must be approved by the City. Sections will ordinarily be sterilized between adjacent valves unless, in the opinion of the Engineer, a longer section may be satisfactorily handled. Chlorine shall be applied by solution feed at one end of the section with a valve or hydrant at the opposite end open sufficiently to permit a flow through during chlorine application. The chlorine solution shall be fed into the pipeline already mixed by an automatically proportioning applicator so as to provide a steady application rate of not less than 60 ppm chlorine. Hydrants along the chlorinated section shall be open during application until the presence of chlorine has definitely been detected in each hydrant run. When a chlorine concentration of not less than 50 ppm has been established throughout the line, the valves shall be closed and the line left undisturbed for 24 hours.

As an alternative, the Contractor may use granulated chlorine for small systems if the flushing and testing can be completed within 1 week after placing the granulated chlorine. Granulated chlorine (dry calcium hypochlorite at 65 percent – 70 percent chlorine) shall be placed in the pipe to yield a dosage of not less than 50 ppm. The number of ounces of 65 percent test calcium
hypochlorite required for a 20-foot length of pipe equals .00843ld, in which “d” is the diameter in inches. The line shall then be thoroughly flushed and water samples taken for approval by the local health agency. Flushing period must be approved by the City. The Contractor shall exercise special care in flushing to avoid damage to surrounding property and to conform to Section 6.05 B Surface Water Quality.

Should the initial treatment result in an unsatisfactory bacteriological test, additional chlorination using the first procedure shall be repeated by the Contractor until satisfactory results are obtained. The Contractor shall be responsible for disposal of treated water flushed from mains and at no time shall chlorinated water from a new main be flushed into a body of fresh water. This is to include lakes, rivers, streams, storm drainage systems, and any and all other waters where fish or other natural water life can be expected. Disposal may be made to any available sanitary sewer provided the rate of disposal will not overload the sewer.

P. Preconstruction Photos for City Contracts

Before commencing any construction work as described in the plans and specifications, the Contractor shall provide photographs of pre-existing conditions of the area that will be disturbed during construction operations. Photographs will be obtained as follows:

- Every 25-foot interval in easements.
- Every 50-foot interval in paved areas.
- And any other location as directed by the Engineer.

The photographs shall be taken with a 35mm camera, developed in 4” x 6” color prints, contained in albums, cataloged, and cross-referenced.

Q. Trench Excavation

Before commencement of trenching provide sediment trap for all downhill storm drain catch basins per City of North Bend detail. Plastic sheeting must be available onsite. In case of rain any stockpiled material must be covered and secured.

Clearing and grubbing limits may be established by the Engineer for certain areas and the Contractor shall confine his operations within those limits. Debris resulting from the clearing and grubbing shall be disposed of by the Contractor.

Trenches shall be excavated to the line and grade designated by the Engineer and in accordance with the Standard Details. Trenches shall comply with OSHA and WISHA requirements regarding worker safety.

The trench shall be kept free from water until joining has been completed. Surface water shall be diverted so as not to enter the trench. The Contractor shall maintain sufficient pumping equipment on the job to insure that these provisions are carried out. The Contractor shall perform all excavation of every description and of whatever substance encountered as part of his trench excavation cost. Unsuitable material below the depth of the bedding shall be removed and replaced with satisfactory materials as determined by the Engineer.

Trenching operations shall not proceed more than 100 feet in advance of pipe laying except with written approval of the Engineer.
Providing sheeting, shoring, cribbing, cofferdams, and all aspects involved therein shall be the sole responsibility of the Contractor. Such trench/excavation protection shall comply with the requirements of Section 2-09 Structure Excavation and Section 7-08.3(1)B Shoring of the Standard Specifications, Chapter 49.17 RCW of the Washington Safety and Health Act, and Part N – Excavation, Trenching and Shoring of Chapter 296-155 WAC.

When trenching operations take place in the public right-of-way, the pavement, and all other improvements, shall be restored as required by the Right-of-Way Use Permit.

R. Sheeting and Shoring

The Contractor shall provide and install sheeting and shoring as necessary to protect workmen, the work and existing utilities and other properties in compliance with OSHA and WISHA requirements. All sheeting and shoring above the pipe shall be removed prior to backfilling. Sheetings below the top of the pipe may be cut off and left in place.

All trenches and excavations more than 4 feet in depth shall be shored in compliance with applicable Federal and State regulations. Shoring shall be required in all street excavation. Sloping to the angle of response will be permitted only in non-critical off-street areas.

Removal of the sheeting and shoring shall be accomplished in such a manner that there will be no damage to the work or to the other properties.

S. Trench Dewatering

When water is encountered to a degree that a successful trenching and pipe laying operation is hampered, dewatering will be the responsibility of the Contractor. Determination of the method to be used to dewater trenched areas will be the responsibility of the Contractor, but any method used must be in accordance with the specifications and requirements of the Washington State Department of Ecology and the Local Jurisdiction.

T. Bedding, Backfill, and Compaction

(1) Pipe Bedding Construction Requirements

Pipe bedding shall conform to Section 7-08.3(1)C Bedding the Pipes of the Standard Specifications as modified herein in order to provide uniform support along the entire pipe barrel, without load concentration at joint collars or bells.

Jetting is not an allowable method to compact the bedding materials.

(2) Trench and Structure Backfill Construction Requirements

Backfilling shall be accomplished in accordance with Section 2-09 Structure Excavation of the Standard Specifications as modified herein:

In paved areas, trench backfill material shall be compacted to 95% maximum dry density per Section 2-03.3(14)D Compaction and Moisture Control Tests of the Standard Specifications.
In unpaved areas, trench backfill material shall be compacted to 90% maximum dry density per Section 2-03.3(14)D Compaction and Moisture Control Tests of the Standard Specifications.

The Contractor shall arrange for compaction testing to be performed by a certified technician. The Contractor shall provide the Engineer with one copy of the compaction test report within 24 hours of the completion of the test.

Compaction tests shall be made at a maximum of 4-foot depth increments with a minimum of one test for any backfilling less than 4 feet in depth. The maximum space between tests shall not exceed 100 linear feet. At least one compaction test shall be performed at each backfilled structure or for every 50 CY of backfill placed. If the structure (e.g., manhole, catch basin or inlet) is part of a pipeline trench, then trench compaction testing frequency governs.

For mechanical compaction methods (“hoe pack,” vibratory roller, static roller, etc.), the maximum backfill lift shall not exceed 2 feet between the application of compaction equipment.

For manual compaction methods (all walk-behind equipment, “jump jack,” etc.), the maximum backfill lift shall not exceed 1 foot between the application of compaction methods.

Jetting is not an allowable method to compact the trench backfill.

Surface restoration shall be as specified in the Right-of-Way Use Permit and as shown on the approved plans.

(3) Foundation Gravel Construction Requirements

Foundation gravel under manholes, catch basins, inlets, vaults, and other precast concrete structures shall be placed in layers not more than 6-inches thick and compacted to provide a firm and level base on which to place the structure. Unless shown otherwise on the Contract Plans, the minimum thickness of foundation gravel under precast concrete structures is 6 inches.

(4) Controlled Density Fill Construction Requirements

Controlled Density Fill (CDF) can be proportioned to be flowable, non-segregating, or excavatable by hand or machine. Desired flowability shall be achieved with the following guidelines:

- Low Flowability below 6-inch slump
- Normal Flowability 6 - 8-inch slump
- High Flowability 8-inch slump or greater

CDF shall be placed by any reasonable means into the area to be filled.

CDF patching, mixing and placing may be started if weather conditions are favorable, when the temperature is at 34 degrees F and rising. At the time of placement, CDF must have a temperature of at least 40 degrees F. Mixing and placing shall stop when
temperature is 38 degrees F or less and falling. Each filling stage shall be as continuous an operation as is practicable. CDF shall not be placed on frozen ground.

Trench section to be filled with CDF shall be contained at either end of trench section by bulkhead or earth fill.

When used to support existing asbestos cement (AC) pipe, the flowable CDF shall be brought up uniformly to the bottom of the AC pipe, as shown on the plans, or as directed by the Engineer.

Contractor shall provide steel plates to span utility trenches and prevent traffic contact with CDF for at least 24 hours after placement or until CDF is compacted or hardened to prevent rutting by construction equipment or traffic.

U. Trenchless Excavation

The use of trenchless excavation methods such as pipe bursting and horizontal directional drilling shall be considered by the City on a case-by-case basis under the following conditions:

(1) Romac 501 transition couplings are required at both ends.

(2) The installed pipe must be electronically located and marked on the ground for measurement in order to draw the as-built schematics.

(3) The pipe must be video-inspected following installation, with water running. The video inspection must be provided to the Inspector to approve the installation or require corrections.

(4) Pipe bursting is not allowed on another person’s property or public right-of-way without the appropriate permission, such as an easement, or right-of-way use permit.

V. Adjust Existing Structure to Grade

(1) Vault Cover Adjustment

Existing vault covers affected by a pavement overlay, or adjustment in surface grade, shall be adjusted to grade within 3 calendar days excluding weekends and holidays.

(2) Valve Box Adjustment - Pavement Overlays and Sidewalks

(a) Raising the existing valve box cover less than 2 inches shall be accomplished by adjusting the existing top section of the valve box.

(b) Raising the existing valve box cover 2 inches or more, shall be accomplished by either adjusting the existing top section or by inserting a valve box paving riser into the existing valve box top. The paving riser shall be epoxied to the valve box.

(c) If the valve box base section needs to be extended, the contractor shall install a 4-inch-diameter cast iron soil pipe, with bell-end of the soil pipe inserted over the top of the existing valve box base section. The spigot-end of the soil pipe shall
be located a minimum of 6 inches and maximum of 9 inches below finished grade. The valve box top section shall be slipped over the soil pipe and adjusted to final grade. A polyethylene sheet, 8-mils thick, shall be placed between the valve box and soil pipe to prevent metal to metal contact where the sections overlap.

Final box adjustment shall leave the top of the valve box no higher than final grade, and no lower than 0.5 inch below final grade.

In asphalt concrete pavement overlay areas, excavation of the valve box to be raised shall be accomplished by sawcutting or neat-line jackhammering the pavement a minimum of 12 inches around the perimeter of the valve box.

Final adjustment of valve boxes shall be made within 20 calendar days following the final overlay.

(3) Valve Box Adjustment - Unimproved Areas

Adjustment of valve box covers located outside paved areas or sidewalks can be accomplished using a 12-inch valve box adjusting sleeve inserted into the existing valve box top section.

W. Abandoning Facilities

(1) Abandoning Pipe in Place

The Contractor shall plug the open ends of all pipes, fittings, etc., to be abandoned with end cap coupling on asbestos cement or steel pipe, with mechanical joint cap or plug on cast or ductile iron pipe.

(2) Abandoning Structures

Abandonment of structures shall be completed only after piped systems have been properly abandoned. Structures within the public right-of-way, a public easement or which are part of the publicly-owned and maintained system must be:

- Removed completely according to Section 2-02 of the current Standard Specifications; or
- Abandoned according to Section 7-05.3 of the current Standard Specifications provided no conflicts with new utilities or improvements arise.

(3) Abandoning Gate Valves in Place

Abandoned valves shall be removed and a blind flange installed on the tee. When an abandoned valve cannot be removed, as determined by the City, the valve shall be closed, a blind flange installed and a piece of 2-inch white PVC shall be placed over the operating nut.
X. Lawn Removal and Replacement

Any lawn damaged by the Contractor outside of limits shown on the plan shall be restored to conditions existing prior to construction. Contractor shall take care to limit the area of disturbance.

When lawn removal and replacement is called for, a sufficient width (at least 2 feet wider than outside width of backhoe wheels or tracks) of lawn turf shall be removed prior to beginning excavation so that heavy equipment does not run over the lawn.

The area of the sod to be removed shall be laid out in squares or strips of such size as to provide easy handling and matching. The sod shall then be carefully cut along these lines to a depth of 4 inches, taking care to keep cuts straight and strips of the same width. After the sod has been cut vertically, it shall be removed to a uniform depth of approximately 3 inches with an approved type of sod cutter.

This operation shall be performed in such manner as to ensure uniform thickness of sod throughout the operation.

Prior to installation of new sod, the scalped area shall be carefully shaped to proper grade and be thoroughly compacted. Wherever the construction operations have resulted in the placement of unsuitable or poorer soils in the area to be resodded, the surface shall be left low and covered with top soil.

The finished grade, after shaping and compacting the top soil, shall be thoroughly dampened prior to and immediately before replacing the sod. The sod shall be replaced to the required grade, taking care to butt each piece tightly against the adjacent one. Upon completion, the sod shall be dampened and rolled with a lawn roller.

All tools used shall be of the type specially designed for the work and be satisfactory to the Engineer. In no case shall sod be removed by the use of a mattock or other tool which will not meet requirements specified herein.

Sod shall be a 4-way blend of Ryegrasses.

Y. Boring Under Roots

Boring under the root systems of trees (and plants) shall be accomplished by excavating a trench or pit on each side of the tree and then hand digging or pushing the pipe through the soil under the tree. The pit walls shall be a minimum of 7 feet from the center of the tree and shall be sufficient depth to lay the pipe at the grade shown on the plan and profile.

Z. Highway and Railroad Crossings

Interstate, state, or county highway and railroad crossings require the placing of steel, cast iron or concrete pipe casing by jacking or tunneling and laying the carrier pipe within the casing.
AA. Boring and Jacking Steel Casing

The Contractor shall verify the vertical and horizontal location of existing utilities. If required to avoid conflicts and maintain minimum clearances, adjustment shall be made to the grade of the casing.

The pipe shall be bored and jacked where indicated. The Contractor shall remove or penetrate all obstructions encountered. If groundwater is found to be a problem during boring operations, the Contractor shall do all that is necessary to control the flow sufficiently to protect the excavation, pipe and equipment so that the work is not impaired. Any pipe damaged during the boring and jacking operation shall be repaired by the Contractor in a manner approved by the Engineer.

Special care shall be taken during the installation of the bored and jacked pipe to ensure that no settlement or caving be caused to the above surface. Any such caving caused by the placement of the pipe shall be the Contractor’s responsibility and he shall repair any area so affected as directed by the Engineer.

During the jacking operations, particular care shall be exercised to prevent caving ahead of the pipe which will cause voids outside of the pipe. If voids exist, the Contractor shall drill through the wall of the pipe and fill the voids with a pumped cement grout. All voids shall be filled to the satisfaction of the Engineer.

The carrier pipe shall be installed in the casing as shown on the drawings. The Contractor shall support carrier pipe with casing spacers as shown in the Standard Detail. The casing pipe shall not be backfilled with sand and grout. The casing ends shall be sealed with asphaltic material 1 foot minimum on each end, or with manufactured rubber end seal device.

Boring pits shall be backfilled with select native material and compacted to 95 percent maximum dry density as determined by ASTM D-1557. The contractor shall provide sufficient select backfill material to make up for the rejected material.

All disturbed ground shall be restored to its original condition or better.

BB. Working with Asbestos Cement Pipe

When working with asbestos cement pipe, the Contractor is required to maintain workers’ exposure to asbestos material at or below the exposure limit as prescribed in WAC 296-62-07705 State/Federal Guidelines and Certification.

CC. Asbestos Cement Water Main Crossing

Where new utility line crosses below an existing AC main, the AC pipe shall be replaced with DI pipe to 3 feet past each side of trench as shown on the Standard Detail. Alternatively, where directed by the Engineer, the trench shall be backfilled with controlled density fill (CDF, aka flowable fill) from bottom of trench to bottom of the AC main.

DD. Vault Installation

Vaults for water facilities (pressure reducing station, water service, backflow device, etc.) shall be constructed at the locations shown in the plan and as staked. It shall be constructed as shown in the plans, Standard Details and as directed by the Engineer.
The excavation shall have minimum 1-foot clearance between the vault outer surfaces and the earth bank. The vault shall be placed on firm soil. If the foundation material is inadequate, the contractor shall use foundation gravel or bedding concrete to support the vault. The vault shall be plumb and watertight. The access cover shall be seated properly to prevent rocking and shall be adjusted to match the finished grade. The vault shall have coal tar coating of 5 to 9 mils applied to the exterior.

Vault floor shall drain to daylight, or to location shown on the plan. Drain pipe shall be minimum 4-inch diameter.

Where knockout locations for pipe do not coincide with locations of pipe penetrations into the vault, the Contractor shall core drill openings for pipe.

EE. Clearances/Other Utilities

If the minimum vertical distance between utility pipes is less than 6 inches and such installation is approved by the City, a pad shall be placed between the pipes. The pad shall be O.D. x O.D. x 2.5-inches thick minimum or as required to protect the pipes. Above O.D. is equal to the outside diameter of the larger pipe. The pad shall be a polyethylene foam plank (Dow Plastics Ethafoam™ 220), or approved equal. Additional measures may be necessary to ensure system integrity and may be required as evaluated by the City on a case by case basis.

6.06 Summary of Underground Fire System Installation Requirements for Commercial and Multi-Family Projects (for Services Greater than 2 Inches in Diameter)

A. General

Listed below is a summary of the requirements for the installation of underground fire lines in commercial and multi-family projects.

B. Permitting

Installation of a dedicated fire service line from the municipal water main to the building floor flange and underground fire sprinkler piping and appurtenances (e.g., FDCs) shall be accomplished under a Utility Developer Extension Agreement (UE).

C. Installation

Contractor must be a Level “U” or Level III licensed contractor in accordance with RCW 18-160 and WAC 212-80 to install any portion of the fire sprinkler underground piping. Developer shall submit proof of Contractor’s Certificate of Competency Holder and fire sprinkler system licensing prior to permit issuance. State law does not allow a licensed contractor to subcontract fire sprinkler system installation to an unlicensed contractor.

D. Inspections

Inspectors will inspect and test the underground fire lines:

(1) DCVA Inside the Building – from the municipal water main to within 5 feet of the building foundation; and
(2) DCVA Outside the Building – from the municipal water main to the downstream flange on the DCVA.

Wall-mounted PIVs and FDCs, as well as interior DCVAs and swing check valves will be inspected by the Fire Department under a separate permit.

Connections and fittings shall not be backfilled prior to inspection.

Pressure test – 225 psi for 2 hours, or 50 psi in excess of working pressures, whichever is greater, with no loss between the gate valve on the municipal water main and the floor flange.

Bag Flush – In the presence of the Fire Inspector, first charge the service line from a fire hydrant (Standard Detail W-9) through the FDC and flush out the floor flange. Next, flush the entire fire line out at the floor flange. The flush must be witnessed by the Fire Inspector. The fire line shall be flushed for a minimum of 15 minutes at scouring velocities unless otherwise directed by the Inspector. If debris is detected in the bag, additional test(s) shall be performed until the debris has been cleared from the line.

Disinfection and Purity Test – See Section 6.05 Q.

Inspection processes and approved materials may be different outside the North Bend city limits. New backflow assembly test reports from outside of North Bend city limits must be submitted to the Public Works Department.

E. Materials and Construction Requirements

(1) General

- Minimum depth of cover for all piping is 3 feet.
- Maximum depth of cover for all piping is 6 feet.

(2) Pipe

- Ductile Iron Pipe, Class 52, cement mortar lined or epoxy coated. See Section 6-04 B.
- Polyethylene encasement, 8 mil thickness minimum. See Section 6-04 C.
- All pipe shall have restrained joints. Field lock gaskets are not allowed.
- Casings are required under walls and footings. See Section 6-04 HH and 6-04 II.

(3) Fittings

- Ductile Iron, Class 52, compact type, cement mortar lined or epoxy coated. See Section 6-04 D.
- All fittings shall have restrained joints (See Section 6-04 Z) and concrete thrust blocking. Dual restraint is required on all changes in direction.
- “Field-Lok” gaskets as manufactured by V.S. Pipe and Foundry are not allowed.
- Cement concrete blocking is required at all changes in direction (Standard Details W-1, W-2, and W-3).
(4) Double Check Valve Assembly (DCVA)

Assembly must be installed in the orientation approved by the Washington State Department of Health. See Section 6-04 CC and Standard Detail W-45.

(5) Post Indicator Valve (PIV)

- Location – PIV shall be set on the fire service line between the easement/property line and the point of connection of the FDC on the fire service line.
- Clearance – 3 feet from obstructions, vegetation, fencing, structures, curb line, and edge of sidewalk; 5 feet from protective bollards.
- PIV – Listed for fire protection service, rated for 200 psi test pressure.
- Paint – Two coats of Rust-Oleum Regal Red over primer.

(6) Bollards

Bollards are required when the PIV or FDC may be subject to vehicular damage. Install 6-inch diameter minimum, Schedule 40 iron pipe or Class 52 DI pipe, filled with Class 3000 concrete.

- Height – equal to or higher than the height of the FDC or PIV.
- Embedment – 3-foot depth in a 15-inch-diameter concrete footing.
- Spacing – sufficient to protect the FDC or PIV spaced not more than 4 feet apart.
- Paint – Two coats of Rust-Oleum Regal Red over primer.

(7) Tamper Protection

- Tamper (supervisory) switches shall be installed on PIVs and DCVAs.
- Electrical conduits penetrating vault walls shall be neatly cored or drilled and the annular space grouted, inside and out, to prevent seepage.
- A vault drain (gravity to storm drain or sump pump – no dry wells) is required if tamper switches and wiring are not waterproof.
- Tamper protection will be inspected by Fire Department under the fire sprinkler permit (FB).
APPENDIX 6-1

WATER STANDARD DETAILS

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APPENDIX 6-2

WATER APPROVED MATERIALS LIST

The following manufacturers have been approved for use for water works construction. Where specific manufacturers are listed no other manufacturer may be used without prior approval by the Utility.

DUCTILE IRON PIPE
All manufacturers that meet the performance requirements specified under the material section of the Standards.

DUCTILE IRON FITTINGS
All manufacturers that meet the performance requirements specified under the material section of the Standards.

GALVANIZED IRON PIPE
All manufacturers that meet the performance requirements specified under the material section of the Standards.

JOINT RESTRAINT SYSTEMS
American Ductile Iron Pipe (Flex-Ring)
EBAA Iron (MEGALUG 1100 Series)
EBAA Iron (MEGAFLANGE 2100 Series)
Griffin Pipe Products Company (Snap-Lok, Bolt-Lok)
Pacific States Cast Iron Pipe Co, (Thrust Lock)
Romac (Grip Ring), 600 Series, RomaGrip
Romac (Bell Restraint) 611 with 316SS stainless steel nuts and bolts
Star National Products (Shackle Products) - All rods and hardware shall be 316SS stainless steel.
Cooper B-Line B3132– Heavy Duty Hot Dipped Galvanized pipe clamps (embedded in concrete blocks)
US Pipe (TR FLEX)
Uni-Flange Corporation Series 1400, or Series 1450 with 316SS stainless steel nuts and bolts

REPAIR CLAMPS
Romac Industries, Models SS1 and SS2

COUPLINGS
Romac (400 and 501 Series), Smith-Blair (Rockwell), Mueller MaxiFit, Mueller MaxiStep

CASING (COATING FOR STEEL CASING)
Tnemee Hi-Build Tneme-Tar, Series 46H-413

CASING SPACERS
Pipeline Seal and Insulator Co.:
   8” band, carbon steel with fusion-bonded coating, Model C8G-2
   12” band, carbon steel with fusion-bonded coating, Model C12G-2

Cascade Waterworks Mfg. Co.:
   Stainless Steel or hot-dip galvanized carbon steel Casing Spacers (catalog number depends on size)
Advance Products & Systems, Inc.:
- 8" band, stainless steel, Model SSI8
- 12" band, stainless steel, Model SSI12
- 8" band, carbon steel with fusion-bonded coating, Model SI8
- 12" band, carbon steel with fusion-bonded coating, Model SI12

CASING END SEALS
Pipeline Seal and Insulator Co.:
- Standard Pull-on (Model S)
- Custom Pull-on (Model C)

Cascade Waterworks Mfg. Co.:
- CCES End Seal

Advance Products & Systems, Inc.
- Molded End Seal, Model AM

GATE VALVES
All manufacturers that meet the performance requirements specified under the material section of the Standards.

PRV STATION
- PRESSURE REDUCING VALVES
  - CLA-VAL 90G-01ABCSKC } 6" With stainless steel trim on disk guide,
  - CLA-VAL 90G-01ACSKC } 2" seat, and cover bearing
- STRAINERS
  - Cla-Val X43H } 6" Mesh openings 0.059 inch
  - MUESSCO 11-BC } 2" Stainless steel perforated screen,
  - 1/16-inch diameter, 144 holes per square inch
- PRESSURE RELIEF VALVES
  - CLA-VAL 50G-01KC } 2" With stainless steel trim on disk guide,
  - seat, and cover bearing

INDIVIDUAL PRESSURE REDUCING VALVES (Residential)
Wilkins 600 with built-in bypass

INDIVIDUAL PRESSURE REDUCING VALVES (Commercial)
- PRESSURE REDUCING VALVES
  - Wilkins 600 HLR Series with built-in bypass
• PRESSURE RELIEF VALVES

CLA-VAL 55F

SERVICE SADDLES
1” tap: Ford FC101 (4” to 8” mains), epoxy-coated saddle with stainless steel strap
Smith-Blair 315, epoxy-coated saddle with stainless steel strap
A.Y. McDonald 4835A series, epoxy-coated saddle with stainless steel strap
Romac 101NS, nylon-coated saddle with stainless steel strap

1 1/2” & 2” tap: Ford FC202 and FCD202, epoxy-coated saddle with stainless steel strap(s)
Smith-Blair 317, epoxy-coated saddle with stainless steel strap
A.Y. McDonald 4845A or 4855A, epoxy-coated saddle with stainless steel strap(s)
Romac 202NS, nylon-coated saddle with stainless steel strap(s)

CORPORATION STOPS
1” size: Ford Ballcorp FB1000-4
Mueller No. P-15028
A.Y. McDonald 4701-22, 4701B-22

1 1/2” size: Ford Ballcorp FB400-6
Mueller Oriseal No. H-9968
A.Y. McDonald 4701B-22, or 3128B (with FIPT by pack joint coupling 4754-22)

2” size: Ford Ballcorp FB400-7
Mueller Oriseal No. H-9968
A.Y. McDonald 4701B-22, or 3128B (with FIPT by pack joint coupling 4754-22)

ANGLE METER VALVES
1 1/2” Irrigation: Ford FV13-666W
Mueller 1 1/2” H-14286
A.Y. McDonald 4604B

2” Irrigation: Ford FV13-777W
Mueller 2” H-14286
A.Y. McDonald 4604B

VALVE BOXES
Olympic Foundry Inc.: #VB045 Lid, Top and Base Section

RICH (VanRich Casting Corp.): Top section and lid #045 with RICH Standard Base

BUTTERFLY VALVES
All manufacturers that meet the performance requirements specified under the material section of the Standards.

AIR AND VACUUM RELEASE VALVES
APCO No. 143-C, Val-Matic No. 201C, Crispin UL10
FIRE HYDRANTS
M & H 929
Mueller Centurion (No other Mueller hydrants allowed)

BRASS WATER SERVICE FITTINGS AND VALVES
Approved manufacturers of brass fittings and valves up to 2 inch sizes include Ford, Mueller, James Jones Company (except James Jones meter setters, which are not approved), and A.Y. McDonald Manufacturing Co. The items supplied shall be equal to the models listed in these Standards.

METER SETTERS
1" x 1" (horizontal):
   Ford V74-12W
   Mueller 1" No. H-1404 x 12 with multi-purpose connection No. H-14222
   A.Y. McDonald 20-412WXDD44

1" x 1" (vertical):
   Ford V74-84 x 12W
   A.Y. McDonald 39-412WX2D44 (inlet coupling is MIPT by pack joint, 4753-22)

1-1/2" Domestic:
   Ford VBB76-12B-11-66
   A.Y. McDonald 20B612WWFF665 Vertical Meter Setter with Valve Rotated 90°

2" Domestic:
   Ford VBB87-12B-11-77
   A.Y. McDonald 20B712WWFF775 Vertical Meter Setter with Valve Rotated 90°

METER BOXES
1" x 1" Services:
   Carson Industries 1527-18 BCFXL Meter Box, and
   1527 Cover with Max View Reader Door
   (formerly Mid-States Plastics MSBCF 1324-18)
   Olympic Foundry SM30

1-1/2" and 2" Domestic:
   Carson Industries 1730-18 BCFXL Meter Box, and
   1730 Cover with Max View Reader Door
   (formerly Mid-States Plastics MSBCF 1730-18)
   Olympic Foundry SM301

1–1/2" and 2" Irrigation:
   Carson Industries 1730-18 BCFXL Meter Box, and
   1730 Cover with Max View Reader Door
   (formerly Mid-States Plastics MSBCF 1730-18)
   Olympic Foundry SM-30

2" Blow-Off Assembly:
   Olympic Foundry SM-30
   Carson Industries 1730-18 BCFXL Meter Box, and
   1730 Cover
   (formerly Mid-States Plastics MSBCF 1730-18)
1" Air and Vacuum Release: Carson Industries 1730-18 BCFXL Meter Box, and 1730 Cover (formerly Mid-States Plastics MSBCF 1730-18)

Pressure Reducing Valve Assembly: Carson Industries 1730-18 BCFXL Meter Box, and 1730 Cover (formerly Mid-States Plastics MSBCF 1730-18) Olympic Foundry SM-30

REDUCED PRESSURE BACKFLOW ASSEMBLIES
As approved on the most current Department of Health list for cross connection assemblies.

DOUBLE CHECK VALVE ASSEMBLIES
As approved on the most current Department of Health list for cross connection assemblies.

RESILIENT SEATED SHUT-OFF VALVES
All manufacturers that meet the performance requirements specified under the material section of the Standards.

NEOPRENE FOAM PAD (FOR CUSHION BETWEEN ADJACENT PIPES)
DOW Plastics Ethafoam™ 220

LADDER-UP
Bilco, Model LU-2 (steel safety post, hot dip galvanized)

VAULT HATCH/DOOR AND NON-SLIP TREATMENT
L.W. Products Company, Inc., Models HHD and HHS (rated for H-30 Vehicle Loading)
Hatches shall include recessed padlock hasp sized to accept City of North Bend padlocks.

Metal lids, hatches and access covers shall be constructed with a gray non-slip treatment by one of the approved products below:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>*COF</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW Products</td>
<td>.95</td>
<td>Thermion Arc Metal Spray</td>
</tr>
<tr>
<td>SlipNOT Metal Safety</td>
<td>.99</td>
<td>SlipNOT Grip Plate</td>
</tr>
<tr>
<td>Flooring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IKG Industries</td>
<td>&gt;.80</td>
<td>MEBAC 1 (Metal Bonded Anti-Slip Coatings)</td>
</tr>
<tr>
<td>Grating Pacific LLC</td>
<td>.92</td>
<td>ALGRIP Safety Floor Plates</td>
</tr>
</tbody>
</table>

*COF – coefficient of friction as determined by ASTM C1028-89

LINK SEAL
Vault wall pipe penetration seals shall be Link Seal Model C-316 (EDPM) with stainless steel hardware.

EXPANSION ANCHOR BOLTS INTO CONCRETE
Expansion anchor bolts shall be wedge style “Power Stud”, “Power Bolt” Hilti KB3-HPG in stainless steel or galvanized steel.
WATER STANDARD PLAN NOTES

Water General Notes:

1. All work shall conform to the 2015 City of North Bend Water Standards and the Developer Extension Agreement.

2. All pipe shall be ductile iron class 52 unless otherwise shown.

3. All pipe and fittings not to be disinfected in place shall be swabbed with 1 percent available chlorine solution prior to installation.

4. The new water main shall be connected to the existing system only after new main is pressure tested, flushed, disinfected, and satisfactory bacteriological sample results are obtained. See Standard Detail W-8.

5. After disinfecting the water main, dispose of chlorinated water by discharging to the nearest operating sanitary sewer.

6. Water main shutoff shall be coordinated with the Water Operations Division for preferred timing during flow control conditions. Water main shutoffs shall not be scheduled to take place on Fridays, or on the 5 days before nor 1 day after a City holiday, unless otherwise approved by the Utility.

7. The locations of all existing utilities shown hereon have been established by field survey or obtained from available records and should therefore be considered approximate only and not necessarily complete. It is the sole responsibility of the contractor to independently verify the accuracy of all utility locations shown, and to further discover and avoid any other utilities not shown hereon which may be affected by the implementation of this plan.

8. Deflect the water main above or below existing utilities as required to maintain 3 feet minimum cover and 12-inch minimum vertical clearance between utilities unless otherwise specified.

9. Wrap all ductile iron pipe and adjacent valves and fittings with 8-mil. polyethylene conforming to AWWA C105.

10. The water main shall be installed only after the roadway subgrade is backfilled, graded and compacted in cut and fill areas.

11. Trench backfill and surface restoration of existing asphalt pavement shall be as required by the right-of-way use permit.

12. All fittings shall be blocked per Standard Detail unless otherwise specified.

13. All services shall be 1” x 1” per Standard Detail unless otherwise specified. Adaptors for 3/4-inch meters shall be used where applicable.

14. When working with asbestos cement pipe, the Contractor is required to maintain workers’ exposure to asbestos material at or below the limit prescribed in WAC 296-62-07705.
15. Call 1-800-424-5555 48 hours before construction for utility locations.

16. Uniform plumbing code requires the installation of privately owned and operated pressure reducing valves where the operating pressure exceeds 80 psi.

17. The Contractor shall use a vacuum street sweeper to remove dust and debris from pavement areas as directed by the Engineer. Flushing of streets shall not be permitted without prior City approval.

18. Before commencement of trenching, the Contractor shall provide catch basin inserts for all catch basins that will receive runoff from the project site. The Contractor shall periodically inspect the condition of all inserts and replace as necessary.

19. Abandonment of existing water services shall be accomplished as follows:
   a. Remove existing service saddle from water main and replace with new stainless steel repair band, Romac SS2, Ford Service Saddle FC101, or approved equal (will not be required when water main is to be abandoned).
   b. Remove and dispose of existing setter and meter box.
   c. Cap or crimp (if copper) existing service line to be abandoned in place, each end.
   d. Return existing meter to City Utilities Inspector.

20. Where new utility line crosses below an existing AC main, the AC pipe shall be replaced with DI pipe to 3 feet past each side of the trench as shown on Standard Detail W-8. Wrap DI pipe and couplings with 8-mil polyethylene conforming to AWWA C105. Alternatively, where directed by the Engineer, the trench shall be backfilled with controlled density fill (CDF, aka flowable fill) from bottom of trench to spring line of the AC main.

21. Avoid crossing water or sewer mains at highly acute angles. The smallest angle measure between utilities should be 45 to 90 degrees.

22. Where water main crosses above or below sanitary sewer, one full length of water pipe shall be centered for maximum joint separation.

23. At points where existing thrust blocking is found, minimum clearance between the concrete blocking and other buried utilities or structures shall be 5 feet.

24. Workers must follow confined space regulations and procedures when entering or doing work in City-owned confined spaces. Completed Permit must be given to the Utilities inspector prior to entry.

25. Manholes, catch basins, and vaults are considered to be permit-required confined spaces. Entry into these spaces shall be in accordance with Chapter 296-809 WAC.

26. When work is to occur in easements, the Contractor shall notify the easement grantor and the City in writing a minimum of 48 hours in advance of beginning work (not including weekends or holidays). Failure to notify the grantor and the City will result in a Stop Work Order being posted.
until the matter is resolved to the satisfaction of the City. A written release from the easement grantor shall be furnished to the Utilities Inspector prior to permit sign-off.

27. The Contractor shall restore the Right-of-Way and existing public utility easement(s) after construction to a condition equal or better than condition prior to entry. Contractor shall furnish a signed release from all affected property owners after restoration has been completed.
### THRUST BLOCK - TABLE

<table>
<thead>
<tr>
<th>PIPE SIZE, IN</th>
<th>PRESSURE, PSI</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>250</td>
<td>2.2</td>
<td>1.6</td>
<td>1.2</td>
<td>0.6</td>
<td>0.3</td>
</tr>
<tr>
<td>6</td>
<td>250</td>
<td>5.0</td>
<td>3.5</td>
<td>2.7</td>
<td>1.4</td>
<td>0.7</td>
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<td>8</td>
<td>250</td>
<td>8.9</td>
<td>6.3</td>
<td>4.8</td>
<td>2.5</td>
<td>1.2</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>13.9</td>
<td>9.8</td>
<td>7.5</td>
<td>3.8</td>
<td>1.9</td>
</tr>
<tr>
<td>12</td>
<td>250</td>
<td>20.0</td>
<td>14.1</td>
<td>10.8</td>
<td>5.5</td>
<td>2.8</td>
</tr>
<tr>
<td>14</td>
<td>250</td>
<td>27.2</td>
<td>19.2</td>
<td>14.7</td>
<td>7.5</td>
<td>3.8</td>
</tr>
<tr>
<td>16</td>
<td>250</td>
<td>35.5</td>
<td>25.1</td>
<td>19.2</td>
<td>9.8</td>
<td>4.9</td>
</tr>
<tr>
<td>18</td>
<td>250</td>
<td>45.0</td>
<td>31.8</td>
<td>24.3</td>
<td>12.4</td>
<td>6.2</td>
</tr>
<tr>
<td>20</td>
<td>250</td>
<td>55.5</td>
<td>39.3</td>
<td>30.1</td>
<td>15.3</td>
<td>7.7</td>
</tr>
<tr>
<td>24</td>
<td>250</td>
<td>80.0</td>
<td>56.5</td>
<td>43.3</td>
<td>22.1</td>
<td>11.1</td>
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</tbody>
</table>

### SAFE BEARING LOADS IN LB./SQ. FT.

The safe bearing loads given in the following table are for horizontal thrusts when the depth of cover over the pipe exceeds 2 feet.

<table>
<thead>
<tr>
<th>SOIL</th>
<th>SAFE BEARING LOAD LB. PER SQ. FT.</th>
</tr>
</thead>
<tbody>
<tr>
<td>* MUCK, PEAT, ETC.</td>
<td>0</td>
</tr>
<tr>
<td>SOFT CLAY</td>
<td>1,000</td>
</tr>
<tr>
<td>SAND</td>
<td>2,000</td>
</tr>
<tr>
<td>SAND &amp; GRAVEL</td>
<td>3,000</td>
</tr>
<tr>
<td>CEMENTED WITH CLAY</td>
<td>4,000</td>
</tr>
<tr>
<td>HARD SHALE</td>
<td>10,000</td>
</tr>
</tbody>
</table>

*In muck or peat, all thrusts shall be restrained by piles or tie rods to solid foundations or by removal of muck or peat and replacement with ballast of sufficient stability to resist thrust.*

### NOTES:

1. SQUARE FEET OF CONCRETE THRUSTS – BLOCK AREA BASED ON SAFE BEARING LOAD OF 2000 POUNDS PER SQUARE FOOT.
2. AREAS MUST BE ADJUSTED FOR OTHER SIZE PIPE, PRESSURES & SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE & HAVE MINIMUM OF 1/4 SQUARE FOOT BEARING AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY & SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING JOINT.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.
6. FITTINGS AND BOLTS TO BE COVERED WITH NISQUEEN PRIOR TO CONCRETE PLACEMENT.
### Vertical Blocking

**For 11 1/4"–22 1/2"–30° Bends**

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>V-B</th>
<th>CU FT</th>
<th>A</th>
<th>D</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>11 1/4&quot;</td>
<td>8</td>
<td>2.0&quot;</td>
<td>3/4&quot;</td>
<td>1.5'</td>
</tr>
<tr>
<td></td>
<td>22 1/2&quot;</td>
<td>11</td>
<td>2.2'</td>
<td></td>
<td>2.0'</td>
</tr>
<tr>
<td></td>
<td>30°</td>
<td>17</td>
<td>2.6'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot;</td>
<td>11 1/4&quot;</td>
<td>11</td>
<td>2.2'</td>
<td>3/4&quot;</td>
<td>2.0'</td>
</tr>
<tr>
<td></td>
<td>22 1/2&quot;</td>
<td>25</td>
<td>2.9'</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>30°</td>
<td>41</td>
<td>3.5'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8&quot;</td>
<td>11 1/4&quot;</td>
<td>16</td>
<td>2.5'</td>
<td>3/4&quot;</td>
<td>2.0'</td>
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<tr>
<td></td>
<td>22 1/2&quot;</td>
<td>47</td>
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<tr>
<td></td>
<td>30°</td>
<td>70</td>
<td>4.1'</td>
<td>3/4&quot;</td>
<td>2.5'</td>
</tr>
<tr>
<td>12&quot;</td>
<td>11 1/4&quot;</td>
<td>32</td>
<td>3.2'</td>
<td>3/4&quot;</td>
<td>2.0'</td>
</tr>
<tr>
<td></td>
<td>22 1/2&quot;</td>
<td>88</td>
<td>4.5'</td>
<td>7/8&quot;</td>
<td>3.0'</td>
</tr>
<tr>
<td></td>
<td>30°</td>
<td>132</td>
<td>5.1'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16&quot;</td>
<td>11 1/4&quot;</td>
<td>70</td>
<td>4.1'</td>
<td>7/8&quot;</td>
<td>3.0'</td>
</tr>
<tr>
<td></td>
<td>22 1/2&quot;</td>
<td>184</td>
<td>5.7'</td>
<td>1 1/8&quot;</td>
<td>4.0'</td>
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<tr>
<td></td>
<td>30°</td>
<td>275</td>
<td>6.5'</td>
<td>1 1/4&quot;</td>
<td></td>
</tr>
<tr>
<td>20&quot;</td>
<td>11 1/4&quot;</td>
<td>91</td>
<td>4.5'</td>
<td>7/8&quot;</td>
<td>3.0'</td>
</tr>
<tr>
<td></td>
<td>22 1/2&quot;</td>
<td>225</td>
<td>6.1'</td>
<td>1 1/4&quot;</td>
<td>4.0'</td>
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<td>330</td>
<td>6.9'</td>
<td>1 3/8&quot;</td>
<td>4.5'</td>
</tr>
<tr>
<td>24&quot;</td>
<td>11 1/4&quot;</td>
<td>128</td>
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<td>1&quot;</td>
<td>3.5'</td>
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<td>22 1/2&quot;</td>
<td>320</td>
<td>6.8'</td>
<td>1 3/8&quot;</td>
<td>4.5'</td>
</tr>
<tr>
<td></td>
<td>30°</td>
<td>480</td>
<td>7.9'</td>
<td>1 5/8&quot;</td>
<td>5.5'</td>
</tr>
</tbody>
</table>

### Vertical Blocking

**For 11 1/4"–22 1/2", & 30° Bends**

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>V-B</th>
<th>CU FT</th>
<th>A</th>
<th>D</th>
<th>L</th>
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<tbody>
<tr>
<td>4&quot;</td>
<td>45°</td>
<td>30</td>
<td>3.1&quot;</td>
<td>3/4&quot;</td>
<td>2.0'</td>
</tr>
<tr>
<td>6&quot;</td>
<td></td>
<td>68</td>
<td>4.1'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8&quot;</td>
<td></td>
<td>123</td>
<td>5.0'</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12&quot;</td>
<td></td>
<td>232</td>
<td>6.1'</td>
<td>3/4&quot;</td>
<td>2.5'</td>
</tr>
<tr>
<td>16&quot;</td>
<td></td>
<td>478</td>
<td>7.8'</td>
<td>1 1/8&quot;</td>
<td>4.0'</td>
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<tr>
<td>20&quot;</td>
<td></td>
<td>560</td>
<td>8.2'</td>
<td>1 1/4&quot;</td>
<td></td>
</tr>
<tr>
<td>24&quot;</td>
<td></td>
<td>820</td>
<td>9.4'</td>
<td>1 3/8&quot;</td>
<td>4.5'</td>
</tr>
</tbody>
</table>

### Notes:
1. Concrete blocking based on 200 PSI pressure and 2500 PSI concrete.
2. Leave block open or sheeted 24 hours minimum.
3. Mega-lug fittings.
4. Fittings and bolts to be covered with Visqueen prior to concrete placement.
**NOTES:**

1. FOR PIPES 15-INCHES AND UNDER, TRENCH WIDTH = 1.0 x I.D. + 30-INCHES. FOR PIPES 18-INCHES AND OVER, TRENCH WIDTH = (1.5 x I.D.) + 18-INCHES. PER SECTION 2-09.4, "MEASUREMENT", OF THE WSDOT STANDARD SPECIFICATIONS.

2. EXCAVATIONS OVER 4' DEEP SHALL COMPLY WITH THE SAFETY STANDARD DISCRIBED IN CHAPTER 286-155 – PART N OF THE WAC.

3. SEE "BEDDING, BACKFILL AND COMPACTION" IN THE STANDARDS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
CITY OF NORTH BEND

MAXIMUM DISTANCE BETWEEN SPACERS SHALL BE 6 FEET ON CENTER.

SEAL BOTH ENDS OF CASING WITH A MANUFACTURED RUBBER SEALING DEVICE.

PLACE END SPACER MAXIMUM OF 12" FROM END OF CASING (TYP.)


STEEL PIPE CASING (MILL PIPE) OR DUCTILE IRON.

USE 2 STAINLESS STEEL HOSE CLAMPS TO SECURE RUBBER SEAL (1 ON CARRIER PIPE AND 1 ON CASING PIPE).

CARRIER PIPE

<table>
<thead>
<tr>
<th>CARRIER PIPE DIAMETER</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>10&quot;</th>
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<tr>
<td>CASING DIAMETER</td>
<td>10&quot;</td>
<td>12&quot;</td>
<td>14&quot;</td>
<td>16&quot;</td>
<td>20&quot;</td>
</tr>
<tr>
<td>STEEL CASING THICKNESS</td>
<td>0.25&quot;</td>
<td>0.25&quot;</td>
<td>0.25&quot;</td>
<td>0.25&quot;</td>
<td>0.25&quot;</td>
</tr>
<tr>
<td>SPACER BAND WIDTH</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
<td>8&quot;</td>
</tr>
</tbody>
</table>

NOTES:

1. RUNNER HEIGHT SHALL BE SIZED TO PROVIDE:
   A. MIN. 0.75" BETWEEN CARRIER PIPE BELL AND CASING PIPE WALL AT ALL TIMES.
   B. MIN. 1.00" CLEARANCE BETWEEN RUNNERS AND TOP OF CASING WALL AT ALL TIMES.
2. MINIMUM RUNNER WIDTH SHALL BE 2 INCHES.
3. STEEL CASING DIAMETERS ARE "OUTSIDE DIAMETER" FOR 16" AND LARGER.
4. SPACER BAND WIDTH SHALL BE 12" FOR CARRIER PIPES THAT ARE 36" DIAMETER OR GREATER.
5. FOR STEEL CASING, PROVIDE SHOP–APPLIED ANTI–CORROSIVE COATING ON CASING EXTERIOR CONFORMING TO AWWA 210. MINIMUM COATING 16 MILS DFT (DO NOT EXCEED MANUFACTURER’S MAXIMUM THICKNESS). PRODUCT SHALL BE EQUAL TO TNEMEC HI–BUILD TNEME–TAR SERIES 46H–413.

CITY OF NORTH BEND

CASING INSTALLATION

APPROVED:

MARK RIGOS, P.E.  MAY 2018  W–7

BY CITY  DATE
NOTES:

1. D.I. PIPE SHALL REST ON FIRM BEARING EARTH: SHORE TRENCH WALL UNDER WATERMAIN AS SHOWN, OR SUPPORT PIPE WITH PATIO BLOCKS (8"x16"x 2"). STACK BLOCKS AS REQUIRED TO REST ON FIRM BEARING SOIL.

2. THE CONTRACTOR IS REQUIRED TO MAINTAIN WORKERS' EXPOSURE TO ASBESTOS MATERIAL AT OR BELOW THE LIMIT PRESCRIBED IN WAC 296-62-07705.

3. ASBESTOS CEMENT PIPE SHALL BE CUT WITH A HAND-OPERATED CARBIDE BLADE CUTTER WITH CONTROLLED FLOWING WATER.

4. CONTAMINATED CLOTHING SHALL BE LEFT AND BURIED IN TRENCH, OR TRANSPORTED IN SEALED IMPERMEABLE BAGS & LABELED IN ACCORDANCE WITH WAC 296-62-07721. ASBESTOS CEMENT PIPE SHALL BE LEFT AND BURIED IN TRENCH.
CITY OF NORTH BEND

POURED THRUST BLOCK
PER DETAIL W-1

3 x ID

POURED THRUST BLOCK
PER DETAIL W-1

3 x ID

COMPACTED BEDDING GRAVEL
PER SECTION 9-03.12(3) OF
THE STANDARD SPECIFICATIONS

CONCRETE SUPPORT BLOCKS

CONCRETE SUPPORT BLOCKS

DUTILE IRON TAPPING TEE
MECHANICAL JOINT SLEEVE
INSTALLED ON ASPBESTOS CEMENT PIPE,
CAST IRON PIPE AND DUCTILE IRON PIPE.

STAINLESS STEEL OR STEEL
TAPPING TEE

STAINLESS STEEL TAPPING TEE
INSTALLED ON ASPBESTOS CEMENT PIPE,
CAST IRON PIPE AND DUCTILE IRON PIPE.

STEEL TAPPING TEE
INSTALLED ON DUCTILE IRON PIPE ONLY.

NOTES:
1. STAINLESS STEEL TAPPING TEES SHALL
HAVE FULL CIRCLE SEAL. BOLTS AND NUTS
SHALL BE STAINLESS STEEL.
2. STEEL TAPPING TEES SHALL BE EPOXY
COATED. BOLTS AND NUTS SHALL BE
COR-TEN, OR STAINLESS STEEL.
3. ALL TEES AND VALVES TO BE WATER
TESTED BEFORE TAP.
4. TAPPING TEE MAY BE SIZE ON SIZE. TAP
SHALL BE AT LEAST 2" SMALLER DIAMETER
THAN THE EXISTING MAIN.
5. TAPPING TEE NOT ALLOWED FOR MAIN
SMALLER THAN 3".
6. TAPPING TEES PERMITTED WITH CITY OF
NORTH BEND'S APPROVAL ONLY.

CITY OF NORTH BEND
TAPPING TEES

APPROVED:
MARK RIGOS, P.E.      MAY 2018
BY CITY
DATE

DWG. NO. W-10
NOTES:

1. ALL PARTS SHALL BE CAST OR DUCTILE IRON AND COATED WITH ASPHALTIC VARNISH.

2. OLYMPIC FOUNDRY INC: #VB045 LID, TOP AND BASE SECTION.

3. OLYMPIC FOUNDRY OR EQUIVALENT: TOP SECTION AND LID #045 WITH STANDARD BASE.

4. 12" ADJUSTING SLEEVE #044A.
VALVE OPERATING EXTENSION

EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE THAN THREE (3) FEET BELOW FINISHED GRADE. EXTENSIONS ARE TO BE A MINIMUM OF ONE (1) FOOT LONG. ONLY ONE EXTENSION TO BE USED PER VALVE.

NOTES:
1. ALL EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND HOT DIPPED GALVANIZED.
2. INSTALL EXTENSIONS PERPENDICULAR TO THE WATER LINE VERTICAL ALIGNMENT.
A. M&H 129 HYDRANT ONLY 1–5 1/4" M.V.O. HYDRANT WITH 2–2 1/2" N.S.T. AND 1–4 1/2" PUMPER PORTS WITH A 5" STORZ ADAPTER, CITY OF SEATTLE STANDARD THREAD—M.J. INLET, WITH LUGS, BRASS TO BRASS SUB-SEAT. FIRE HYDRANT TO BE PAINTED WITH TWO COATS OF "SAFETY YELLOW," RUSTOLEUM, KRYLON, WITH TWO COATS OF "SAFETY YELLOW," RUSTOLEUM, KRYLON, SHERWIN WILLIAMS, OR EQUAL. PUMPER PORT TO FACE STREET, OR AS DIRECTED BY THE FIRE DEPARTMENT.

B. 6" FLANGE OUTLET ON CAST OR DUCTILE IRON TEE.

C. 1– AUXILIARY GATE VALVE: 6" AWWA C509, RESILIENT SEAT, M.J.xFL. WITH LUGS.

D. 1–TWO-PIECE CAST IRON VALVE BOX EQUAL TO OLYMPIC FOUNDRY #045 WITH RECESS HANDLE Lid.

E. 1–6" DUCTILE IRON CLASS 52 CEMENT-LINED PIPE, LENGTH TO FIT, WHERE MORE THAN ONE LENGTH OF PIPE IS REQUIRED, CONNECT PIPES WITH MECHANICAL JOINT SLEEVE, RESTRAIN PIPE AND SLEEVE WITH MEGALUG RESTRainers, OR RESTRAIN PIPES WITH UNI-FLANGE SERIES 1400 JOINT RESTRainers.

F. RESTRAIN MECHANICAL JOINTS WITH MEGALUG RESTRainers.

G. 1/2 YARD WASHED DRAIN ROCK (3" TO 3/8"), MIN. 1' ABOVE BOOT FLANGE.

H. SURROUNDING DRAIN ROCK WITH FILTER FABRIC ('SIDES AND TOP).

I. CONC. BLOCKING PER STD DETAIL NO. W–1.

J. 3' MIN. RADIUS OF LEVEL GROUND AROUND OUTSIDE OF HYDRANT. 5' MIN CLEARANCE TO WALLS OR STRUCTURES.

K. INSTALL A BLUE, RAISED TYPE 2 PAVEMENT MARKER ON THE SAME SIDE OF ROAD AS THE HYDRANT, ONE FOOT OFF THE ROADWAY CENTERLINE, OR NEAREST LANE CHANNELIZATION.

L. BARREL EXTENSIONS PERMITTED WITH THE CITY OF NORTH BEND APPROVAL ONLY.
VALVE MARKER POST

FIRE HYDRANT GUARD POST

NOTES:

1. GUARD POST SHALL BE 6" CL.52 D.I. PIPE, 6' LONG, FILLED WITH CONCRETE. PAINT WITH TWO COATS OF "SAFETY YELLOW" RUSTOLEUM, KRYLON, SHERWIN WILLIAMS OR EQUAL.

2. CONCRETE VALVE MARKER POST SHALL BE EQUAL TO FOG TITE METER SEAL COMPANY. PAINT WITH TWO COATS OF RUST–OLEUM HIGH GLOSS YELLOW PAINT. PAINT DISTANCE FROM THE VALVE MARKER TO THE VALVE ON THE POST WITH BLACK ENAMEL PAINT.

3. VALVE MARKER POST TO BE USED FOR ALL MAINLINE VALVES OUTSIDE PAVED AREAS.

4. GUARD POSTS ONLY REQUIRED WHERE HYDRANT AND TRAFFIC ARE NOT PHYSICALLY SEPARATED (E.G. VERTICAL CURB)
1. All fittings to be brass or copper from water main to 1" air & vacuum assembly.
2. Tubing from main to air vac shall be continuously rising without intermediate high points.
3. Air & vacuum release valve assembly must be installed at highest point of line. If high point falls in a location where assembly cannot be installed, provide additional depth of line to create high point at a location where assembly can be installed.
4. Locate air & vacuum meter box outside of traffic areas, behind curb.
5. All fittings to be galvanized pipe above air vac, including the standpipe.
6. Galvanized pipe above grade to be painted with 2 coats of Rustoleum high gloss blue paint.

CITY OF NORTH BEND
1-INCH AIR & VACUUM RELEASE VALVE ASSEMBLY

APPROVED: MARK RIGOS, P.E. JULY 2020
BY CITY DATE

DWG. NO. W-16
NOTES:
1. SIZING OF VALVES WILL BE MODIFIED FOR OTHER SIZES OF PIPE.
2. GALVANIZED LADDER TO BE SECURED TO VAULT PER STD. DTL. NO. W-19.
3. ALL P.R.V.'s SHALL HAVE OPENING/CLOSING SPEED CONTROLS, EPOXY COATED BODY AND VALVE POSITION INDICATOR, CLA-VAL X101.
4. PILOT CONTROLS SHALL BE ON SIDE OF P.R.V. FACING INTERIOR OF VAULT TO PROVIDE EASY ACCESS.
5. ALL CLA-VAL P.R.V.'s AND PRESSURE RELIEF VALVES SHALL BE EQUIPPED W/Stainless Steel Trim (Seat, Stem & Cover Bearing).
6. SEAL ALL PIPE PENETRATIONS THROUGH VAULT W/ LINK SEAL MODULAR SEALS.
7. PRESSURE RELIEF DISCHARGE DOWNSPOUT SHALL DIRECT WATER TOWARDS CENTER OF INLET GRATE.
8. HATCH AND LADDER PER DETAIL W-19.
9. PROVIDE LADDER-UP EXTENSION, BILCO MODEL LU-2, OR EQUAL.
10. MINIMUM 2' OF LEVEL, UNOBSERVED AREA AROUND HATCHES.
11. PROVIDE CAST OR FIELD CORE DRILLED HOLES THROUGH VAULT WALLS FOR PIPE PENETRATIONS.

CITY OF NORTH BEND

MARK RIGOS, P.E. MAY 2018
BY CITY

W-17
NOTES:

1. SIZING OF VALVES WILL BE MODIFIED FOR OTHER SIZES OF PIPE.
2. GALVANIZED LADDER TO BE SECURED TO VAULT PER STD. DTL. NO. W-19.
3. ALL P.R.V.s SHALL HAVE OPENING/CLOSING SPEED CONTROLS, EPOXY COATED BODY AND VALVE POSITION INDICATOR, CLA-VAL X101.
4. PILOT CONTROLS SHALL BE ON SIDE OF P.R.V. FACING INTERIOR OF VAULT TO PROVIDE EASY ACCESS.
5. SEAL ALL PIPE PENETRATIONS THROUGH VAULT W/ LINK SEAL MODULAR SEALS.
NOTES:

1. LADDER TO BE SECURED TO VAULT WALL AT 3 LOCATIONS, ONE AT THE TOP, MIDDLE AND BOTTOM.
2. ALL LADDER PARTS TO BE GALVANIZED CONFORMING TO ASTM A 123.
3. LOCATE PRESSURE RELIEF DRAIN OUTSIDE PEDESTRIAN AND TRAFFIC AREAS.
4. ACCESS HATCH SHALL BE LOCKING ALUMINUM LW PRODUCTS HHD 48"x60" DOUBLE DOOR MODEL RATED FOR H-30 LOADING WITH SLIP RESISTANT TREATMENT PER SECTION W4-17 OF THE ENGINEERING STANDARDS. HATCHES SHALL INCLUDE RECESSED PADLOCK HASP SIZED TO ACCEPT CITY OF BELLEVUE WATER DIVISION PADLOCKS (CONTACT LW PRODUCTS).
5. LADDER-UP ATTACHMENT REQUIRED ON ALL VAULT LADDERS. BILCO MODEL LU-2, OR EQUAL.
6. MANHOLE LID IS OPTIONAL ONLY WHEN STATION COVER IS LOCATED IN TRAFFIC.
7. DRAIN HATCH GUTTER DRAIN TO EXISTING CB OR DAYLIGHT.
HORIZONTAL METER SETTER INSTALLATION

A] EPOXY OR NYLON COATED HIGH TENSILE D.I. SERVICE SADDLE W/ STAINLESS STEEL STRAP AND EPOXY COATED BOSS, 1" MIP THREAD ROMAC TYPE 202 OR EQUAL, SIZE AS REQUIRED.

B] BALL CORPORATION STOP 1" MIP THREAD INLET BY 1" PACK JOINT OUTLET FOR PE PIPE FORD FB1101-4-NL BA

C] 1" HDPE 200 PSI SIDR 7.

D] COUPLING, 1" MALE IRON PIPE THREAD BY 3/4" OR 1" PACK JOINT (COMPRESSION FITTING) FOR POLYETHYLENE PIPE (IF APPROVED FOR USE)

E] 3/4" OR 1" METER SETTER WITH 3/4" OR 1" PACK JOINT PER PEP INLET (UNLESS APPROVED OTHERWISE) AND SINGLE CHECK VALVE WITH PADLOCK WINGS, OR EQUAL.

F] METER BOX, EQUAL TO FOGTITE B-10 (1") OR B-9 1/2 (3/4"), HINGED READER LID AND 2" TR/PL HOLE.

G] 12 AWG BLUE TRACER WIRE.

NOTES:
1. SERVICE LINE SHALL BE PERPENDICULAR TO THE WATERMAIN, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. APPROVED BACKFLOW PREVENTION MUST BE INSTALLED WITH IRRIGATION SERVICE PER D.O.H. REQUIREMENTS. IRRIGATION SYSTEM SHALL NOT BE PUT INTO SERVICE UNTIL THE BACKFLOW PREVENTION DEVICE IS APPROVED BY A CITY WATER QUALITY TECHNICIAN.
3. METER WILL BE SUPPLIED AND INSTALLED BY THE CITY.
HORIZONTAL METER SETTER INSTALLATION

A  EPOXY OR NYLON COATED HIGH TENSILE D.I. SERVICE SADDLE W/ STAINLESS STEEL STRAP AND EPOXY COATED BOSS, 1–1/2" MIP THREAD TAP, ROMAC TYPE 202 OR EQUAL, SIZE AS REQUIRED.

B  BALL CORPORATION STOP 1–1/2" MIP THREAD INLET BY 1–1/2" PACK JOINT OUTLET FOR PE PIPE FORD FB1101–6–IDR7–NL BALL CORP. OR EQUAL.

C  1” HDPE 200 PSI SIDI 7.

D  COUPLING, 1–1/2" MALE IRON PIPE THREAD BY 1–1/2" PACK JOINT (COMPRESSION FITTING) FOR POLYETHYLENE PIPE (IF APPROVED FOR USE). FORD PACK JOINT COUPLING C86–66–IDR7–NL, OR EQUAL.

E  1” METER SETTER WITH 1–1/2” PACK JOINT PER PEP INLET (UNLESS APPROVED OTHERWISE) AND SINGLE CHECK VALVE FORD V9B74–12W–18–XX–XX–NL STYLE, OR EQUAL.

F  METER BOX, EQUAL TO FOGTITE B–10 (1”) OR B–9 1/2 (3/4”), HINGED READER LID AND 2” TR/PL HOLE.

G  12 AWG BLUE TRACER WIRE.

NOTES:
1. SERVICE LINE SHALL BE PERPENDICULAR TO THE WATERMAIN, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
2. APPROVED BACKFLOW PREVENTION MUST BE INSTALLED WITH IRRIGATION SERVICE PER D.O.H. REQUIREMENTS. IRRIGATION SYSTEM SHALL NOT BE PUT INTO SERVICE UNTIL THE BACKFLOW PREVENTION DEVICE IS APPROVED BY A CITY WATER QUALITY TECHNICIAN.
3. METER WILL BE SUPPLIED AND INSTALLED BY THE CITY.
A. Epoxy or nylon coated high tensile D.I. service saddle w/ double stainless steel strap and epoxy coated boss, 1 1/2" MIP TAPER (IP) TAP, FORD FCD202, OR EQUAL, SIZE AS REQUIRED.

B. Ball Corporation stop, 1 1/2" MIP TAPER (IP) INLET BY 1 1/2" MALE IRON PIPE THREAD OUTLET WITH BALL VALVE (OR EQUAL LOW-FRICTION VALVE), FORD FB1101-6-IDR7-NL BALL CORP, OR EQUAL.

C. 1 1/2" MIP THREAD TO 1 1/2" PACK JOINT FOR PE PIPE, FORD C-86-66-IDR7-NL, OR EQUAL.

D. 1 1/2" SDR 7 HDPE.

E. 1 1/2" 90 DEGREE BEND, BRASS, FEMALE IRON PIPE THREAD BY FEMALE IRON PIPE THREAD.

F. 1 1/2" NIPPLE, BRASS, M.I.P.T. X M.I.P.T., LENGTH AS REQUIRED TO MEET PROPER GRADE.

G. 1 1/2" BRASS AND COPPER METER SETTER WITH LOW BYPASS:
   --FLANGED BALL METER VALVE ON INLET AND OUTLET
   --BALL VALVE ON BYPASS
   --PADLOCK WINGS ON ALL VALVES
   --VERTICAL INLET AND OUTLET, F.I.P.T.
   --BUSHING INCLUDED ON OUTLET
   --OMIT BYPASS WHEN USED FOR IRRIGATION ONLY
   FORD VBB76-12B-11-66 WITH LOW BYPASS OR A.Y. MCDONALD 20B612WVFF665 VERTICAL METER SETTER WITH VALVE ROTATED 90 DEG., OR EQUAL.

H. RIGID METER SPREADER TO BE INSTALLED IN METER SETTER BY CONTRACTOR.

I. METER BOX, EQUAL TO:
   FOGTITE NO. 2 METER BOX (2 SECTIONS REQ'D): CONCRETE LID WITH DROP IN INSPECTION PLATE FOR LANDSCAPED AREAS, STEEL DIAMOND PLATE COVER IN TRAFFIC AREAS.

NOTES:
1. Service line shall be perpendicular to the watermain, unless otherwise approved by the engineer.
2. Bypass will be locked off by construction inspector when meter spreader is installed.
3. Meter will be supplied and installed by the City.
A Ductile iron tee with 4" branch, fl with (3) gate valves (on new mains), tapping tee with 4" branch, fl with (1) gate valve (on existing mains).
B 4" gate valve, fl.
C 4" reducing companion flange with 1 1/2" tap.
D 1 1/2" MIP thread to 1 1/2" pack joint for PE pipe, Ford C-86-66-1DR7-NL, or equal.
E 1 1/2" SIDR 7 HDPE.
F 1 1/2" 90 degree bend, brass, female iron pipe thread by female iron pipe thread.
G 1 1/2" nipple, brass, M.I.P.T. x M.I.P.T., length as required to meet proper grade.
H 1 1/2" brass and copper meter setter with low bypass:
   - flanged ball meter valve on inlet and outlet
   - ball valve on bypass
   - padlock wings on all valves
   - vertical inlet and outlet, F.I.P.T.
   - bushing included on outlet
   Ford VBB76-126-11-66 with low bypass or A.Y. Mcdonald 20B612WWFF665 vertical meter setter
   with valve rotated 90 deg., or equal.
I Rigid meter spreader to be installed in meter setter by contractor.
J Meter box, equal to:
   Fogtite No. 2 meter box (2 sections req’d): concrete lid with drop in inspection plate for
   landscaped areas, steel diamond plate cover in traffic areas.
K Two piece cast iron valve box to fit, equal to Olympic foundry #045 - with recessed
   handle lid. See detail W-11.

NOTES:
1. Service line shall be perpendicular to the watermain, unless otherwise approved by the engineer.
2. Bypass will be locked off by construction inspector when meter spreader is installed.
3. Meter will be supplied and installed by the city.

CITY OF NORTH BEND
1 1/2" DOMESTIC WATER SERVICE
(COMMERCIAL AND MULTI-FAMILY)

APPROVED:            DWG. NO.
MARK RIGOS, P.E.      W-26
MAY 2018            DATE
BY CITY
A. Epoxy or nylon coated high tensile D.I. service saddle w/ double stainless steel strap and epoxy coated boss, 2" MIP taper (IP) tap, Ford FCD202, or equal, size as required.

B. Ball corporation stop, 2" MIP taper (IP) inlet by 2" male iron pipe thread outlet with ball valve (or equal low-friction valve), Ford FB1101-7-IDR7-NL ball corp, or equal.

C. Coupling, 2" MIP thread to pack joint for PE pipe, Ford C-86-77-IDR7-NL, or equal.

D. 2" SDR 7 HDPE.

E. 2" 90 degree bend, brass, female iron pipe thread by female iron pipe thread.

F. 2" nipple, brass, M.I.P.T. x M.I.P.T., length as required to meet proper grade.

G. 2" brass and copper meter setter with low bypass:
   - Flanged ball meter valve on inlet and outlet
   - Ball valve on bypass
   - Padlock wings on all valves
   - Vertical inlet and outlet, F.I.P.T.
   - Bushing included on outlet
   - Omit bypass when used for irrigation only
   - Ford VBB77-12B-11-77 with low bypass or A.Y. mcdonald 20B712WIFF775 vertical meter setter with valve rotated 90 deg., or equal.

H. Rigid meter spreader to be installed in meter setter by contractor.

I. Meter box, equal to:
   FOGTITE No. 2 meter box (2 sections req'd): concrete lid with drop in inspection plate for landscaped areas, steel diamond plate cover in traffic areas.

NOTES:
1. Service line shall be perpendicular to the watermain, unless otherwise approved by the engineer.
2. Bypass will be locked off by construction inspector when meter spreader is installed.
3. Meter will be supplied and installed by the city.
A. Ductile iron tee with 4" branch, fl with (3) gate valves (on new mains), tapping tee with 4" branch, fl with (1) gate valve (on existing mains).

B. 4" gate valve, fl.

C. 4" reducing companion flange with 1 1/2" tap.

D. 2" MIP thread to 2" pack joint for PE pipe, Ford C-86–77–IDR7–NL, or equal.

E. 2" SI DR 7 HDPE.

F. 2" 90 degree bend, brass, female iron pipe thread by female iron pipe thread.

G. 2" nipple, brass, M.I.P.T. x M.I.P.T., length as required to meet proper grade.

H. 2" brass and copper meter setter with low bypass:
   - flanged ball meter valve on inlet and outlet
   - ball valve on bypass
   - padlock wings on all valves
   - vertical inlet and outlet, F.I.P.T.
   - bushing included on outlet
   - Ford VBB77–12B–11–77 with low bypass or A.Y. Mcdonald 20B712W4FF775 vertical meter setter with valve rotated 90 deg., or equal.

I. Rigid meter spreader to be installed in meter setter by contractor.

J. Meter box, equal to:
   - Fogtite No. 2 meter box (2 sections req'd): Concrete lid with drop in inspection plate for landscaped areas, steel diamond plate cover in traffic areas.

K. Two piece cast iron valve box to fit, equal to Olympic Foundry #045 – with recessed handle lid. See detail W–11.

NOTES:
1. Service line shall be perpendicular to the watermain, unless otherwise approved by the engineer.
2. Bypass will be locked off by construction inspector when meter spreader is installed.
3. Meter will be supplied and installed by the city.

CITY OF NORTH BEND
2" DOMESTIC WATER SERVICE
(COMMERCIAL AND MULTI–FAMILY)

APPROVED: ____________________  MAY 2018
MARK RIGOS, P.E.  DWG. NO. W–30
BY CITY  DATE
MATERIALS LIST — (ALL SIZES ARE SAME AS METER UNLESS OTHERWISE LISTED)

1. M-CPLG. TO FIT, EQUAL TO ROMAC 501
2. 1" X 3" REDUCER, P.E.W.M.J. (FOR 3" SERVICE ONLY)
3. 1-TEE, M.J. X FL.
4. 1-GATE VALVE, F.L. X M.J. (W/VALVE BOX & COVER)
5. 3-D.I. PIPE, P.E., LENGTH AS REQUIRED
6. 2-90° BEND, M.J.
7. 2-D.I. PIPE, P.E.X.Fl., LENGTH AS REQUIRED.
8. 1-EPoxy OR NYLON COATED SERVICE SADDLE, FORD FC202 (TAP POINTED UP AT 12 O'CLOCK) OR EQUAL, 1-CORPORATION STOP, AWWA TAPER(C/C) X M.I.P.T., FORD FB400-7, WITH 2" F.I.P.T. X 2 1/2" M.N.S.T. ADAPTOR AND CAP (2 1/2" F.N.S.T.)
9. 3-GATE VALVE, FL.
10. SENSUS Omni C2 METER W/ INTERNAL STRAINER, W/ELECTRONIC RESOLUTION (100'S OF CUBIC FEET FOR 3 METER, 500 CUBIC FEET FOR 4-6 METER REGISTER).
11. 1-D.I. ADAPTOR FL. X P.E., LENGTH TO FIT.
12. 2-FLAVCPLG. ADAPTOR, EQUAL TO SMITH-BLAR 912.
13. Welded FL. RESTRAINT OR MAC-LUG MID-SPAN RESTRAINT AND THRUST BLOCK ADJACENT TO VAULT SEE STANDARD DETAIL W-56.
14. PRECAST CONC. VAULT BY UTILITY VAULT CO. (SEE TABLE FOR MODEL NO.) W/ 2 DIAMOND PLATE DOORS RATED FOR H-30 LOADING.
15. 1-2" BRASS NIPPLE, M.I.P.T.X.M.I.P.T., 6" LONG, CONNECT TO TEST PORT OF COMPUND METER. BALL VALVE FORD FB1000 FIPXFIPT SIZED TO FIT OMNI C2 FLUSHPORT.
16. 2" M.I.P.T. X 2 1/2" MNST ADAPTOR AND CAP (2 1/2" FNST).
17. TR/PL SENSOR (TO MOUNT IN VAULT ACCESS DOOR).
18. 2-ADJUSTABLE STANCHION BOLTED TO FLOOR.
19. 1-GALVANIZED STEEL LADDER TO BE ATTACHED TO VAULT. THE FIRST STEP SHALL BE MIN. 8" BELOW TOP OF COVER.
21. 1-TEE, FL.

NOTES:
1. ALL MATERIALS, INCLUDING METER SHALL BE FURNISHED BY CONTRACTOR.
2. ALL PIPE & FITTINGS 3" & LARGER SHALL BE CEMENT LINED DUCTILE IRON, CLASS 52 MINIMUM.
3. TEE WITH (3) GATE VALVES REQUIRED AT DISTRIBUTION MAIN.
4. VAULTS SHALL NOT BE INSTALLED IN AREAS W/VEHICULAR TRAFFIC.
5. IN CENTRAL BUSINESS DISTRICT, 3" THROUGH 6" METERS SHALL CONNECT TO WATER MAIN W/8" PIPE (SUBSTITUTE 8"SERVICE REDUCER M.J.XPE, AT UPSTREAM SIDE OF ITEM 3).
6. VAULT COVER SHALL INCLUDE 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HHD-36X72) DOORS SHALL HAVE SLIP RESISTANT TREATMENT PER SECTION WA-17 OF THE ENGINEERING STANDARDS. DOORS SHALL BE CAST IN COVER WITH 8" SPECIAL OFFSET FROM VAULT WALL, AS SHOWN. COVER TO READ “WATER”.
7. PROVIDE 2 1/4" CLEARANCE BETWEEN VAULT FLOOR & BOTTOM OF COMPOUND METER. WHERE ELEVATION OF VAULT FLOOR IS TOO LOW TO DRAY TO DAYLIGHT OR STORM SYSTEM, THIS CLEARANCE CAN BE REDUCED TO A MINIMUM OF 12", IF SUBSTITUTION OF A SHORTER VAULT ALLOWS FLOOR TO DRAIN TO DAYLIGHT OR STORM SYSTEM (APPROVED BY THE UTILITY ON A CASE BY CASE BASIS ONLY). SUBSTITUTE VAULTS ARE AS FOLLOWS:
   3" 575-LA WITH 57TL-2-332P COVER (WITH SPECIAL OFFSET + LW ALUM. HATCH)
   4" 675-WA WITH 675-TW-2-332P COVER (WITH SPECIAL OFFSET + LW ALUM. HATCH)
8. PROVIDE 2 1/4" DIAM. OPENING IN ALUMINUM DOOR FOR TR/PL SENSOR.
9. LADDER TO BE BOLTED TO VAULT FLOOR AND TO VAULT WALL AT THREE LOCATIONS. RUNGS SHALL BE PLACED AT 12" ON CENTER.
10. ALL FITTINGS OUTSIDE VAULT SHALL INCLUDE THRUST BLOCKING AND JOINT RESTRAINT DEVICES.
11. PIPE, FITTINGS, VALVES OUTSIDE VAULT SHALL BE 4" FOR 3" SERVICE INSTALLATION.
12. MINIMUM 2' OF LEVEL, UNOBSERVED AREA AROUND HATCHES.
MATERIALS LIST— (ALL SIZES ARE SAME AS METER UNLESS OTHERWISE LISTED)

1. 2—MECH. CPLG. TO FIT, EQUAL TO ROMAC 501 (4"x3" REDUCER, M.I. FOR 3" METER INSTALLATION ON UPSTREAM SIDE OF VAULT).
2. 2—GATE VALVE, FLANGE.
3. 1—SENSUS OMNI C2 METER WITH INTERNAL STRAINER WITH ELECTRONIC REGISTER RESOLUTION (100'S OF CUBIC FEET FOR 3" METER, 500 CUBIC FEET FOR 4—6" METER) REGISTER.
4. 1—D.I. ADPT., FL.xPE. LENGTH TO FIT.
5. 1—CPLG. ADPT., FL. ROMAC — FCA 501.
6. PRECAST CONC. VAULT BY UTILITY VAULT CO. (577—LA.) WITH TWO DIAMOND PLATE DOORS RATED FOR H—30 LOADING W/ 8" OFFSET, SEE NOTE 7.
7. WELDED FL. RESTRAINT OR MEGALUG MID—SPAN RESTRAINT AND THRUST BLOCK ADJACENT TO VAULT STANDARD DETAIL W—56.
9. 1—GALVANIZED STEEL LADDER TO BE ATTACHED TO VAULT. SEE NOTE 11.
10. TR/PL SENSOR (TO MOUNT IN VAULT ACCESS DOOR).

NOTES:
1. ALL MATERIALS INCLUDING METER SHALL BE FURNISHED BY CONTRACTOR.
2. ALL PIPE & FITTINGS 3" AND LARGER SHALL BE CEMENT LINED DUCTILE IRON, CLASS 52 MINIMUM.
3. PIPING FROM MAIN TO VAULT SHALL BE 4" ON 3" METER INSTALLATION. TEE WITH VALVE ON EXISTING MAIN REQUIRED.
4. VAULTS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.
5. TEST PORT NOZZLE SHALL BE DIRECTED UPWARD UNLESS OTHERWISE DIRECTED, (SEE ITEM 8).
6. IN CENTRAL BUSINESS DISTRICT, CONNECT TO WATER MAIN WITH 8" PIPE. SUBSTITUTE 8" X SERVICE SIZE REDUCER, M.I. FOR ITEM 1 ON UPSTREAM SIDE OF VAULT.
VAULT COVER SHALL INCLUDE 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HHD—48"x48") WITH SLIP RESISTANT TREATMENT PER SECTION W4—17 OF THE ENGINEERING STANDARDS. DOORS SHALL BE CAST IN COVER WITH 8" SPECIAL OFFSET FROM VAULT WALL, AS SHOWN. COVER TO READ "WATER".
1" ROUND WASHED GRAVEL BY 6" DEEP ON BOTTOM OF BOX
2 ENCLOSE 2" & SMALLER D.C.V.A. IN TWO METER BOXES STACKED ON TOP OF EACH OTHER OR, OVERSIZED BOX. MUST HAVE REMOVABLE COVER. BOXES TO BE LOCATED IN SIDEWALK AND AREAS WITH VEHICULAR TRAFFIC SHALL BE METAL, EQUAL TO OLYMPIC FOUNDRY SM30. BOXES IN OTHER NON-TRAFFIC AREAS TO BE CARSON INDUSTRIES 1730–18 BCFXL METER BOX WITH 1730 COVER.
3 MAXIMUM OF 6" DISTANCE BETWEEN UNDERSIDE OF LID AND HIGHEST POINT OF DEVICE.
4 (2) UNIONS.
5 WHEN TEST-COCKS ARE FACING SIDEWAYS THERE MUST BE A 6" MIN. CLEARANCE BETWEEN THEM AND SIDE OF BOX.
6 PER PLUMBING CODE REQUIREMENT, IRRIGATION SYSTEMS MUST HAVE SHUT OFF INSTALLED AS SHOWN. FEMALE FITTINGS ARE PROHIBITED IN CONJUNCTION WITH METALLIC MALE FITTINGS.

NOTES:
1. ALL INSTALLATIONS MUST MEET MINIMUM STANDARDS OF THE UNIFORM PLUMBING CODE AND WSDOH APPROVED INSTALLATIONS LIST.
2. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
NOTE:
1. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
NOTES:
① LINE-SIZED WA STATE APPROVED DOUBLE CHECK VALVE ASSEMBLY. THE D.C.V.A. INCLUDES (2) RESILIENT-SEATED SHUT-OFF VALVES AND (4) RESILIENT-SEATED TEST-COCKS.
② THE D.C.V.A. MUST BE INSTALLED PER WSDOH APPROVED INSTALLATIONS LIST.
③ (2) SUPPORTS (EITHER WALL OR FLOOR) ONE ON EACH SIDE OF ASSEMBLY, MUST FIRMLY ANCHOR DEVICE. REQUIRED FOR 2 1/2" AND LARGER LINE SIZE.
④ MUST PROVIDE A MINIMUM OF 6" SIDE CLEARANCE BETWEEN D.C.V.A. AND WALL OR OBSTRUCTION.
⑤ CLEARANCE BETWEEN FLOOR AND ASSEMBLY MUST BE A MINIMUM OF 12" AND A MAXIMUM OF 5'.
⑥ TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
⑦ PROTECT AGAINST FREEZING OR DAMAGE. USE HEAT-TAPE IF AREA IS SUBJECT TO FREEZING.
⑧ INTERIOR WATER APPURTENANCES MUST CONFORM TO UNIFORM PLUMBING CODE REQUIREMENTS.
⑨ FDC TO BE LOCATED DOWNSTREAM OF DCVA (COMMERCIAL ONLY).
**NOTES:**

1. **PIV MUST BE LOCATED ON THE FIRELINE BETWEEN THE R/W LINE AND THE FDC.**

2. **FIRE MARSHALL SHALL APPROVE FDC LOCATION IF LESS THAN 50FT. FROM STRUCTURE.**

3. **TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNually THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.**
CITY OF NORTH BEND

OUTSIDE DCVA INSTALLATION FOR 3" AND LARGER COMMERCIAL FIRE SPRINKLER SYSTEMS

NOTES:
1. WHERE POSSIBLE, PIV SHALL BE LOCATED ON THE FIRELINE BETWEEN THE R/W LINE AND THE FDC.
2. FIRE MARSHALL SHALL APPROVE FDC LOCATION.
3. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.

CITY OF NORTH BEND

APPROVED: MARK RIGOS, P.E. MAY 2018

BY CITY

DWG. NO. W-40
CITY OF NORTH BEND

<table>
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<tr>
<th>METRIC SIZE</th>
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<td>1&quot; BRASS MINIMUM</td>
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<td>1&quot; BRASS MINIMUM</td>
<td>644-LA</td>
<td>64-2/332P</td>
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* COVER MODIFIED PER NOTE 9.

NOTES:

1. SIZE OF MAIN D.C.V.A. AND FITTINGS SHALL EQUAL SERVICE LINE SIZE. BY-PASS D.C.V.A. AND FITTINGS SHALL BE SIZED A MINIMUM OF 1".

2. MINIMUM CLEARANCES:
   - 12" BETWEEN EACH D.C.V.A.
   - 12" BETWEEN D.C.V.A. AND SIDE OF VAULT.
   - 12" BETWEEN D.C.V.A. AND VAULT FLOOR.
   - 24" SOIL COVER OVER SERVICE LINE.

3. INSTALL PLUGS IN ALL TEST COCKS.

4. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.

5. BRASS FITTINGS.

6. WHERE ACCESS OPENING DOES NOT EXPOSE SHUT OFF VALVES, MIN. 18" CLEARANCE SHALL BE REQUIRED BETWEEN TOP OF VALVE AND UNDERSIDE OF VAULT COVER.

1. COPPER TUBING, TYPE K.
2. COUPLING, MALE IRON PIPE THREAD BY PACK JOINT (COMPRESSION FITTING) FOR COPPER, MUELLER NO. H-15428 OR EQUAL.
3. BRASS TEE, MAIN LINE SIZE X 1", FEMALE IRON PIPE THREAD.
4. BRASS NIPPLE, LENGTH TO FIT, 1", MALE IRON PIPE THREAD.
5. BRASS NIPPLE, MAIN LINE SIZE, LENGTH TO FIT, MALE IRON PIPE THREAD.
6. BRASS ELBOW, 1", FEMALE IRON PIPE THREAD.
7. BRASS UNION, MALE X FEMALE IRON PIPE THREAD.
8. WASHINGTON STATE APPROVED DOUBLE CHECK VALVE ASSEMBLY. MUST BE INSTALLED IN APPROVED ORIENTATION.
9. CONCRETE VAULT WITH 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HHD-36"X72"). RATED FOR H-30 LOADING, WITH SLIP RESISTANT TREATMENT PER SECTION W4-17 OF THE ENGINEERING STANDARDS. COVER TO READ "WATER". SIZE VAULT TO PROVIDE MINIMUM CLEARANCES LISTED IN NOTE 2.
10. DRAIN, SLOPE TO DAYLIGHT OR STORM DRAINAGE SYSTEM (DO NOT CONNECT TO SANITARY SEWER). WIRE MESH RODENT SCREEN OVER DRAIN.
11. VAULT PENETRATION THRUST BLOCK SEE STANDARD DETAIL W-56.

* TYPICAL, EACH SIDE OF D.C.V.A.
NOTES:
1. SIZE OF MAIN D.C.V.A. AND FITTINGS SHALL EQUAL SERVICE LINE SIZE BYPASS. D.C.V.A. AND FITTINGS SHALL BE SIZED, AT MINIMUM, AS SHOWN IN CHART.
2. MINIMUM CLEARANCES:
   - 36" BETWEEN EACH D.C.V.A.
   - 12" BETWEEN D.C.V.A. AND SIDE OF VAULT.
   - 12" BETWEEN D.C.V.A. AND VAULT FLOOR.
   - 24" SOIL COVER OVER SERVICE LINE.
3. INSTALL PLUGS IN ALL TEST COCKS.
4. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
5. PROVIDE LADDER AND LADDER-UP PER DETAIL W-19.
6. WHERE ACCESS OPENING DOES NOT EXPOSE SHUT OFF VALVES MIN. 18" CLEARANCE SHALL BE REQUIRED BETWEEN TOP OF VALVE AND UNDERSIDE OF VAULT COVER.
7. MINIMUM 2' OF LEVEL, UNOBSERVED AREA AROUND HATCHES.
8. LOCATE HATCH PER DETAIL W-17.

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<th>METER SIZE</th>
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</tr>
<tr>
<td>6&quot;</td>
<td>6&quot;</td>
<td>2&quot; COPPER MINIMUM</td>
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</table>

1. FLEX COUPLING, ROCKWELL 441 OR EQUAL.
2. D.I. PIPE, P.E. X FL., LENGTH TO FIT.
3. STATE APPROVED INTERNALLY LOADED DOUBLE CHECK VALVE ASSEMBLY, COMPLETE WITH (2) FULL FLOW BALL VALVE SHUT-OFF VALVES AND TEST COCKS.
4. DOUBLE STRAP SERVICE SADDLE, ROMAC 2025 WITH IPS TAP, OR EQUAL.
5. COUPLING, OUTSIDE IRON PIPE THREAD TO COPPER COMPRESSION CONNECTION, MUELLER H-15425, OR EQUAL.
6. COPPER TUBING, TYPE K.
7. 1/4 BEND COUPLING, COPPER TO COPPER, MUELLER H-15526, OR EQUAL.
8. COUPLING, COPPER COMPRESSION CONNECTION BY FEMALE IRON PIPE THREAD, MUELLER H-15451, OR EQUAL.
9. CONCRETE VAULT WITH 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HHD-36"X72"), RATED FOR H-30 LOADING, WITH SLIP RESISTANT TREATMENT PER SECTION W4-17 OF THE ENGINEERING STANDARDS. COVER TO READ "WATER". SIZE VAULT TO PROVIDE MINIMUM CLEARANCES LISTED IN NOTE 2.
10. ADJUSTABLE PIPE STANCHIONS, BOLTED TO FLOOR.
11. DRAIN, SLOPE TO DAYLIGHT OR STORM DRAINAGE SYSTEM (DO NOT CONNECT TO SANITARY SEWER). WIRE MESH RODENT SCREEN OVER DRAIN.
12. VAULT PENETRATION THRUST BLOCK SEE STANDARD DETAIL W-56.

* TYPICAL, EACH SIDE OF D.C.V.A.

CITY OF NORTH BEND
3" TO 6" DOMESTIC DOUBLE CHECK
VALVE ASSEMBLY FOR CONTINUOUS
SUPPLY
(OUTSIDE INSTALLATION)

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE

DWG. NO. W-42
NOTES:
1. SIZE OF MAIN D.C.V.A. AND FITTINGS SHALL EQUAL SERVICE LINE SIZE. BYPASS D.C.V.A. AND FITTINGS SHALL BE SIZED A MINIMUM OF 4".
2. MINIMUM CLEARANCES:
   - 36" BETWEEN EACH D.C.V.A.
   - 12" BETWEEN D.C.V.A. AND SIDE OF VAULT.
   - 12" BETWEEN D.C.V.A. AND VAULT FLOOR.
   - 24" SOIL COVER OVER SERVICE LINE.
3. INSTALL PLUGS IN ALL TEST COCKS.
4. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
5. PROVIDE LADDER AND LADDER-UP PER DETAIL W-19.
6. WHERE ACCESS OPENING DOES NOT EXPOSE SHUT OFF VALVES MIN. 24" CLEARANCE SHALL BE REQUIRED BETWEEN TOP OF VALVE AND UNDERSIDE OF VAULT COVER.
7. ALL FITTINGS OUTSIDE VAULT SHALL INCLUDE THRUST BLOCKING AND JOINT RESTRAINT DEVICES.
8. MINIMUM 2' OF LEVEL, UNOBSSTRUCTED AREA AROUND HATCHES.
9. LOCATE HATCH PER DETAIL W-17.

1. TEE, MJ, MAINLINE SIZE BY 4" MINIMUM BRANCH. *
2. D.I. PIPE, P.E. X FL., LENGTH TO FIT. *
3. STATE APPROVED INTERNALLY LOADED DOUBLE CHECK VALVE ASSEMBLY, COMPLETE WITH (2) FULL FLOW BALL VALVE SHUT-OFF VALVES AND TEST COCKS.
4. 4" MINIMUM DI PIPE, PE x PE, LENGTH TO FIT. *
5. 4" MINIMUM 90° BEND, MJ. *
6. 4" MINIMUM DI PIPE, PE x FL., LENGTH TO FIT. *
7. CONCRETE VAULT WITH 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HHD-36"x72"), RATED FOR H-30 LOADING, WITH SLIP RESISTANT TREATMENT PER SECTION W4-17 OF THE ENGINEERING STANDARDS. COVER TO READ "WATER". SIZE VAULT TO PROVIDE MINIMUM CLEARANCES LISTED IN NOTE 2.
8. ADJUSTABLE PIPE STANCHIONS, BOLTED TO FLOOR.
9. DRAIN, SLOPE TO DAYLIGHT OR STORM DRAINAGE SYSTEM (DO NOT CONNECT TO SANITARY SEWER). WIRE MESH RODENT SCREEN OVER DRAIN.
10. GATE VALVE, F.L.xM.J. (WITH VALVE BOX AND COVER).
11. VAULT PENETRATION THRUST BLOCK SEE STANDARD DETAIL W-56 FOR BOTH MAINLINE AND BYPASS.
   * TYPICAL, EACH SIDE OF D.C.V.A.
STATE APPROVED DOUBLE CHECK VALVE ASSEMBLY, COMPLETE WITH (2) RESILIENT SEATED O.S.&Y. VALVES AND (4) RESILIENT SEATED TEST COCKS. EACH VALVE SHALL BE MARKED WITH MODEL NUMBER WITH DESIGNATION OF RESILIENT SEAT; SUCH AS "RS" OR "R", WHICH MUST BE CAST, MOLDED, OR AFFIXED ONTO THE BODY OR BonNET OF THE VALVE. ALL FERROUS BODIED VALVES SHALL BE COATED WITH A MINIMUM OF 4 MLS. OF EPOXY OR EQUIVALENT POLYMERIZED COATING.

ONE GALVANIZED STEEL LADDER TO BE SECURED TO VAULT WITH LADDER-UP (BILCO MODEL LU-2). LADDER TO BE ATTACHED TO VAULT PER STANDARD DETAIL W-19.

CONCRETE VAULT WITH 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HHD-36”x72”), RATED FOR H-30 LOADING WITH SLIP RESISTANT TREATMENT PER SECTION W4-17 OF THE ENGINEERING STANDARDS. COVER TO READ "WATER". VAULT SHALL BE EQUAL TO UTILITY VAULT CO. MODEL LISTED IN TABLE BELOW.

WATER TIGHT GROUT. RESTRAIN INLET/OUTLET PIPE WITH MEGALUG MID-SPAN RESTRAINT AND THRUST BLOCK ADJACENT TO VAULT SEE STANDARD DETAIL W-56.

DRAIN, SLOPE TO DAYLIGHT OR STORM DRAINAGE SYSTEM, MINIMUM DIAMETER 6”.

TWO ADJUSTABLE PIPE STANCHIONS, BOLTED TO FLOOR.

ACCESS TO BE CENTERED OVER ASSEMBLY.

CL. 52 D.I., PEXFL WITH RETAINER GLANDS.

INSTALL WIRE MESH RODENT SCREEN OVER DRAIN OUTLET.

NOTES:
1. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
2. TEE AND CATE VALVES REQUIRED ON MAIN.
3. ALL CLEARANCES SHOWN ARE MINIMUM.
4. VAULTS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.
5. IN CENTRAL BUSINESS DISTRICT, 3” THROUGH 6” ASSEMBLIES SHALL CONNECT TO WATER MAIN WITH 8” PIPE.
6. MINIMUM 2’ OF LEVEL, UNOBSTRUCTED AREA AROUND HATCHES.

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* COVER MODIFIED PER NOTE⑤.

CITY OF NORTH BEND
3” TO 10” DOUBLE CHECK VALVE ASSEMBLY FOR DOMESTIC AND IRRIGATION SERVICES (OUTSIDE INSTALLATION)

APPROVED: MARK RIGOS, P.E. MAY 2018

BY CITY

DATE W-44
STATE APPROVED DOUBLE CHECK VALVE ASSEMBLY, COMPLETE WITH (2) RESILIENT SEATED O.S.&Y. VALVES AND (4) RESILIENT SEATED TEST COCKS, AND BRASS OR COPPER DETECTOR BY-PASS. FACE TEST COCKS TOWARD CENTER OF VAULT AND ACCESSIBLE.

STATE APPROVED 3/4" DOUBLE CHECK VALVE ASSEMBLY, COMPLETE WITH (2) RESILIENT SEATED BALL VALVES AND (4) RESILIENT SEATED TEST COCKS. FACE TEST COCKS TOWARD CENTER OF VAULT.

EACH VALVE SHALL BE MARKED WITH MODEL NUMBER WITH DESIGNATION OF RESILIENT SEAT; SUCH AS "RS" OR "TR", WHICH MUST BE CAST, MOLDED, OR AFFIXED ONTO THE BODY OR BONNET OF THE VALVE. ALL FERROUS BODIED VALVES SHALL BE COATED WITH A MINIMUM OF 4MLS. OF EPOXY OR EQUIVALENT POLYMERIZED COATING.

3/4" METER (CUBIC FEET READING)

MEGAFLANGE

ONE GALVANIZED STEEL LADDER TO BE SECURED TO VAULT WITH LADDER-UP (BILCO MODEL LU-2). LADDER TO BE ATTACHED TO VAULT PER STANDARD DETAIL W-19.

CONCRETE VAULT WITH 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HHD-42"x72"), RATED FOR H-30 LOADING, OFFSET WITH SLIP RESISTANT TREATMENT PER SECTION W4-17 OF THE ENGINEERING STANDARDS. COVER TO READ "WATER". VAULT SHALL BE EQUIL TO UTILITY VAULT CO. MODEL LISTED IN THE TABLE BELOW.

WATER TIGHT GROUT. RESTRAIN INLET/OUTLET PIPE WITH MEGALUG MID-SPAN RESTRAINT AND THRUST BLOCK ADJACENT TO VAULT SEE STANDARD DETAIL W-56.

DRAIN, SLOPE TO DAYLIGHT OR STORM DRAINAGE SYSTEM, MINIMUM DIAMETER 6".

TWO ADJUSTABLE PIPE STANCHIONS, BOLTED TO FLOOR.

ALL PLUMBING FOR BY-PASS TO BE COPPER AND BRASS.

ACCESS TO BE CENTERED OVER ASSEMBLY.

CL. 52 D.I., PEXFL WITH RETAINER GLANDS.

INSTALL WIRE MESH RODENT SCREEN OVER DRAIN OUTLET.

2 VALVE SUPERVISORY SWITCHES, SPDT, PER FIRE DEPARTMENT REQUIREMENTS (1 SWITCH PER VALVE).

NOTES:
1. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
2. TEE & GATE VALVES REQUIRED ON MAIN.
3. WHEN DOUBLE CHECK VALVE ASSEMBLY IS USED IN SAME LINE WITH DOMESTIC BUILDING METER, METERED DETECTOR BYPASS SHALL BE OMITTED.
4. ALL CLEARANCES SHOWN ARE MINIMUM.
5. VAULTS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.
6. IN CENTRAL BUSINESS DISTRICT, 3" THROUGH 6" ASSEMBLIES SHALL CONNECT TO WATER MAIN WITH 8" PIPE.
7. FDC TO BE LOCATED DOWNSTREAM OF DCVA. FDC LINE & CHECK VALVE MAY BE ROUTED INSIDE THE DCVA VAULT PROVIDED ALL PROVISIONS IN STANDARD DETAIL W-48 ARE MET.
8. MINIMUM 2' OF LEVEL, UNOBSCECTED AREA
9. SECURE A VALVE MARKER, PER DETAIL W-55, TO EACH GATE VALVE HANDLE.
10. LONGER VALVE ASSEMBLIES MAY REQUIRE A LARGER VAULT TO MEET THE REQUIRED CLEARANCES. SUBMIT FOR APPROVAL.

CITY OF NORTH BEND
3" TO 10" DOUBLE CHECK DETECTOR ASSEMBLY FOR FIRE SPRINKLER SYSTEMS (OUTSIDE INSTALLATION)

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE W-45
NOTICE: OUTSIDE-INSTALLED RPBA IS NOT ALLOWED IN BURIED VAULTS. DEVELOPER SHALL PROVIDE UTILITIES WITH A DESIGN FOR AN ABOVE-GROUND ENCLOSURE THAT DRAINS TO DAY LIGHT FOR APPROVAL. CLEARANCES SHOWN BELOW SHALL APPLY TO THE ENCLOSURE.

1. STATE APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY, COMPLETE WITH (2) RESILIENT SEATED O.S.&Y. GATE VALVES (2" AND SMALLER: FULL FLOW RESILIENT SEATED BALL VALVES) AND (4) RESILIENT SEATED TEST COCKS.
3. 4" CONC. (2,000 PSI) SLAB EXTENDED 6" BEYOND ENCLOSURE (ALL DIRECTIONS). REINFORCED W/ 6x6 W2.9xW2.9 WWP.
4. APPROVED ENCLOSURE. CONTRACTOR TO VERIFY REQUIRED SIZE.
5. 90° BEND, FL (2" AND SMALLER: BRASS, F.I. P.T.).
6. ENCLOSURE DRAIN, SIZED IN ACCORDANCE WITH PNWS—AWWA CROSS CONNECTION CONTROL MANUAL (7TH ADDITION)
   FIGURE 6-1.
7. TWO ADJUSTABLE PIPE STANCHIONS, BOLTED TO SLAB.
8. PVC SLEEVE THROUGH SLAB.
9. CL. 52 D.I. PE-FL.
10. EACH VALVE SHALL BE MARKED WITH MODEL NUMBER WITH DESIGNATION OF RESILIENT SEAT: SUCH AS "RS" OR "R", WHICH MUST BE CAST, MOLDED, OR AFFIXED ONTO THE BODY OR BONNET OF THE VALVE. ALL FERROUS BODIED VALVES SHALL BE COATED WITH A MINIMUM OF 4MLS. OF EPOXY OR EQUIVALENT POLYMERIZED COATING.
11. 90° BEND, RESTRAINED JOINT (2" AND SMALLER: BRASS, COMPRESSION x F.I.P.T.).

NOTES:
1. PROVIDE ELECTRICAL HEAT TAPE FREEZE PROTECTION.
2. WHEN THE REDUCED PRESSURE ASSEMBLY IS LOCATED INSIDE A BUILDING A SIZED DRAIN LINE SHALL BE PROVIDED FOR RELIEF PORT. THERE MUST BE AN APPROVED AIR GAP BETWEEN THE RELIEF PORT AND DRAIN.
3. ALLOW 12"+ NOMINAL DIAMETER OF ASSEMBLY CLEARANCE BELOW RELIEF PORT FOR REPAIR. ALSO PROVIDE 12" MIN. AIR GAP CLEARANCE FROM TOP OF DRAIN PIPE.
4. REDUCED PRESSURE BACKFLOW ASSEMBLY WILL BE ALLOWED TO BE INSTALLED IN VAULTS ONLY IN CASES WHERE NO OTHER MEANS OF INSTALLATION IS AVAILABLE AND AS APPROVED BY A CITY OF BELLEVUE WATER QUALITY TECHNICIAN.
5. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
6. ALL CLEARANCES SHOWN ARE MINIMUM.
7. ENCLOSURES SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.
8. TEE AND GATE VALVES REQUIRED ON MAIN.
9. IN CENTRAL BUSINESS DISTRICT, 3" THROUGH 6" ASSEMBLIES SHALL CONNECT TO WATER MAIN WITH 8" PIPE.
10. MINIMUM 2' OF LEVEL, UNOBSCTURED AREA AROUND ENCLOSURES.
11. RPBA INSTALLATIONS THAT DIFFER FROM THE STANDARD DETAIL MUST BE APPROVED BY THE CROSS CONNECTION PROGRAM ADMINISTRATOR (425-452-5208) AND WILL BE REVIEWED ON A CASE-BY-CASE BASIS TO ENSURE THEY MEET CURRENT MINIMUM REQUIREMENTS FOR INSTALLATION AND FREEZE PROTECTION.

CITY OF NORTH BEND
REDUCED PRESSURE BACKFLOW ASSEMBLY FOR DOMESTIC AND IRRIGATION SERVICE (OUTSIDE INSTALLATION)

APPROVED:

MARK RIGOS, P.E. MAY 2018

BY CITY DATE

DWG. NO. W-46A
NOTICE: OUTSIDE-INSTALLED RPBA IS NOT ALLOWED IN BURIED VAULTS. DEVELOPER SHALL PROVIDE UTILITIES WITH A DESIGN FOR AN ABOVE-GROUND ENCLOSURE THAT DRAINS TO DAY LIGHT FOR APPROVAL. THE BURIED VAULT DETAIL SHOWN BELOW IS ONLY ALLOWED WHEN GIVEN SPECIAL APPROVAL BY THE CITY.

STATE APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY, COMPLETE WITH (2) RESILIENT SEATED O.S.&Y. GATE VALVES AND (4) RESILIENT SEATED TEST COCKS. FACE TEST COCKS TOWARD CENTER OF VAULT AND ACCESSIBLE.

MEGAFLANGE

ONE GALVANIZED STEEL LADDER TO BE SECURED TO VAULT WITH LADDER—UP (BILCO MODEL LU—2). LADDER TO BE ATTACHED TO VAULT PER STANDARD DETAIL W—19.

CONCRETE VAULT WITH 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HH2—36”x72”) RATED FOR H—30 LOADING WITH SLIP RESISTANT TREATMENT PER SECTION W4—17 OF THE ENGINEERING STANDARDS. COVER TO READ “WATER”. VAULT SHALL BE EQUAL TO UTILITY VAULT CO. MODEL LISTED IN THE TABLE BELOW.

WATER TIGHT GROUT. RESTRAIN INLET/OUTLET PIPE WITH MEGALUG MID-SPAN RESTRAINT AND THRUST BLOCK ADJACENT TO VAULT SEE STANDARD DETAIL W—56.

DRAIN, SLOPE TO DAYLIGHT WITH BORE SIGHTED DAYLIGHT DRAIN CLEARLY VISIBLE END TO END WITH STRAIGHT PIPE, SIZED TO MEET FLOW REQUIREMENTS OF RPBA RELIEF VENT.

TWO ADJUSTABLE PIPE STANCHIONS, BOLTED TO FLOOR.

ACCESS TO BE CENTERED OVER ASSEMBLY.

CL. 52 D.I., PEXFL WITH RETAINER GLANDS.

EACH VALVE SHALL BE MARKED WITH MODEL NUMBER WITH DESIGNATION OF RESILIENT SEAT. SUCH AS “RS” OR “R”, WHICH MUST BE CAST, MOLDED, OR SIZED INTO THE BODY OR BONNET OF THE VALVE. ALL FERROUS BODIED VALVES SHALL BE COATED WITH A MINIMUM OF 4 MILS. OF EPOXY OR EQUIVALENT POLYMERIZED COATING.

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<tr>
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<tbody>
<tr>
<td>3”*</td>
<td>4’-3” 4’-8” 3’-11”</td>
<td>575—LA 64—2—332P</td>
<td>577—LA 57TL—2—332P</td>
</tr>
<tr>
<td>4”*</td>
<td>4’-3” 5’-3” 4’-7”</td>
<td>4484—LA 4484—TL2—332P</td>
<td>687—LA 687—TL2—332P</td>
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<tr>
<td>6”*</td>
<td>6’-4” 6’-6” 5’-5”</td>
<td>687—LA 687—TL2—332P</td>
<td>5106—2X 5106—TL3—332P</td>
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<tr>
<td>8”*</td>
<td>8’-8” 8’-8” 8’-0”</td>
<td>5106—2X 5106—TL3—332P</td>
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* COVER MODIFIED PER NOTE 4.

NOTES:
1. DAYLIGHT DRAIN MUST BE ABLE TO BE LINE SIGHTED, INSTALLED ABOVE MAXIMUM FLOOD LEVEL, AND BE ABLE TO HANDLE THE VOLUME OF WATER THAT CAN BE DISCHARGED FROM THE RELIEF VALVE PORT.
2. WHEN THE REDUCED PRESSURE ASSEMBLY IS LOCATED INSIDE A BUILDING A SIZED DRAIN LINE SHALL BE PROVIDED FOR RELIEF PORT. THERE MUST BE AN APPROVED AIR GAP BETWEEN THE RELIEF PORT AND DRAIN.
3. ALLOW 12IN NOMINAL DIAMETER OF ASSEMBLY CLEARANCE BELOW RELIEF PORT FOR REPAIR. ALSO PROVIDE 12” MIN. AIR GAP CLEARANCE FROM TOP OF DRAIN PIPE.
4. REDUCED PRESSURE BACKFLOW ASSEMBLY WILL BE ALLOWED TO BE INSTALLED IN VAULTS ONLY IN CASES WHERE NO OTHER MEANS OF INSTALLATION IS AVAILABLE AND AS APPROVED BY A CITY OF BELLEVUE WATER QUALITY TECHNICIAN.
5. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
6. MINIMUM CLEARANCE BETWEEN ASSEMBLY AND WALL ON LADDER SIDE OF VAULT IS 24”. MINIMUM CLEARANCE FROM OPPOSITE WALL IS 12”. ALL CLEARANCES SHOWN ARE MINIMUM.
7. VAULTS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.
8. TEE AND GATE VALVES REQUIRED ON MAIN.
9. IN CENTRAL BUSINESS DISTRICT, 3” THROUGH 6” ASSEMBLIES SHALL CONNECT TO WATER MAIN WITH 8” PIPE.
10. MINIMUM 2’ OF LEVEL, UNOBSTRUCTED AREA AROUND HATCHES.
11. RPBA INSTALLATIONS THAT DIFFER FROM THE STANDARD DETAIL MUST BE APPROVED BY THE CROSS CONNECTION PROGRAM ADMINISTRATOR (425—452—5208) AND WILL BE REVIEWED ON A CASE-BY-CASE BASIS TO ENSURE THEY MEET CURRENT MINIMUM REQUIREMENTS FOR INSTALLATION AND FREEZE PROTECTION.

CITY OF NORTH BEND
3” TO 10” REDUCED PRESSURE BACKFLOW ASSEMBLY FOR DOMESTIC AND IRRIGATION SERVICE (BURIED VAULT INSTALLATION)

APPROVED: MARK RIGOS, P.E. MAY 2018

BY CITY DATE W—46B
NOTICE: OUTSIDE-INSTALLED RPBA IS NOT ALLOWED IN BURIED VAULTS. DEVELOPER SHALL PROVIDE UTILITIES WITH A DESIGN FOR AN ABOVE-GROUND ENCLOSURE THAT DRAINS TO DAY LIGHT FOR APPROVAL. CLEARANCES SHOWN BELOW SHALL APPLY TO THE ENCLOSURE. THE BURIED VAULT DETAIL SHOWN BELOW IS ONLY ALLOWED WHEN GIVEN SPECIAL APPROVAL BY THE CITY.

1. STATE APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY, COMPLETE WITH (2) RESILIENT SEATED O.S.&Y. GATE VALVES AND (4) RESILIENT SEATED TEST COCKS, AND BRASS OR COPPER DETECTOR BY-PASS, CENTERED IN VAULT.
2. STATE APPROVED 3/4" REDUCED PRESSURE ASSEMBLY ON BY-PASS, COMPLETE WITH (2) RESILIENT SEATED BALL VALVES AND (4) RESILIENT SEATED TEST COCKS.
3. EACH VALVE SHALL BE MARKED WITH MODEL NUMBER WITH DESIGNATION OF RESILIENT SEAT: SUCH AS "RS" OR "R", WHICH MUST BE CAST, MOLDED, OR AFFIXED ONTO THE BODY OR BONNET OF THE VALVE. ALL FERROUS BODIED VALVES SHALL BE COATED WITH A MIN. OF 4mils d.f.t. EPOXY OR EQUIVALENT POLYMERIZED COATING.
4. 3/4" METER (CUBIC FEET READING) AS REQUIRED.
5. MEGAFLANGE
6. ONE GALVANIZED STEEL LADDER TO BE SECURED TO VAULT WITH LADDER-UP (BILCO MODEL LU-2).
7. LADDER TO BE ATTACHED TO VAULT PER STANDARD DETAIL W-19.
8. CONCRETE VAULT WITH 2 LOCKING ALUMINUM LW HATCH DOORS (PART NO. HHD-42*72") RATED FOR H-30 LOADING WITH SLIP RESISTANT TREATMENT PER SECTION W-17 OF THE ENGINEERING STANDARDS. COVER TO READ "WATER". VAULT SHALL BE EQUAL TO UTILITY VAULT CO. MODEL LISTED IN TABLE BELOW.
9. WATER TIGHT GROUT. RESTRAIN INLET/OUTLET PIPE WITH MEGALUG MID-SPAN RESTRAINT AND THRUST BLOCK ADJACENT TO VAULT SEE STANDARD DETAIL W-56.
10. DRAIN, SLOPE TO DAYLIGHT WITH BORE SIGHTED DAYLIGHT DRAIN CLEARLY VISIBLE END TO END WITH STRAIGHT PIPE, SIZED TO MEET FLOW REQUIREMENTS OF RPBA RELIEF VENT. INSTALL WIRE MESH RODENT SCREEN OVER DRAIN OUTLET.
11. TWO ADJUSTABLE PIPE STANCHIONS, BOLTED TO FLOOR.
12. CL. 52 D.I., PE6FL WITH RETAINER GLANDS.
13. VALVE SUPERVISING SWITCH, SPOT, PER FIRE DEPARTMENT REQUIREMENTS.

NOTES:
1. DAYLIGHT DRAIN MUST BE ABLE TO BE LINE SIGHTED, INSTALLED ABOVE MAXIMUM FLOOD LEVEL, AND BE ABLE TO HANDLE THE VOLUME OF WATER THAT CAN BE DISCHARGED FROM THE RELIEF VALVE PORT.
2. WHEN THE REDUCED PRESSURE ASSEMBLY IS LOCATED INSIDE A BUILDING A SIZED DRAIN LINE SHALL BE PROVIDED FOR RELIEF PORT. THERE MUST BE AN APPROVED AIR GAP BETWEEN THE RELIEF PORT AND DRAIN.
3. ALLOW 12" NOMINAL DIAMETER OF ASSEMBLY CLEARANCE BELOW RELIEF PORT FOR REPAIR. ALSO PROVIDE 12MIN. AIR GAP CLEARANCE FROM TOP OF DRAIN PIPE.
4. REDUCED PRESSURE BACKFLOW ASSEMBLY WILL BE ALLOWED TO BE INSTALLED IN VAULTS ONLY IN CASES WHERE NO OTHER MEANS OF INSTALLATION IS AVAILABLE AND AS APPROVED BY A CITY OF BELLEVUE WATER QUALITY TECHNICIAN.
5. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
6. MINIMUM CLEARANCE BETWEEN ASSEMBLY AND WALL ON LADDER SIDE OF VAULT IS 24". MINIMUM CLEARANCE FROM OPPOSITE WALL 12". ALL CLEARANCES SHOWN ARE MINIMUM.
7. VAULTS SHALL NOT BE INSTALLED IN AREAS WITH VEHICULAR TRAFFIC.
8. TEE AND GATE VALVES REQUIRED ON MAIN.
9. IN CENTRAL BUSINESS DISTRICT, 3" THROUGH 6" ASSEMBLIES SHALL CONNECT TO WATER MAIN WITH 8" PIPE.
10. FDC TO BE LOCATED DOWNSTREAM OF RPBA. FDC LINE AND CHECK VALVE MAY BE ROUTED INSIDE THE RPBA VAULT PROVIDED ALL PROVISIONS OF STANDARD DETAIL W-48 ARE MET.
11. MINIMUM 2' OF LEVEL, UNOBSTRUCTED AREA AROUND HATCHES.
12. SECURE A VALVE MARKER, PER DETAIL W-55, TO EACH GATE VALVE HANDL.
13. LONGER VAULT ASSEMBLIES MAY REQUIRE A LARGER VAULT TO MEET THE REQUIRED CLEARANCES. SUBMIT FOR APPROVAL.
14. RPBA INSTALLATIONS THAT DIFFER FROM THE STANDARD DETAIL MUST BE APPROVED BY THE CROSS CONNECTION PROGRAM ADMINISTRATOR (425-452-5208) AND WILL BE REVIEWED ON A CASE-BY-CASE BASIS TO ENSURE THEY MEET CURRENT MINIMUM REQUIREMENTS FOR INSTALLATION AND FREEZE PROTECTION.

CITY OF NORTH BEND
3" TO 10" REDUCED PRESSURE DETECTOR ASSEMBLY FOR FIRE SPRINKLER SYSTEMS (OUTSIDE INSTALLATION)

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE W-47
LINE-SIZED WA STATE APPROVED REDUCED PRESSURE BACKFLOW ASSEMBLY, COMPLETE WITH
(2) RESILIENT SEATED O.S.&Y. GATE VALVES AND (4) RESILIENT SEATED TEST COCKS.

TWO ADJUSTABLE PIPE STANCHIONS, BOLTED TO FLOOR. REQUIRED FOR ASSEMBLIES 2 1/2" AND LARGER.

NOTES:
1. WHEN THE REDUCED PRESSURE ASSEMBLY IS LOCATED INSIDE A BUILDING A SIZED DRAIN LINE SHALL BE
   PROVIDED FOR RELIEF PORT. THERE MUST BE AN APPROVED AIR GAP BETWEEN THE RELIEF PORT AND DRAIN.
2. ALLOW 12"+ NOMINAL DIAMETER OF ASSEMBLY CLEARANCE BELOW RELIEF PORT FOR REPAIR. MAXIMUM
   CLEARANCE OF 5".
3. ASSEMBLY TO BE MAINTAINED BY OWNER AND ANNUAL CERTIFICATION REQUIRED.
4. SIDE CLEARANCES TO WALL:
   VALVE SIZE 2" AND LESS: 6" CLEARANCE.
   VALVE SIZE 3" AND ABOVE: 12" CLEARANCE.
5. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY
   TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.
6. PROTECT AGAINST FREEZING OR DAMAGE. USE HEAT-TAPE IF AREA IS SUBJECT TO FREEZING.
7. INTERIOR WATER APPURTENANCES MUST CONFORM TO UNIFORM PLUMBING CODE REQUIREMENTS.
8. DEVICE TO BE INSTALLED NO HIGHER THAN 5 FEET ABOVE FLOOR.
9. RPBA INSTALLATIONS THAT DIFFER FROM THE STANDARD DETAIL MUST BE APPROVED BY THE CROSS CONNECTION
   PROGRAM ADMINISTRATOR (425-452-5208) AND WILL BE REVIEWED ON A CASE-BY-CASE BASIS TO ENSURE
   THEY MEET CURRENT MINIMUM REQUIREMENTS FOR INSTALLATION AND FREEZE PROTECTION.

CITY OF NORTH BEND
REDUCED PRESSURE BACKFLOW
ASSEMBLY (INSIDE INSTALLATION)

MARK RIGOS, P.E. MAY 2018
BY CITY DATE

W-48
NOTES:
1. FDC TO BE LOCATED DOWNSTREAM OF DCDA (DOUBLE CHECK DETECTOR ASSEMBLY) OR RPDA (REDUCED PRESSURE DETECTOR ASSEMBLY).

2. PROVIDE MINIMUM OF 6" CLEARANCE BETWEEN VALVES, FITTINGS AND THE VAULT WALL.

3. ALL DIMENSIONS SHOWN ARE MINIMUM ALLOWED.

4. INSTALL FDC LINE ON SIDE OF VAULT WITH GREATEST AVAILABLE SPACE, AS SHOWN.

5. WHEN FDC LINE IS ROUTED THROUGH THE VAULT, THE VAULT SIZE SHALL BE INCREASED TO MATCH THE SIZE REQUIRED FOR THE MINIMUM CLEARANCES.

6. ALL PIPE JOINTS SHALL BE RESTRAINED. CONCRETE BLOCKING IS REQUIRED AT CHANGES IN DIRECTION.

7. CORE DRILL (O.D. +2") VAULT IF KNOCK-OUTS ARE NOT PROVIDED.

8. SEAL PIPE PENETRATIONS WITH WATER-TIGHT GROUT. RESTRAIN INLET/OUTLET PIPES WITH MEGALUG MID-SPAN RESTRAINT AND THRUST BLOCK ADJACENT TO VAULT (DETAIL W-56).

9. WHEN PIV IS LOCATED IN VAULT, THE VAULT SIZE SHALL BE INCREASED TO MATCH THE SIZE REQUIRED TO ACCOMMODATE PIV INSTALLATION WITH 6" CLEARANCES ON VAULT INTERIOR. (LID TO BE CORE DRILLED – USE LINK SEAL/GROUT TO SEAL PENETRATION).

10. MEGAFLANGE ON PE CONNECTION TO FLANGED VALVES AND TEE.

11. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.

12. POSITION DCVA WITHIN HATCH TO ALLOW FOR VERTICAL REMOVAL.

13. CHECK VALVE TO INCLUDE BALL Drip.
NOTES:
1. FDC TO BE LOCATED DOWNSTREAM OF DCDA (DOUBLE CHECK DETECTOR ASSEMBLY) OR RPDA (REDUCED PRESSURE DETECTOR ASSEMBLY).

2. PROVIDE MINIMUM OF 6" CLEARANCE BETWEEN VALVES, FITTINGS AND THE VAULT WALL.

3. ALL DIMENSIONS SHOWN ARE MINIMUM ALLOWED.

4. INSTALL FDC LINE ON SIDE OF VAULT WITH GREATEST AVAILABLE SPACE, AS SHOWN.

5. WHEN FDC LINE IS ROUTED THROUGH THE VAULT, THE VAULT SIZE SHALL BE INCREASED TO MATCH THE SIZE REQUIRED FOR THE MINIMUM CLEARANCES.

6. ALL PIPE JOINTS SHALL BE RESTRAINED. CONCRETE BLOCKING IS REQUIRED AT CHANGES IN DIRECTION.

7. CORE DRILL (O.D. +2") VAULT IF KNOCK-OUTS ARE NOT PROVIDED.

8. SEAL PIPE PENETRATIONS WITH WATER-TIGHT GROUT. RESTRAIN INLET/OOUTLET PIPES WITH MEGALUG MID-SPAN RESTRRAINT AND THRUST BLOCK ADJACENT TO VAULT (DETAILED W-56).

9. WHEN PIV IS LOCATED IN VAULT, THE VAULT SIZE SHALL BE INCREASED TO MATCH THE SIZE REQUIRED TO ACCOMMODATE PIV INSTALLATION WITH 6" CLEARANCES ON VAULT INTERIOR. (LID TO BE CORE DRILLED - USE LINK SEAL/GROUT TO SEAL PENETRATION).

10. MEGAFLANGE ON PE CONNECTION TO FLANGED VALVES AND TEE.

11. TESTING IS REQUIRED BY A WASHINGTON STATE DEPARTMENT OF HEALTH CERTIFIED BACKFLOW ASSEMBLY TESTER UPON INSTALLATION AND ANNUALLY THEREAFTER. ASSEMBLY TO BE MAINTAINED BY OWNER.

12. POSITION DCVA WITHIN HATCH TO ALLOW FOR VERTICAL REMOVAL.

13. CHECK VALVE TO INCLUDE BALL DRIP.
NOTES:
1. CUT 2" PVC SCH40 TO LENGTH TO REST ON OPERATOR NUT AND EXTEND WITHIN 3" OF TOP OF VALVE BOX.
2. TEXT ON PVC PIPE SHALL READ "FIRE LINE – DO NOT CLOSE VALVE."
3. TEXT SHALL BE PRINTED CLEARLY AND NEATLY WITH A BLACK PERMANENT INK MARKING PEN.
THRUST BLOCK ADJACENT TO VAULT

CRUSHED SURFACING TOP COURSE PER WSDOT STD. SPEC. 9-03.9(3). COMPACT TO 95% MAX. DENSITY PER ASTM D1557.

EBBA IRON #1100 SDB MEGALUG - MID-SPAN RESTRAINT. POLYWRAP PRIOR TO PLACEMENT OF CONCRETE.

CIP 3,000 PSI CONCRETE THRUST BLOCK (2'W x 2'H min.)

PROFILE

PLAN

CITY OF NORTH BEND

THRUST BLOCK ADJACENT TO VAULT

APPROVED: MARK RIGOS, P.E. MAY 2018

BY CITY DATE

W-56
VALVE BOX IN ASPHALT AREA

VALVE BOX IN UNIMPROVED AREA

NOTES:

1. EACH VALVE SHALL BE PROVIDED WITH AN ADJUSTABLE CAST IRON VALVE BOX OF 5 INCHES (5") INSIDE DIAMETER. VALVE BOXES SHALL HAVE A TOP SECTION WITH AN EIGHTEEN INCH (18") MIN. LENGTH. THE VALVE BOX SHALL BE OLYMPIC FOUNDRY #045 OR APPROVED EQUAL. VALVE BOX EARS SHALL BE PLACED IN LINE WITH PIPE IT SERVES.

2. 15" MINIMUM, 36" MAXIMUM FOR OPERATOR NUT. EXTENSION MAY BE REQUIRED.
SECTION 7
SANITARY SEWERS

Planning, Designing, and Constructing

Sanitary Sewers for the Collection, Conveyance, and Treatment of Wastewater...
SECTION 7  SANITARY SEwers

7.01 General Requirements

A. General

These Engineering Standards set forth minimum standards for the planning, design, and
construction of sanitary sewer collection facilities.

These standards do not include design of special facilities, such as Pump Stations or Sewage Lift
Stations. These special facilities require unique design requirements and will be subject to
individual review by the City.

Although these standards are intended to apply to physical development within the City, the
standards will not apply for all situations. Compliance with these standards does not relieve the
designer of the responsibility to apply conservative and sound professional judgement. These are
minimum standards and are intended to assist, but not substitute for competent work by design
professionals. The City may at its sole discretion due to special conditions and/or environmental
constraints, require more stringent requirements than would normally be required under these
standards.

B. References

Wherever references are made to the standards, specifications, or other published data of the
various national, regional, or local organizations, such organizations may be referred to by their
acronym or abbreviation only. As a guide to the user, the following acronyms or abbreviations
which may appear, shall have the meanings indicated herein:

AASHTO  American Association of the State Highway and Transportation Officials.
ANSI    American National Standards Institute, Inc.
WSDOT  Washington State Department of Transportation
APWA    American Public Works Association
ASTM    American Society for Testing and Materials
AWWA    American Water Works Association
DOE     Washington State Department of Ecology
DOH     Washington State Department of Health
WAC     Washington Administrative Code

C. Governmental Agency Requirements

All construction on City, County or State roads or right-of-way shall be done in accordance with
the agency's standards and requirements and in accordance with the franchise and/or permit
requirements. The Contractor is responsible to determine these requirements prior to
construction.

Where conflict exists between these Standards and permit requirements, the more stringent
requirements as determined by the City shall take precedence.
7.02 Plan Submittal

A. General

A submittal checklist is included in the appendices of these standards. Following the standards in accordance with the submittal checklist will help ensure a timely review of the proposed project and keep review costs to a minimum.

B. Sanitary Sewer General Plan Notes

A listing of General Notes that must be incorporated on the first sanitary sewer plan sheet are contained in the Appendix. All the notes on the list may not pertain to every project. The Developer should include only those notes that are relevant to the project and may omit non-relevant notes. However, do not renumber the remaining General Notes. If additional notes are needed for specific aspects, they should be added after the General Notes.

C. As-built Documentation

For all wastewater projects, the Developer or City Department responsible for the project shall provide as-built plans at completion of the project, in accordance with Section 3.20.

7.03 Sewer Planning and Design Standards

A. Planning Criteria

Serve to Extreme of Property. Ensure adjacent properties can be provided sewer service (extend to extreme of property and design for the ultimate development of the tributary areas).

Sewer service shall be provided by a gravity system (unless approved by the City). Individual properties shall drain, by gravity side sewers, into a gravity collection system. In some cases, it may be necessary for an area to drain to a common low spot, which will require a sewage lift station to subsequently pump the sewage to a gravity sewer main. Said lift station shall be constructed per Section 7-07.

In those situations wherein a gravity line exists, but is not accessible by gravity from individual properties, individual pressure systems may be allowed to pump sewage into the gravity sewer line. The individual pressure systems shall meet the requirements herein.

B. Demand Projections

Demand projections will be taken from the current version of the City of North Bend Sewer System Comprehensive Plan.

C. Infiltration/Inflow (I/I) Allowances

For new systems an I/I allowance of 1100 gallons per acre per day (gpad) shall be used. On existing sewer systems, I/I allowance shall be determined through analysis.
D. System Parameters

(1) New sewer lines shall be designed so that, under ultimate development, peak flow, including I/I, shall not exceed 50 percent capacity of the line. Existing lines can have peak flows to 75 percent capacity of the line. Engineering design submittals must conform to the City’s required pipe sizes.

(2) No storm drainage connections shall be made to the sanitary sewer system, unless approved by the City and only under special circumstances, i.e., covered parking or wash down areas around garbage collection dumpsters with an area less than 200 square feet. Uncovered garbage dumpster areas less than 200 square feet may discharge to the sanitary sewer. Uncovered garbage dumpster areas greater than 200 square feet must discharge to the storm system after passing through a grease interceptor, designed per these Standards.

(3) All new utilities shall comply with NBMC 14.12.030 C.

E. General Design Standards

(1) All lengths and dimensions shall be horizontal distances, no slope distances on plans.

(2) Indicate type of pavement restoration required by right-of-way authority having jurisdiction (if working in existing streets).

(3) Dimension existing and new main locations from right-of-way line and/or property line, or label stations and offsets.

(4) Check with Public Works Department to determine how surrounding development will affect design (e.g., serve to extreme of property if adjacent property has potential for future development).

(5) On plans show existing manholes or give reference distances to existing manholes near project including manhole number and invert/rim elevations.

(6) Existing sewer lines to be abandoned shall be filled completely with sand, concrete, or controlled density fill; or removed.

(7) Manholes connected to lines being abandoned, shall be rechanneled with 3,000 psi cement concrete.

(8) Side sewers and sewer mains shall not be used for the grounding of electrical systems or for the maintenance, integrity or continuity of any grounding attachment or connection.

(9) Placement of surface appurtenances (manhole lids, water valve lids, etc.) in tire track of traffic lanes shall be avoided whenever possible.

(10) Soil nails shall not be installed at or above pipes and shall include a minimum 5-foot clearance if installed below pipes.
F. Main Lines

(1) Minimum pipe size shall be 8 inches.

(2) Pipe Slope

(a) Minimum slope shall comply with Ecology standards, except 8-inch-diameter pipe shall have a minimum slope of 0.005 ft/ft.

(b) Maximum main line slope shall not induce velocities greater than 10 feet per second under daily peak flows.

(c) Where pipe are proposed on hills or steep slopes, the Director shall determine if the pipe location and configuration will be allowed. If allowed, the Developer’s engineer shall propose design details for permanently securing and anchoring the pipe.

(3) Plan View

(a) List pipe length, size, and material alongside of pipe, e.g., 150 LF 8-INCH PVC. Pipe material can be listed in a general note in lieu of listing along pipe.

(b) Pipe length is to be based on horizontal distance between center of manholes.

(c) Indicate direction of flow with arrows on end of pipe entering manhole.

(4) Profile View

(a) List pipe length, size, material, and slope (%), e.g., 150 LF 8-INCH PVC S=1.25%. Pipe material can be listed in a general note in lieu of listing on profile.

(b) Slope is based on I.E. OUT of upstream manhole, I.E. INTO downstream manhole and horizontal distance between center of manholes.

G. Manholes

(1) Maximum distance between manholes shall be 400 feet.

(2) All manhole covers shall be set flush with ground surface, except where otherwise designated by the City. Manholes shall have bolt-locking covers.

(3) Concrete perimeter seals shall be provided around all manhole adjustment sections per Standard Detail.

(4) Existing and Terminal Manholes:

When connecting to an existing manhole, all requirements of these Engineering Standards must be met. The design shall call out all necessary revisions to the existing manhole, or if the existing manhole cannot be renovated to meet the standards, the manhole shall be removed and replaced with a conforming structure.
(a) When there is a potential for future main line extension from terminal manhole, position side sewer connections to manhole to avoid conflict with future main line connection to manhole.

(b) Terminal manholes (without side sewer connection) shall not be channeled. Slope manhole base to provide positive drainage toward pipe, use 3,000 psi cement concrete.

(5) Where side sewer connects to manhole, invert of side sewer shall be equal to or above main sewer crown, but not to exceed 18 inches above invert of main sewer.

(6) Drop in invert elevation across manhole shall be from 0.1 feet to 0.2 feet. In areas with sewer main slopes less than 0.50 percent, lesser drops are allowed, to be determined by the City. In areas with sewer main slopes greater than 10 percent, the drop should be designed to produce a slope across the manhole that is an average of the inlet and outlet pipe slopes. Maximum allowable drop in invert elevation across the manhole shall be 1.0 feet.

(7) Manhole Sizing

48" manhole: Two connecting pipes, up to 12" diam.  
Three connecting pipes, up to 10" diam.

54" manhole: Two connecting pipes, 15" diam. to 21" diam.  
Three connecting pipes, 10" diam. to 15" diam.  
Four connecting pipes, up to 12" diam.

72" manhole: Two connecting pipes, 21" diam. to 24" diam.  
Three or four connecting pipes, 15" diam.

For other pipe configurations and hydraulic concerns, the size of the manhole will be determined on a case by case basis.

The minimum angle between the incoming and the outgoing pipe shall be 90°; pipe shall be radial with the center of manhole.

The above configurations shall provide adequate shelves and room for maintenance and performing video inspections.

(8) Channels shall be centered in manhole.

(9) Ladder rungs shall be placed on side of manhole with largest shelf.

(10) Any manhole less than 5' deep (rim to invert) shall have a concentric cone. All other manholes shall be provided with eccentric cone.
(11) Minimum manhole depths (invert to top of rim):

<table>
<thead>
<tr>
<th>MANHOLE SIZE</th>
<th>PIPE SIZE</th>
<th>MIN MH DEPTH</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>48&quot;</td>
<td>6&quot;</td>
<td>3.0'</td>
<td>See Standard Detail S-6</td>
</tr>
<tr>
<td></td>
<td>8&quot;</td>
<td>3.2'</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10&quot;-12&quot;</td>
<td>3.5'</td>
<td></td>
</tr>
<tr>
<td>54&quot;</td>
<td>8&quot;</td>
<td>3.7'</td>
<td>See Standard Detail S-6</td>
</tr>
<tr>
<td></td>
<td>10&quot;-12&quot;</td>
<td>4.0'</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15&quot;-18&quot;</td>
<td>4.5'</td>
<td></td>
</tr>
<tr>
<td>72&quot;</td>
<td>15&quot;</td>
<td>8.0'</td>
<td>See Standard Detail S-3</td>
</tr>
<tr>
<td></td>
<td>18&quot;-24&quot;</td>
<td>8.5'</td>
<td></td>
</tr>
<tr>
<td></td>
<td>27&quot;</td>
<td>9.0'</td>
<td></td>
</tr>
</tbody>
</table>

72-inch manholes over 11.5 feet in depth shall include 48-inch reducing section per Standard Detail S-2.

(12) Glass fiber supported plastic or PVC-hard lined manhole channels will be allowed at contractor's option.

(13) Drop Manholes

(a) Minimum height of drop is 2.5 feet.
(b) Maximum height of drop is 20 feet.
(c) Maximum drop pipe diameter is 8 inch.
(d) Minimum manhole diameter is 54 inch for new drop manholes; two connections are allowed for 54-inch diameter or greater.
(e) Outside drop structures are required on new manholes, and connections to existing manholes.
(f) Inside drops are allowed on a case by case basis as approved by the City.

(14) The burial of manholes or cleanouts is prohibited.

(15) Manholes in easements shall be constructed to provide a stable, level grade for a minimum radius of 2.5 feet around the center of the access opening, per standard detail S-8.

(16) New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration or inflow of flood waters into the systems and discharges from the systems into flood waters. Manholes located in the curb and gutter line, flood plains, or flood-prone areas shall have a locking, sealed, gasketed ring and cover.

H. Pipe Class Protection – Cover

(1) PolyVinyl Chloride (PVC) pipe class designation:

(a) All sewer pipe (including side sewer stubs) shall be PVC conforming to ASTM-D3034 SDR 35 (4"-15") or ASTM-F679 (18"-27"), unless otherwise determined by the City.

(b) Depth of cover over PVC pipe shall be 3 feet minimum and 20 feet maximum. Pipe depths outside this range will require use of pressure class PVC conforming
SANITARY SEWERS

(2) PVC pipe shall be encased in a steel or ductile iron casing when crossing under improvements where the ability to remove and replace pipe without disturbance to the improvement is needed. Casings are required when:

(a) Crossing under rockeries over 4' high.
(b) Crossing under retaining wall footings over 4-foot wide.
(c) Crossing under reinforced earth retaining walls (both wall and reinforcing material).
(d) Casings shall extend a minimum of 5 feet past each edge of the improvement, or a distance equal to the depth of pipe, whichever is greater. The carrier pipe shall be supported by casing spacers where casing length exceeds 10 feet.

Minimum clearance between bottom of rockery and top of pipe or casing shall be 2 feet. The trench shall be backfilled with crushed rock.

(3) Building setback requirements:

(a) 5 foot minimum from covered parking.
(b) 10 foot minimum from buildings and retaining walls, or equal to depth of pipe, whichever is greater.
(c) 20 foot minimum easement shall be provided between buildings, on multi-family and commercial sites.
(d) When passing between any two buildings (residential or commercial, etc.) which are 25 feet apart or less, the easement width shall extend the full width between the buildings, and the depth of the sewer line shall not exceed 10 feet.

I. Clearances – Other Utilities

(1) All clearances listed below are from edge-to-edge of each pipe.

(2) Water services and sewer stubs shall have at least 5-foot horizontal clearance.

(3) Check for crossing or parallel utilities. Maintain minimum vertical and horizontal clearances. Avoid crossing at highly acute angles (the smallest angle measure between utilities should be between 45 and 90 degrees).

(4) Horizontal clearances from sanitary sewer:

- Cable TV, Gas, Storm: 5 feet
- Power, Telephone, Fiber Optic, Water: 10 feet

(5) Vertical clearances from sanitary sewer:

- Cable TV, Gas, Storm: 1 foot
- Power, Telephone, Fiber Optic: 1 foot
- Water: 2 feet
(6) Where sewer crosses above or below water main, one full length of sewer pipe shall be used with the pipes centered for maximum joint separation. Washington Department of Ecology criteria will also apply.

(7) Send letter and preliminary plan to existing utilities to inform them of new construction. Request as-built information and incorporate into plans. At minimum the following utilities should be contacted:

- Cable television
- Natural gas
- Power
- Storm drainage
- Telephone, Fiber Optic
- Water

J. Connections to Existing System

(1) New sewer mains (8 inch and larger) shall connect to existing sewer main at existing manholes, or with new manhole on existing sewer per Standard Detail.

(2) When connect to existing manhole, core-drill opening for pipe and rechannel manhole base.

(3) Where new main is larger in diameter than existing downstream main, check that capacity of existing main is not exceeded by flow from new main.

(4) When connecting to existing manhole, check that requirements of Section 7-03 D(7) are satisfied.

(5) If connecting to existing manhole that has access less than 24 inches in diameter and/or concentric cone (manholes over 5-feet deep), manhole shall be upgraded to include new 24-inch ring and cover and/or eccentric cone.

(6) If connection to existing manhole places a channel directly under access opening, move ladder and rotate cone section to place access over concrete shelf.

(7) Connections to end of existing pipe:

   (a) If end of pipe is known to have a bell, and new pipe is same material as existing, plans can specify connection by inserting spigot of new pipe into existing bell end, with “donut” gasket.

   (b) If existing line is plain end, or must be cut, plans shall specify use of a coupling to connect new and existing lines.

(8) Approved couplings for use on sewer mains include:

   (a) Ductile iron mechanical couplings (equal to ROMAC) on ductile iron, concrete, vitrified clay, or pipes with differing materials or diameters.
(b) On PVC or PE mains, PVC or PE couplings with compatible dimension ratio and
gaskets to connect new and existing pipes shall be used.

(c) Where a section of existing PVC pipe is replaced by “dropping-in” a new section
of PVC pipe, the connections to existing pipe shall be made with PVC closure
couplings (slip couplings).

K. Fats, Oils, and Grease Separation

Pretreatment requirements for wastewater are included in NBMC 13.32.

(1) Oil/Water Separator

Whenever an industrial or commercial business generates mineral/petroleum/non-
biodegradable cutting oils exceeding 100 milligrams per liter to be discharged to the
sanitary sewer, pre-treatment is required. An oil/water separation device shall be
installed by the property owner as specified on various Standard Details. Selection and
sizing of an oil/water separator shall be subject to approval of the City. Water discharged
from any oil/water separator to the sanitary sewer system shall not contain in excess of
100 milligrams per liter of petroleum oil, non-biodegradable cutting oil or mineral
products, and shall be in compliance with the City of North Bend regulations for
discharge to the sanitary sewer.

(a) Sizing of a separator facility shall be based upon maximum available flow to the
separator and provision of a 45 minute retention time in the separator at that
flow, with a minimum capacity of at least 100 gallons.

(b) The oil/water separator shall be covered with removable sections. Access and
inspection covers, weighing not more than 30 lbs. and with suitable hand holds,
are to be provided directly above inspection “tee” and oil/grit collection
compartments.

(c) Only waste water from floor drains and covered parking areas shall drain to the
separator. The location and design shall minimize or eliminate the possibility of
storm water reaching the separator -- areas over 200 square feet open to rainfall
shall not drain to the separator. See Standard Details.

(d) Allowable materials for construction are as follows:

- Tank - concrete
- Baffles - concrete, steel plate

(e) The separator shall be located within 20 feet of drive for access by maintenance
vehicle.

(f) A sampling tee shall be located on the outlet as shown on the Standard Details.
Access to the separator shall be maintained free for inspection and compliance
determination sampling at all times.

(g) The effluent discharged from any oil/water separator to the sanitary sewer shall
not exceed 100 parts per million total oil.
(h) When pretreatment is no longer required, the inlet and outlet pipes shall be permanently plugged, the separation chambers pumped out, and the vault removed, or filled with compacted crushed rock or controlled density fill.

(2) Grease Interceptor

Whenever a commercial and/or retail food preparation operation, regardless of size, generates animal/vegetable fats, oils or grease (F.O.G.) waste, which causes a visible sheen or accumulations in the effluent, to be discharged to the sanitary sewer, pretreatment is required. A grease interception device as specified by various Standard Details, and/or other biological, chemical, or other pretreatment approved by the City, shall be installed by the owner. Effluent discharged from any grease interceptor shall not contain a visible sheen or accumulations of F.O.G., and shall be in compliance with the City of North Bend regulations for discharge to the sanitary sewer.

(a) Design of the grease interceptor shall conform to the Standard Details, and shall be subject to approval by the City. Size shall be determined by the City. Minimum capacity shall be 600 gallons except as noted by the City.

(b) Fixtures in the kitchen area which discharge waste-water containing grease are to be connected to the grease interceptor. Such fixtures include dishwashers, pot sinks, range woks, janitor's sink, floor sinks, rotoclones. Toilets, urinals, and wash basins shall not flow through the interceptor.

(c) The interceptor shall be located outside the building within twenty feet of drive for access by maintenance vehicles. 

(d) The interceptor shall be filled with clean water prior to startup of system.

(e) Allowable materials for construction are as follows:
   - Tank - concrete
   - Baffles - concrete, plastic

(f) Access to the interceptor shall be maintained free for inspection and compliance determination sampling at all times.

(g) When pretreatment is no longer required, the inlet and outlet pipes shall be permanently plugged, the separation chambers pumped out, and the vault removed, or filled with compacted crushed rock or controlled density fill.

L. Easements

(1) Show easements on all plans and identify width.

(2) Show easements on all private property. If easement is defined as a constant width on each side of sewer main, then show a segment of the easement and label as “Typical” (typ).
(3) The required utility easement width shall be: (1) the minimum value set forth below; or (2) determined by extending a line from the bottom of the excavation at the outside diameter for pipes, at a 1 H : IV slope until it intercepts the finished grade, whichever is greater.

(4) The sewer pipe shall be located in the center of the easement.

(5) For pipes up to 18 inches in diameter, the minimum easement width shall be 15 feet.

(6) For pipes greater than 18 inches, the minimum easement width shall be 20 feet.

(7) A 20-foot minimum easement shall be provided between buildings, on multi-family and commercial sites.

(8) When passing between any two buildings (residential or commercial, etc.) which are 25 feet apart or less, the easement width shall extend the full width between the buildings and the depth of the sewer pipe shall not exceed 10 feet.

(9) Sewer pipe shall be located 10 feet from edge of easement facing interior of lot, to ensure setback from building.

(10) Also see Section 7.03 H(3), “Building Setback Requirements”.

(11) Easement Documentation Requirements:

(a) All easements shall be shown on the project plans and identified as “private” or “public”, together with the width dimension and utility use, e.g., 20-Foot Public Sewer Utility Easement.

(b) All documents for public easements shall conform to these Standards, will be provided on the City’s easement template and shall comply with King County Recorder’s Office formatting requirements. Include the King County tax parcel number(s), site address, owner names and site legal description.

(c) Easements shall be dedicated to and approved by the City prior to acceptance of a public utility system. The Grantee shall be the “City of North Bend,” a Washington municipal corporation, its heirs, successors and assigns.” The City may require indemnification agreements to hold the City harmless where maintenance access across private property is deemed necessary.

(d) The description contained within the easement document shall be prepared and stamped by a land surveyor licensed in the State of Washington. The description shall be identified as an Exhibit, together with the title of the utility use, e.g., Permanent Public Sewer Utility Easement. The description shall be clearly written and referenced to the underlying property. The description shall be accompanied by an additional graphic exhibit which depicts a scaled drawing of the easement location relative to the subject parcel.

(e) Off-site easements shall be delivered to the City prior to issuing a Notification to Proceed with construction. Submittal of on-site easements may be delayed until completion of construction improvements.
(f) Bills of Sale for all utility facilities appurtenant to public easements or tracts shall be given to the City.

M. Side Sewers

(1) Side sewer stub shall extend from main line to 10 feet past edge of property line. 6-inch pipe shall be used inside the public right-of-way (unless expected flows require larger size line).

(2) 4-inch minimum pipe may be used inside private property, for residential side sewers from end of 6-inch stub to building, for a single connection contained within the lot. 6-inch minimum pipe shall be used for private joint-use sewers, and when crossing a property outside the lot to be served.

Commercial side sewers shall be a minimum 6-inch pipe.

For multi-family developments, side sewers for each separate building must be at least 6 inches in diameter. For those buildings serving over ten units or for side sewers serving more than one building, side sewers shall be a minimum of 8 inches in diameter and must connect to a manhole.

(3) Side sewer shall have minimum 5 feet of cover at property line. Greater depths may be required where elevation of lowest floor to be served is lower than surface elevation at property line. Ensure that stub can serve all property by gravity flow. When crossing beneath a ditch, side sewers shall have 30 inches of cover from the bottom of the ditch.

(4) Joint-use side sewer stubs are not allowed where slope of side sewer is less than 2 percent. Provide a single stub to “low” end of each lot, and show invert elevation of each stub on the plan. 2009 Uniform Plumbing Code may also require a backwater valve.

(5) Side sewers shall connect to main sewers with a wye, unless otherwise approved by the City. Side sewer stubs shall run perpendicular to the sewer main, in the right-of-way. On plan, indicate station of side sewer wye from nearest downstream manhole. Also indicate length of side sewer stub from main to plug at end of line. Call out invert at plugged-end of stub.

(6) Minimum side sewer slope shall be 2 percent. Maximum slope shall be 100 percent. A minimum slope of 1 percent may be approved by the Director, for 6 inch or larger side sewers, upon showing no ability to install at 2 percent.

(7) All side sewer clean-outs on commercial and multi-family projects shall include at-grade access with covers per the Standard Detail.

(8) Maximum distance between side sewer clean-outs shall be 100 feet.

(9) See Section 7-06 I, Joint-Use Side Sewer, for additional requirements for single-family residential joint-use side sewers.

(10) For a side sewer connection to a building where a coupling is within the right-of-way and
when the edge of the building foundation is at or within 3 feet of the edge of right-of-way, the coupling shall be a ductile iron mechanical coupling, equal to Romac 501 style.

(11) Cleanouts are required at buildings, at property lines, and 100-foot intervals and at horizontal changes in direction totaling 135 degrees.

N. Individual Pressure Systems

(1) Where allowed, individual pressure systems may be installed to pump sewage from a property up into a public gravity sewer main. The pump installation must meet all applicable building, plumbing, and electrical codes and shall be approved prior to installation. The property owner shall be solely responsible for the installation, operation and maintenance of the pressure system, including the electrical service, pump, tank, controls, side sewer, and receiving device.

(2) Connections to a gravity sewer main shall require a 6-inch PVC gravity side sewer. The transition between the HDPE pressure side sewer and the gravity side sewer shall require the installation of a Pressure Line Connection to Gravity Sewer connection as shown in the details, including installation of the 6-inch cleanout assembly at the property line.

(3) A Grinder Pump Cleanout shall be installed within 16 inches of the grinder pump tank, in accordance with the details and installation notes.

7.04 Sewer Materials

A. General

All materials shall be new and undamaged. The same manufacturer of each item shall be used throughout the work. Where reference is made to other specifications, it shall be the latest revision at the time of construction, except as noted on the plans or herein. All materials not specifically referenced shall comply with applicable sections of ASTM, AWWA or the APWA/WSDOT Standard Specifications.

Approved manufacturers and model numbers of various materials are listed in Approved Materials List, Appendix 7-2. When specific manufacturers or models are listed, no substitutions will be allowed without prior approval by the City.

B. Gravity Sewer Pipe and Fittings

(1) PVC Pipe:

All PVC pipe and fittings shall be integral wall bell and spigot, rubber gasket joint, solid wall PolyVinyl chloride (PVC) pipe, meeting the standard specifications of Section 9-05.12.(1).

(2) AWWA C900/C905 PVC Pipe:

Where required, AWWA C900/C905 PVC pipe shall meet the standard specifications of Section 9-30.1(5). All fittings shall be PVC, compatible with pipe class called for in the plan, unless otherwise approved. PVC fittings shall conform to AWWA C900 and C905 with respect to joint dimensions and physical properties.
(3) Ductile Iron Pipe:

All ductile iron pipe material shall be new and undamaged. Unless otherwise approved by the Engineer, the same manufacturer of each item shall be used throughout the work. Materials shall meet the requirements of the following sections of the standard specifications as modified herein:

- Pipe 9-30.1
- Ductile Iron Pipe 9-30.1(1)
- Restrained Joints 9-30.2(6)

All ductile iron pipe shall be Class 52 with Protecto 401 Lining. Ductile iron fittings shall conform to the standard specifications of Section 9-30.2(1). Contractor shall provide Manufacturer’s Certificate of Compliance in accordance with Section 1-06.3 Manufacturer’s Certificate of Compliance of the Standard Specifications for all pipe to be used.

Flanged joints shall conform to ANSI B.16.1, Class 125 drilling pattern, rated for 250 psi working pressure.

C. Pressure Sewer Pipe

PVC pressure pipe shall conform to AWWA C900/C905 DR 18 unless otherwise called for in the plan. Requirements for AWWA C900/C905 pressure pipe shall be as shown herein under Section 7.03 B(2), Gravity Sewer Pipe and Fittings, AWWA C900/C905 PVC Pipe.

Ductile iron pipe shall be Class 52 with polyethylene or epoxy lining unless otherwise called for in the plan. Ductile iron fittings shall conform to the standard specifications of Section 9-30.2(1).

HDPE pipe shall meet the standard specifications of Section 9-30.1(6).

D. HDPE Pipe

Butt-fused welded HDPE pipe shall be considered by the City on a case-by-case basis under the following conditions:

- HDPE pipe is only used for transmission lines with no laterals.
- HDPE pipe is used for buried piping only.
- The use of HDPE pipe is reserved for situations in which conventional PVC sewer pipe may not be appropriate: non-linear alignments, low-head siphons, steep slopes in sensitive/protected areas, etc.
- HDPE pipe meets the standard specifications of Section 9-30.1(6).

E. Fittings

All fittings shall be of the same material as the pipe unless otherwise specified. For side sewers, a wye shall be installed in pipelines 6 inches or larger with 6 inch inside diameter for side outlet.
For side sewer connections to existing sewer lines, a flexible metallic side sewer saddle shall be used for hole-cuts. If any other type of fitting is required, the type and make shall be specified on the plans.

F. Caps and Plugs

All open ends shall be sealed with a plug or cap and gasket material approved by the City. The plug or cap shall be able to withstand all test pressures without leakage.

G. Bolts in Piping

Bolts shall be malleable iron, Cor-ten, or stainless steel.

Bolts and nuts for flanged pipe and fittings shall conform in size and length with ANSI/AWWA C115/A21.15. T-bolts shall be malleable iron Cor-ten in accordance with ANSI/AWWA C111/A21.11. Stainless steel bolts shall meet the requirements of ASTM A-307, Grade A. Shackle rods, nuts and washers shall be All Thread stainless steel 316SS.

Stainless steel nuts, bolts and washers shall be type 304.

H. Flange Gaskets

Gasket Material shall be neoprene, Buna N. chlorinated butyl, or cloth inserted rubber.

I. Manholes

Manholes shall be precast concrete sections, meeting the standard specifications of Section 9-05.50(2), with a confined O-ring rubber gasket joints per ASTM C-478 and ASTM C-443 with either a precast base or a cast-in-place base made from a 3,000 psi structural concrete.

Polypropylene safety steps shall be required in all manholes. Polypropylene safety steps shall be constructed from polypropylene, conforming to ASTM D-4101, injection molded around a 1/2-inch-diameter grade 60 steel reinforcing bar conforming to ASTM A-615. The polypropylene step shall be either cast-in-place or driven into preformed holes in the manhole wall. The step shall be capable of resisting pullout forces exceeding 1,500 pounds.

Steps and ladders dimensions shall conform to the Standard Detail S-13. Steps shall project uniformly from the inside wall of the manhole. Steps shall be installed to form a continuous vertical ladder with rungs equally spaced at 12-inch centers. Steps in precast base may be cast in place safety steps, or prefabricated galvanized hanging ladder per Standard Detail S-13 fabricated with #8 (1 inch) reinforcing bar and #7 smooth steel bar conforming with ASTM A-615, Grade 40, galvanizing conforming with ASTM A-123.

Concrete adjustment rings shall conform to the ASTM C-32, Grade MA.

Mortar used shall be composed of one part cement to two parts of plaster sand.

Outside drop structures shall be constructed with AWWA C-900 pipe and fittings, DR 18.
J. Manhole Lining

In instances where high velocity flows entering the manhole can potentially erode the interior wall(s), the City may require an epoxy based structural lining system be installed in the new or existing manhole. The epoxy based liner shall be installed per the manufacturer’s specifications. Approved epoxy lining systems shall be Raven 404, Neopoxy, or an approved equal.

K. Manhole Ring and Cover

Ductile iron and cast iron rings and covers shall conform to the Standard Details and Section 9-05.15 of the standard specifications, as modified herein.

Casting shall conform to the requirements of ASTM A-536, Grade 80-55-06 for ductile iron and ASTM A-48, Class 30 for cast iron, and shall be free of porosity, shrinkage cavities, cold shuts, or cracks, or any surface defects which would impair serviceability. Repair of defects by welding or by the use of “smooth-on” or similar material will not be permitted.

Manhole rings and covers shall be machine-finished or ground-on seating surfaces so as to assure non-rocking fit in any position and interchangeability. At the request of the City, there shall be made available at the foundry standard rings and standard covers for use by inspectors in testing fit and seating.

New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters. For all manholes located in the curb and gutter line, flood plains, or flood areas in easements, the installation of a locking gasketed ring and cover will be required. Manhole covers shall have a blind pick hole for removal.

Locking bolts shall be 5/8 inch - 11 NC stainless steel type 304 socket (allen) head bolts, 2-inches long.

L. Concrete Bedding and Blocking

Concrete bedding shall meet the standard specifications of Section 7-09.3(21).

M. Oil/Water Separator

Oil/Water separator vaults shall be of precast concrete construction. Cement concrete shall have a minimum 28-day compressive strength of 4,500 pounds per square inch.

Deformed bars for steel reinforcement shall be in accordance with ASTM A-615, grade 60. Welded-wire fabric reinforcement shall be in accordance with ASTM A-185, grade 65. All interior piping shall be PVC sized to match side sewer line size. Baffles and weir shall be 1/2-inch-thick steel plates galvanized in accordance with ASTM A-123. Vault cover shall include one 24-inch square diamond plate access door and two 12-inch square diamond plate inspection covers centered over outlet tee and inlet. Cover shall be designed for AASHTO H-20 load. See the Standard Details for vault sizes and miscellaneous details.
N. Grease Interceptor

Grease Interceptor Vaults shall be of precast concrete construction. Cement concrete shall have a minimum 28-day compressive strength of 4500 pounds per square inch. Deformed bars for steel reinforcement shall be in accordance with ASTM A-615, grade 60. Welded-wire fabric reinforcement shall be in accordance with ASTM A-185, grade 65. All interior piping shall be PVC sized to match side sewer line size. Interior baffle shall be precast reinforced concrete, 4-inches thick. Concrete baffle shall be secured in place by slotted vault walls or with stainless steel angels as shown in the Standard Detail.

Vault cover shall include 24-inch-diameter bolt-locking manhole covers and frames located over inspection tees. Manhole covers shall not allow passage of air or gases. Vault cover shall be designed for AASHTO H-20 load with 30 percent impact factor. See the Standard Details for vault sizes and miscellaneous details.

O. Lids, Hatches, and Covers – Slip Resistance

Metal lids, hatches and access covers shall be constructed with a non-slip treatment having a coefficient of friction between 0.6 and 1.0 wet, as determined by ASTM C1028-89. Lids, hatches and access covers located on slopes of 4 percent or greater shall have a coefficient of friction between 0.8 and 1.0 wet, as determined by ASTM C1028-89. Prior to installation, the Contractor shall supply the Engineer with a shop drawing of the appurtenance specifying a coefficient of friction meeting or exceeding the above requirement.

P. Commercial Cleanout with Test Sampling Tee

Commercial cleanout and sampling tee shall consist of PVC pipe and fittings configured as shown in the Standard Detail. Cleanout access shall consist of a cast-iron material imbedded in 3000 psi concrete as shown in the Standard Detail. Sampling tee enclosure shall be a concrete meter box as specified in the Standard Detail.

Q. Backwater Valve

Backwater check valve installed on 4-inch to 8-inch-diameter side sewers shall be rubber flapper swing type check valve. Flapper shall be constructed from steel reinforced rubber with 45-durometer standard rubber hardness. Valve seat shall be at 45° angle to direction of flow. Flow area through valve shall equal full pipe area. Valve body shall be cast iron with flanged ends and bolted over to allow removal of flapper without removing valve from line.

Backwater valve shall be housed in 48 inch diameter precast concrete valve chamber with 48-inch by 24-inch concentric reducing cone, or plastic meter boxes, depending on depth. 24-inch frame and cover shall be marked “sewer.” See Standard Detail.

R. Barrier Fence

Barrier Mesh shall be manufactured from Low Density Polyethylene, stabilized against U.V. degradation, and with a special selection of pigments to ensure optimum visual performance under harsh weather conditions. Barrier Mesh shall be corrosion-free and resistant to salt water and most chemicals. Barrier Mesh shall present a visual target area of approximately 0.5 square meter per square meter of mesh.
S. Bedding and Backfill

(1) Pipe Bedding Materials

For PVC and Ductile Iron pipe, bedding for sewer mains shall be “pea gravel” meeting the specifications for a relatively round, processed, washed rock with:

- 100% passing the 3/8-inch screen
- 0% passing the #4 screen

If necessary on steep pipe runs, the pipe trench shall be constructed with trench dams of clay or CDF to prevent the migration of water through the pea gravel. Water collected in the trench shall be piped to a suitable discharge location.

For convenience, crushed rock bedding conforming to Section 9-03.9(3) Crushed Surfacing Top Course of the Standard Specifications may also be used as bedding material for pipe.

(2) Trench Backfill Materials

For transverse trenches (perpendicular to the roadway centerline) in paved areas, trench backfill conforming to Section 9-03.9(3) Crushed Surfacing Base Course of the Standard Specifications shall be used.

For longitudinal trenches (trenches parallel to the centerline of the roadway) in paved areas, backfill material (4 feet and deeper below finished grade) shall conform to Section 9-03.14(1) Gravel Borrow of the Standard Specifications. The Contractor may request to use excavated material as trench backfill and must demonstrate to the Engineer that the suitable excavated material conforms to Section 9-03.14(1) Gravel Borrow of the Standard Specifications and proper compaction levels can be achieved. Admixtures and/or additives may not be used to modify the moisture content in order to meet compaction specifications.

The top 4 feet of longitudinal trenches in paved areas shall be backfilled with crushed rock conforming to Section 9-03.9(3) Crushed Surfacing Base Course of the Standard Specifications.

In unpaved areas, trench backfill material shall conform to Section 9-03.14(1) Gravel Borrow of the Standard Specifications. The Contractor may request to use excavated material as trench backfill when it has been determined by the Engineer to be suitable and conforms to Section 9-03.14(1) Gravel Borrow of the Standard Specifications and proper compaction levels can be achieved.

(3) Structure Backfill Materials

In paved areas, backfill material (4 feet and deeper below finished grade) shall conform to Section 9-03.14(1) Gravel Borrow of the Standard Specifications. The Contractor may request to use excavated material as trench backfill when it has been determined by the Engineer to be suitable and conforms to Section 9-03.14(1) Gravel Borrow of the Standard Specifications and proper compaction levels can be achieved.
The top 4 feet around structures shall be backfilled with crushed rock conforming to Section 9-03.9(3) Crushed Surfacing - Top Course of the Standard Specifications.

In unpaved areas, structure backfill material shall conform to Section 9-03.14(1) Gravel Borrow of the Standard Specifications. The Contractor may request to use excavated material as structure backfill when it has been determined by the Engineer to be suitable and conforms to Section 9-03.14(1) Gravel Borrow of the Standard Specifications and proper compaction levels can be achieved.

(4) Foundation Gravel Materials

Foundation gravel for structures shall consist of one of the following aggregates as set forth in the Standard Specifications:

- Ballast 9-03.9(1)
- Permeable Ballast 9-03.9(2)
- Gravel Backfill for Foundations (Class A or B) 9-03.12(1)
- Foundation Material Class A and Class B 9-03.17

(5) Controlled Density Fill Materials

Controlled density fill (CDF, aka flowable fill) shall be a mixture of Portland Cement, admixture (optional), Fly Ash, aggregates and water. It shall be proportioned to provide a grouty, non-segregating, free flowing, self-consolidating and excavatable material that will result in a non-settling fill which has measurable unconfined compressive strength. CDF shall meet the standard specifications of Section 2-09.3(1)E.

T. Steel Casing

Steel casing shall be black steel pipe conforming to ASTM A-53. Before installing, coat casing exterior with shop-applied anticorrosive coating conforming to AWWA C210. Minimum coating thickness shall be 16 mils dry film thickness (DFT); however, thickness shall not exceed manufacturer’s recommended thickness. Coating type shall be a polyamide epoxy-coal tar equal to Tnemec Hi-Build Tneme-Tar, Series 46H-413.

Casing wall thickness shall be 0.250 inch for casings 24 inches or less in diameter and 0.375 inch for casings over 24 inches in diameter.

Carrier pipe for sewage shall be PVC, SDR 35.

U. Casing Spacer

Casing spacers shall be installed in casings over 10 feet long. Where casing spacers are not used, the carrier pipe shall be more than 10 feet in length (no pipe joints inside casing).

Casing spacer shell shall be manufactured in two pieces from heavy gauge T-304 stainless steel or 14 gauge hot rolled pickled steel joined with ribbed flanges. The shell shall be lined with a PVC liner 0.090 inch thick with 85-90 durometer.

Carbon steel casing spacer shell and risers shall be coated with a heat fused PolyVinyl chloride
coating, or hot-dip galvanized.

PolyVinyl Chloride Coating Specifications:

- Durometer - Shore A2 (10 Sec.) (ASTM D-1706-61T) 80
- Max. operating temperature (constant) 150˚ (65˚C)
- Electrical properties (ASTM D-149-61)
  - (short time .010”) 1,380 V/Mil
- Resistance:
  - Salt spray (ASTM B-117) Excellent
  - Acids Good
  - Alkalis Good

All nuts and bolts shall be 18-8 stainless steel.

Runners shall be supported by risers made from heavy gauge T-304 stainless steel or 12-gauge hot rolled pickled steel. Runners shall be ultra high molecular weight polymer with high resistance to abrasion and sliding wear.

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>ASTM METHOD</th>
<th>UNITS</th>
<th>VALUE</th>
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<tr>
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<tr>
<td>Sand Slurry*</td>
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</table>

*Sand slurry condition - 7 hours in one part sand/one part water slurry at 1,725 rpm. Carbon steel - 100, Hifax - 15. The lower the value, the more resistant to abrasion.

Casing spacers shall be “center positioning” type. Height of risers and runners combined shall be sufficient to keep the carrier pipe bell, couplings, or fittings at least 0.75 inch from the casing pipe wall at all times and provide at least 1-inch clearance between runners and top of casing wall, to prevent jamming during installation.

V. Neoprene Foam Pad

Where approved by the City, a neoprene foam pad may be used for cushion between adjacent pipes which are not meeting minimum vertical clearance requirements. The approved material is the Dow Plastics Ethafoam™ 220, or an approved equal meeting the same ASTM requirements.
W. Individual Pressure Systems

(1) The grinder sewer pump system shall be a SAM-8 Simplex Grinder System built for Sammamish Plateau Water and Sewer District by PumpTech, IN., 12012 SE 32nd Street, Suite 2, Bellevue, WA 98005; phone: 425-644-8501. The SAM-8 Simplex Grinder package shall be shown in the details and include the following items:

(a) Hydromatic HPG 200 M2-2 Series Hydro-Grind Sewage Pump with 20 feet of power cord.

(b) Stainless steel guide rail system.

(c) “Hydromatic Simplex Q” packaged control system for a simplex station consisting of the control panel, alarm light, and alarm horn. The panel shall have a 2-pole, 25-amp, 230-volt breaker for the pump, and a separate 1-pole, 10-amp, 120-volt breaker for the alarm. The panel shall be supplied with two exterior alarm buttons: “Push to Test” and “Push to Silence.”

(d) Three SJE Rhombus Sensor Float Control Switches, Part No. 1002170, with 30-feet of cable (30SWENO – Weighted Externally, Normally Open).

(e) A 23” x 60” fiberglass grinder tank supplied with galvanized steel cover (#11 gauge), stainless steel hold-down bolts, and an anti-flotation flange. The tank will also be provided with a 1-1/4 inch FPT hub connection for the pump discharge piping.

(f) The package shall be provided with the following loose items that are to be field located and installed:

(i) Two 1-1/4 inch hub connection (one for pump controls, one for float controls);
(ii) One 1-1/2 inch PVC vent;
(iii) One 1-1/2 inch hub connection for the vent;
(iv) Neoprene grommet for the building side sewer (size as required).

(g) The tank shall be supplied with a pump guide rail system for removal of pump unit, as manufactured by PumpTech, Inc. All exposed surfaces on guide rail system shall be stainless steel including the lift chain.

(h) All valves and piping shall consist of hydraulically sealed discharge flanges.

(i) The package system shall meet the requirements of the Washington State Dept. of Labor & Industries for residential grinder pumps.

(2) Pressure Side Sewer Pipe:

Pressure side sewer pipe shall be high-density polyethylene plastic pipe (HDPE SDR 11), minimum diameter of 1-1/4 inches, with tracer wire. Pressure side sewer pipe shall be equipped with a gate or ball valve prior to the connection to the gravity side sewer.
(3) Fittings and Joints:

(a) PVC Pipe and Fittings. Threaded, schedule 80 PVC pipe and fitting shall only be installed where PVC parts are required by the City’s details. Compression couplings shall only be allowed as part of the Grinder Pump Cleanout as shown in the details.

(b) HDPE Pipe and Fittings. All HDPE pipe and fittings shall be SDR 11 with electro-fusion welded socket joints. Butt welding shall only be allowed when joining two segments of pipe during installation of the 1-1/4-inch discharge line. Connection of the HDPE pipe to any threaded fittings will be with a full bore HDPE x 316 stainless steel transition fitting, 6 inches in length. Compression couplings are only allowed where shown in the Grinder Pump Cleanout detail.

(c) Grinder Pump Discharge Piping. A 1-1/4-inch-diameter threaded brass nipple, 12 inches in length, shall be installed on the grinder tank discharge hub.

(d) The Contractor that performs all HDPE joint welding shall be certified in electro-fusion socket-welding techniques.

(4) Grinder Pump Cleanout:

The Grinder Plum Cleanout shall be equipped with an in-line ball valve, tee with ball valve, and check valve and be housed in an underground utility box, with lid marked “SEWER.”

7.05 Sewer Methods of Construction

A. General Construction Requirements

The improvements shall be constructed as shown on the plans and in accordance with these Standards, Standard Details, and Standard Specifications. Manufacturer’s equipment shall be installed in compliance with specifications of the manufacturer, except where a higher quality of workmanship is required by the plans and specifications. All materials and work shall be in strict accordance with any applicable regulations of the State, County and local authorities. The Contractor shall arrange for such inspection by these agencies as may be required and shall submit evidence of their approval, if requested by the Engineer.

(1) Alignment and Staking

All work done under a Project shall be to the lines and grades shown on the plans, or to approved revisions.

(2) Inspections and Tests

(a) The Engineer shall, at all times, have access to the work for the purpose of inspecting and testing, and the Contractor shall provide proper facilities for such access and such inspection and testing.

(b) If any work is covered up without approval or consent of the Engineer, it must, if required by the Engineer, be uncovered for inspection.
(c) Before a performance test is to be observed by the Engineer the Contractor shall make whatever preliminary tests are necessary to assure that the material and/or equipment are in accordance with the plans and specifications.

(d) Written notice of deficiencies, adequately describing the same, shall be given to the Contractor upon completion of each inspection and the Contractor shall correct such deficiencies within seven days of the notice and before final inspection will be made by the Engineer, unless otherwise approved.

B. Grade Establishment

Sewer grades shall be established by means of laser beam, grade boards, lines, poles, plumb bobs or other means approved by the Engineer. The grades shall be checked at periodic intervals as directed by the engineer.

The Contractor shall replace all monuments, right-of-way markers, property stakes, etc., that are removed or disturbed, to the satisfaction of the Engineer, and in accordance with State law.

C. Manhole Excavation

Excavation for precast manholes shall be sufficient to provide a minimum of 12 inches between the manhole and the side of the excavation. The excavation shall be kept free from water until jointing has been completed. Surface water shall be diverted so as not to enter the excavation. The contractor shall maintain sufficient pumping equipment on the job to insure that these provisions are carried out.

D. Pipe Laying

Pipe laying shall be in accordance with the following.

Each pipe shall be laid with bells upgrade with the invert of the pipe to the alignment and grade shown on the plans. Care shall be exercised to insure close concentric joints and a smooth invert. Open ends of pipe and fittings shall be temporarily blocked and covered when laying is not in progress.

Water shall not be allowed in the trench during the pipe laying, joint making, and as long thereafter as is necessary, in the judgement of the Engineer, for the type of joint being used.

Existing sewage flow shall be diverted away from the segment being worked on by method approved by the Engineer.

Adjustment to the line and grade shall be done by scraping away or filling in and tamping material under the body of the pipe. Adjustment to the line and grade by wedging and blocking shall not be permitted.

The pipe shall be lowered into the trench by means of ropes, tripod, crane or any other suitable means. The pipe shall not be dropped or handled roughly. The pipe shall be checked for cracks and defects prior to use and any defective pipe rejected.
Wyes and standing services shall be installed as shown on the Standard Details and at such locations as are shown on the plans or as otherwise directed by the Engineer. These items shall not be covered until the Engineer has recorded their exact location.

E. Alignment Tolerance

Maximum deviation from established line and grade shall not be greater than 1/32 inch per inch of pipe diameter and not to exceed 1/2 inch.

No adverse grade in any pipe length will be permitted.

The difference in deviation from true line and grade between any two successive joints shall not exceed 1/3 of the amounts specified above.

F. Joints

Joint material shall be used in accordance with the recommendations of the manufacturer. Pipe handling after the gasket has been affixed shall be carefully controlled to avoid bumping the gasket and, thus knocking it out of position or contaminating it with dirt or other foreign material. Any gasket so disturbed shall be removed cleaned, re-lubricated and replaced.

Care shall be taken to properly align the pipe before joints are forced home. During insertion of the tongue or spigot, the pipe shall be partially supported by hand, sling, or crane as required to minimize lateral pressure on the gasket and to maintain concentricity until the gasket is properly positioned. Pipe deflection and straightening shall be held to a very minimum once the joint is home to prevent creep of the joint.

Sufficient pressure shall be applied in making the joint to assure that the joint is home as defined in the standard installation instructions provided by the pipe manufacturer. Sufficient restraint shall be applied to the line to assure the joints once home are held so, by tamping fill material under and alongside the pipe or otherwise. At the end of the day’s work, the last pipe shall be blocked in such a manner as may be required to prevent creep during down time.

G. Pressure Sewer Mains and Valves

(1) Pressure Main Installation

Pressure pipe as specified on the plans shall be installed as recommended by the pipe manufacturer. Pressure sewer mains shall be laid so that no high point exists except at the discharge manhole or an air release assembly.

(2) Valve Installation

Before installation, valves shall be cleaned of all foreign material. Such blocking as the Engineer may deem necessary shall be provided. The valve and valve box shall be set plumb with the valve box centered on the valve. Valves shall be opened and shut under pressure to check operation without leakage. Where valve operating nut is more than three feet below finished grade, a stem extension conforming to the Water Standard Detail must be installed.
The top of the valve box base section shall be located a minimum of 6 inches and maximum of 9 inches below finished grade. A polyethylene sheet, 8-mils thick, shall be placed between the top and base valve box sections to prevent metal to metal contact where the sections overlap.

Valve box top sections shall be adjusted flush with the finished pavement and, in those areas to be excavated for future roadway grades, enough adjustment shall be provided in the valve box to allow the top of the box to be adjusted to the required grade.

(3) Valve Box Marker Installation

Concrete marker posts shall be painted with two coats Rust-Oleum No. 2766 Hi-Gloss white paint. The marker shall be set on a line through the valve at right angles to the centerline of the road. The marker shall generally be set on the property line unless the Engineer decides another location is safer or more conspicuous. Distance to the valves shall be nearly stenciled on the post with 2-inch numerals. Valve markers shall be installed only in unimproved or unpaved areas.

H. Side Sewers

Side sewer locations as shown on the plan are approximate only.

All existing services shall be maintained during construction.

All existing side sewers shall be reconnected or replaced immediately after the trunk is laid. When replacing an existing trunk, side sewers shall be reconnected after the main is tested, when feasible.

Where applicable, all specifications contained herein for sewer materials and construction shall be held to apply to side sewers. Invert of the side sewer at the end of the stub shall be as shown on the plan or as directed by the Engineer.

Ends of the side sewer stubs shall be marked with a 2 x 4 stake, 12-feet long, with one end buried at the depth of the stub-end invert and extending vertically out of the ground. The portion of the stake above ground shall be painted white and marked with the word “SEWER” and the depth from pipe invert to ground surface, and the distance from the main to the end of the stub. An 8-gauge wire shall attach the end of the plugged stub to the 2 x 4 stake, at or above finished ground. See Standard Detail.

Slope of side sewers shall not exceed 100 percent and shall not be less than 2 percent, unless approved by the Director, to a minimum of one percent. All side sewers shall be capped.

Where change in slope is greater than 2 inches per foot, standard 1/8 bends shall be used.

I. Manholes

Manholes shall be constructed as shown in the Standard Details for standard manholes and drop manholes. Manholes shall be of precast reinforced concrete. Manhole ring and covers shall be adjusted to the elevation required by the Engineer prior to final acceptance of the work.

The manhole base section shall be placed on firm soil. If the foundation material is inadequate,
the Contractor shall use foundation gravel or bedding concrete under the normal base to support the manhole.

Manholes in easements shall be constructed to provide a stable, level grade for a minimum radius of 2.5 feet around the center of the access opening.

Manhole sections shall be placed and aligned so as to provide vertical sides and vertical alignment of the ladder steps. The completed manhole shall be rigid, true to dimension, and be watertight. Rough, uneven surfaces will not be permitted.

Where work is located in public right-of-way, not less than 10 inches (6-inch ring with 4 inches of riser section) nor more than 24 inches (6-inch ring with 18 inches of riser section) shall be provided between the top of the cone or slab and the top of the manhole frame.

The outside and inside of manhole adjusting bricks and the joints of any non-gasketed precast concrete sections shall be thoroughly wetted and completely filled with mortar, plastered and troweled smooth with 3/4 inch of mortar in order to attain a watertight surface. Mortar shall be placed between each level of adjusting bricks, riser rings, top of cone section, and bottom of iron ring.

All lift holes, if any, on precast items shall be completely filled with expanding mortar, smoothed both inside and out, to insure water-tightness. All steel loops, if any, on precast section must be removed, flush with the manhole wall. The stubs shall be covered with mortar and smoothed. Rough, uneven surfaces will not be permitted.

Channels shall be made to conform accurately to the sewer grade and shall be brought together smoothly with well-rounded junction, satisfactory to the Engineer. The channels shall be field poured after the inlet and outlet pipes have been laid and firmly grouted into place at the proper elevation. Allowances shall be made for a minimum of 0.1-foot drop in elevation across the manhole in the direction of flow. The maximum allowable drop in invert elevation across the manhole in the direction of flow shall be 1.0 feet. Channel sides shall be carried up vertically from the invert to three-quarters of the diameter of the various pipes. The concrete shelf shall be warped evenly and sloped 1 inch per foot to drain. Rough, uneven surfaces will not be permitted. Channels shall be constructed to allow the installation and use of a mechanical plug of the appropriate size. Prefabricated manhole bases with glass fiber supported plastic or PVC hard lined channels will be allowed at the Contractor's option.

All manholes located in unpaved areas shall include a concrete collar around the manhole adjusting bricks per Standard Detail S-8.

All rigid pipe entering or leaving the manhole shall be provided with flexible joints within 12 inches of the manhole structure and shall be placed on firmly compacted bedding. Special care shall be taken to see that the openings through which pipes enter the structure are completely and firmly filled with mortar from the outside to ensure water-tightness. All PVC pipe connections to manholes shall be made with gasketed coupling as approved by the City.

J. Connection to Existing Manhole

Connection to existing manhole shall be accomplished in such a manner that all existing services are maintained, that no refuse, broken brick, concrete or other extraneous matter enter into the existing sewer. The outfall shall be plugged or screened throughout the contractors operation at
the Engineer's option.

A circular opening shall be carefully core drilled in the manhole barrel on the proper alignment so that the new sewer will be in line with the center of the manhole, and at the height which will allow the new sewer to be placed at the proper grade. The opening shall be of such size as to provide clearance of not less than 1 or more than 3 inches between the outside of the pipe and the manhole wall. Pipe connections, channel forming, grouting of pipe and backfilling shall be as specified previously for standard manholes.

No additional pipe shall be connected until final set of the grout has occurred. When additional pipe is connected, care shall be taken to avoid shocks or other undue strains to the grouted pipe.

Any opening resulting from removal of existing pipe shall be filled with mortar to provide a watertight seal, unless new pipe is to be reconnected to that opening.

When any new sewer is connected to an existing manhole with an inside drop structure, the minimum angle between drop piping and existing access steps shall be 90º (1/4 of manhole circumference), or 45º for 6-inch pipe. Where minimum clearance cannot be met, the cone section shall be rotated and steps relocated to provide maximum possible clearance from drop tee and pipe. Cut existing steps flush with manhole wall and cover stubs with mortar to provide a smooth finish.

When any new sewer is connected to an existing manhole, the manhole shall be reconstructed to conform to current standards.

Upward adjustments of old, existing manholes must be done with all new parts including cone section so there is only one mismatched seam. The mismatched seam shall be reinforced with a concrete collar poured around the seam, 6 inches to 12 inches above and below the seam line, around the outside of the manhole, minimum 6-inches thick. The collar may also be sealed with the Wrapid Seal™ (or equivalent) manhole encapsulation system.

In addition, where the new manhole barrel section key is not compatible with the existing barrel section key, the new section key shall be broken off as shown in sanitary sewer Standard Detail S-9 “Manhole Section Adjustment.”

K. Cleaning and Flushing

Prior to pipe testing, all pipes shall be cleaned in the following manner:

The Contractor shall furnish an inflatable rubber ball of a size that will inflate to fit snugly into the pipe to be tested. The ball may, at the option of the Contractor, be used without a tag line; or a rope or cord may be fastened to the ball to enable the Contractor to know and control its position at all times. The ball shall be placed in the last cleanout or manhole on the pipe to be cleaned and water shall be introduced behind it. The ball shall pass through the pipe with only the force of the water impelling it. All debris flushed out ahead of the ball shall be removed at the first manhole where its presence is noted. In the event cemented or wedged debris or damaged pipe stops the ball, the Contractor shall remove the obstruction.
L. Testing of Gravity Sewers

Method of testing gravity sewers shall be at the option of the Contractor unless otherwise specified herein.

(1) Water Test

Tests for water tightness shall be made by the Contractor in the presence of the Engineer. A test shall be made for every section of the sewer, including the side sewers, after completion of backfill. Where the groundwater table is so high as to preclude a proper exfiltration test, an infiltration test may be used. The exfiltration test shall be made by plugging the inlets of the lower manhole and filling the test section with water to a height of 6 feet above the crown of the sewer at the upper end of the sewer being tested.

The time of exfiltration tests shall be a minimum of 1 hour. The leakage (exfiltration or infiltration) during the test shall not exceed the following allowances:

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<th>6 Ft.</th>
<th>8 Ft.</th>
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Repair by chemical grouting will not be allowed.

Where the groundwater exceeds a height of 6 feet above the crown of the sewer at the upper end of the test section, the section shall be tested by infiltration. The infiltration test shall be conducted by placing a plug in the inlet sewer at the upper manhole and inserting an approved measuring device in the inlet sewer at the lower manhole. Prior to making measurements, care shall be taken to assure that the flow over or through the measuring device is constant. A minimum of four measurements shall be made over a period of one hour.

The acceptance water test shall be made after backfilling has been completed and compacted, and ATB has been placed in areas to be paved.

(2) Air Testing

The Contractor may use a low-pressure air test at his option. The following procedures shall be used on conducting the low-pressure air test. The Contractor shall furnish all facilities and personnel for conducting the test under the observation of the Engineer. The equipment and personnel shall be subject to the approval of the Engineer.

The requirements of this specification shall be considered satisfied if the time required in seconds for the pressure to decrease from 3.5 to 2.5 pounds per square inch greater than the average back pressure of any groundwater is at least as follows:
The use of air pressure for testing sewer lines creates hazards that must be recognized. The Contractor shall be certain that all plugs are securely blocked to prevent blowouts. An air supply regulator shall be installed on the air supply line to the sewer that shall permit a maximum of 10 psi in the line to be tested. All pressure shall be relieved from the sewer section being tested prior to removal of test plugs.

(3) Deflection Test for Flexible Pipe

Sanitary sewers constructed of flexible pipe shall be deflection tested not less than 30 days after the trench backfill and compaction has been completed, and ATB has been placed in areas to be paved.

Testing shall be conducted on a manhole to manhole basis and shall be done after the line has been completely flushed out with water.

Contractor shall locate and repair any sections failing to pass the test and to retest the section.

M. Television Inspection

The Developer shall provide the City with a DVD inspection of all sanitary sewers prior to final project acceptance.

If defects are found or suspected during the warranty period, the City may also require that the Developer provide video inspection of any or all sanitary sewers before expiration of the warranty.

The Contractor shall correct all deficiencies found during television inspection.

N. Testing of Pressure Sewer Mains

Prior to acceptance of the project, the pressure line shall be subjected to a hydrostatic pressure test of 100 psi at the high point of the line. Any leaks or imperfections developing or occurring under the test pressure shall be remedied by the Contractor before final acceptance of the project. Leakage shall be measured by approved means. Test pressure shall be maintained while the entire installation is inspected. The Contractor shall provide all necessary equipment and shall perform all work connected with the tests. Insofar as is practical, test shall be made with pipe joints and fittings exposed for inspection. Maximum allowable leakage shall be 0.05 gallons per hour per inch of pipe diameter per 100 feet of pipe.

<table>
<thead>
<tr>
<th>Size of Pipe</th>
<th>Seconds per Lineal foot of Pipe</th>
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<tbody>
<tr>
<td>4 inch</td>
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<tr>
<td>6 inch</td>
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<td>8 inch</td>
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<td>10 inch</td>
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<tr>
<td>12 inch</td>
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<td>15 inch</td>
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<tr>
<td>18 inch</td>
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<tr>
<td>21 inch</td>
<td>3.20</td>
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<tr>
<td>24 inch</td>
<td>4.18</td>
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</table>
O. Vacuum Testing of Precast Manholes

Vacuum testing (negative air pressure) may be required by the City in areas of high groundwater. Prior to backfilling, each manhole shall be tested using the vacuum testing method specified in ASTM C1244 to ensure that the manhole is watertight. Testing of manholes constructed on existing sewer lines where flow must be maintained will not be required.

Backfilling of the manhole prior to testing is permitted.

The Contractor shall furnish all equipment and labor required, including necessary piping/hoses, pneumatic plugs, test vacuum equipment (vacuum pump and vacuum plate/head), vacuum gauge, and second timer. The vacuum gauge shall have a maximum range of 0 to 30 inches of mercury (Hg) and the vacuum gauge intervals shall be in 1/2-inch increments.

The vacuum test shall be performed by the Contractor in the presence of City of North Bend personnel. The Contractor shall furnish test reports of each test to the Engineer.

Testing

If a coating or lining has been applied to the interior of the manhole, the vacuum test must not be performed until the coating or lining has been cured according to the manufacturer’s recommendations. In addition, this existing manhole must be structurally sound prior to vacuum testing.

Drop connections shall be installed prior to testing.

The vacuum test shall include testing of the seal between the frame and the concrete cone, slab, or grade rings.

After cleaning the interior surface of the manhole, the Contractor shall place and inflate pneumatic plugs in all the connecting pipes with the exception of sewer services to isolate the manhole. Complete sewer services entering the manhole shall be a part of the manhole vacuum test.

The vacuum plate/head shall be placed on top of the manhole lid frame. The vacuum pump shall be connected to the outlet port with the valve open. When a vacuum of 10 inches of mercury has been attained, the vacuum pump shall be shut off. With the outlet valve closed, the time shall be measured for the vacuum to drop to 9 inches. Following are the minimum allowable test times for manhole acceptance at the specified vacuum drop:
## SANITARY SEWERS

### Depth of Manhole (feet) vs. Time (Seconds)

<table>
<thead>
<tr>
<th>Depth of Manhole (feet)</th>
<th>Time (Seconds)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>48-Inch Dia.</td>
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<td>64</td>
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<td>28</td>
<td>69</td>
</tr>
<tr>
<td>30</td>
<td>74</td>
</tr>
<tr>
<td>Add for each additional 2 feet of depth:</td>
<td>5</td>
</tr>
</tbody>
</table>

Measurements taken from ASTM C1244

All pneumatic plugs shall be removed from the manhole after the test.

**Failure**

Any manhole that fails the initial vacuum test must be repaired with an approved non-shrink grout material for manholes. The Contractor shall excavate the manhole and apply non-shrink grout on the interior and exterior of the manhole in the leaking area or the entire surfaces. Any repair between the pipes and the manhole (gasket waterstop area) requires the removal of the pipe by means of coring and the installation of a new pipe with waterstop (grouting the annular opening). Upon completion of the repairs, the manhole shall be retested as described in the above test procedures.

Any manhole that ultimately fails the vacuum test is rejected and shall be entirely removed and replaced with a new manhole. The new manhole shall not be backfilled until it has been tested and passed the above test procedures.

**Acceptance**

The manhole shall have passed the vacuum test if the manhole vacuum does not drop below 9 inches of mercury during the minimum specified test period.

**P. Oil/Water Separator and Grease Interceptor**

Oil/water separators and grease interceptors shall be constructed as shown in the Standard Details. Excavation for precast vault shall be sufficient to provide a minimum of 12 inches between the vault and the side of the excavation.

Vault shall be placed at proper depth to set vault cover flush with finish grade. If additional depth of cover is required over inlet or outlet piping, vault riser sections shall be installed to raise vault cover a maximum of 24 inches. Adjusting rings for manhole frame shall be manufactured from precast reinforced concrete. Total height of rings shall be from 8 inches minimum to 20 inches maximum.
The oil/water separator or grease interceptor shall be placed on firm soil. If the foundation material is inadequate, the Contractor shall use foundation gravel or bedding concrete under the normal base to support the separator.

Vault shall be placed and set plumb so as to provide vertical sides. The completed separator or interceptor shall be rigid and watertight.

The outside and inside of manhole adjusting rings, joints of precast concrete sections and the perimeter of precast baffle (grease interceptor) shall be thoroughly wetted and completely filled with mortar, plastered and troweled smooth with 3/4 inch of mortar in order to attain a watertight surface.

All lift holes, if any, on precast items shall be completely filled with expanding mortar and smoothed both inside and out, to insure water-tightness. All steel loops, if any, on precast section must be removed, flush with the vault wall. The stubs shall be covered with mortar and smoothed. Rough, uneven surfaces will not be permitted. Precast vault shall be provided with 8 inch diameter knockouts at all pipe openings or have openings core-drilled prior to installation.

All rigid pipe entering or leaving the structure shall be provided with flexible joints within 12 inches of the manhole structure and shall be placed on firmly compacted bedding. Special care shall be taken to see that the openings through which pipes enter the structure are completely and firmly filled with mortar from the outside to ensure water-tightness. All PVC pipe connections to vault shall be made with gasketed coupling as approved by the City.

Q. Commercial Clean-Out with Test Sampling Tee

Test sampling tees shall be placed outside the building no more than 24-inches downstream of a cleanout extended to grade, enclosed in a cast concrete meter box as shown in the Standard Detail. The enclosure shall be supported on minimum 2-inch-thick gravel base. The capped orifice shall be a maximum of 4 inches from finished grade. The sampling tee shall be installed so that it opens in a direction at right angles to and vertically above the flow of the pipe. The sampling tee shall be accessible at all times for compliance determination sampling.

The cleanout shall be brought to grade and provided with a cast iron ring and cover imbedded in 3,000 psi cement concrete as shown in the Standard Detail.

R. Preconstruction Photos for City Contracts

Before commencing any construction work as described in the plans and specifications, the Contractor shall provide photographs of pre-existing conditions of the area that will be disturbed during construction operations.

Photographs will be obtained as follows:

- Every 25 feet interval in easements.
- Every 50 feet interval in paved areas.
- And any other location as directed by the Engineer.

The photographs shall be taken with a digital camera with the photographs saved on a CD and provided to the City.
S. **Trench Excavation**

Before commencement of trenching provide a sediment trap for all downhill storm drain catch basins per City of North Bend standard detail. Plastic sheeting must be available on-site. In case of rain any stockpiled material must be covered and secured.

Clearing and grubbing limits may be established by the Engineer for certain areas and the Contractor shall confine his operations within those limits. Debris resulting from the clearing and grubbing shall be disposed of by the Contractor.

Trenches shall be excavated to the line and grade designated by the Engineer and in accordance with the Standard Details. Trenches shall comply with OSHA and WISHA requirements regarding worker safety.

The trench shall be kept free from water until joining has been completed. Surface water shall be diverted so as not to enter the trench. The Contractor shall maintain sufficient pumping equipment on the job to insure that these provisions are carried out. The Contractor shall perform all excavation of every description and of whatever substance encountered as part of his trench excavation cost. Unsuitable material below the depth of the bedding shall be removed and replaced with satisfactory materials as determined by the Engineer.

Trenching operations shall not proceed more than 100 feet in advance of pipe laying except with written approval of the Engineer.

Providing sheeting, shoring, cribbing, cofferdams, and all aspects involved therein shall be the sole responsibility of the Contractor. Such trench/excavation protection shall comply with the requirements of Section 2-09 *Structure Excavation* and Section 7-08.3(1)B *Shoring* of the Standard Specifications, Chapter 49.17 RCW of the Washington Safety and Health Act, and Part N – Excavation, Trenching, and Shoring of Chapter 296-155 WAC.

When trenching operations take place in the public right-of-way, the pavement, and all other improvements, shall be restored as required by the Right-Of-Way Use Permit.

Prior to excavation through asphaltic concrete, or Portland cement concrete surface areas, the pavement shall be removed to a width of 24 inches greater than the top width of the trench. Prior to trenching through areas improved with lawn or through fences, rockeries, shrubs, plants, or other improvements, these improvements shall be removed, stored and protected. After the sewer installation is complete, the improved area shall be returned to a condition equal to or better than the area before the sewer installation. If any stored improvements are not suitable for reuse after construction, they shall be replaced with an improvement of equal or better quality.

T. **Trenchless Construction**

The use of trenchless construction methods such as pipe bursting and horizontal directional drilling shall be considered by the City on a case-by-case basis under the following conditions:

1. HDPE DR 26 or thicker-walled pipe required.
2. Romac 501 transition couplings are required at both ends.
3. The installed pipe must be electronically located and marked on the ground for
measurement in order to draw the as-built schematics.

(4) The pipe must be video-taped following installation, with water running. The tape must be provided to the Inspector to approve the installation or require corrections.

(5) Pipe bursting is not allowed on private property or Right-of-Way without the appropriate permission, such as an easement or Right-of-Way use permit.

U. Sheeting and Shoring

The Contractor shall provide and install sheeting and shoring as necessary to protect workmen, the work and existing utilities and other properties in compliance with OSHA and WISHA requirements. All sheeting and shoring above the pipe shall be removed prior to backfilling. Sheetings below the top of the pipe may be cut off and left in place.

All trenches and excavations more than 4 feet in depth shall be shored in compliance with applicable Federal and State regulations. Shoring shall be required in all street excavation. Sloping to the angle of repose will be permitted only in non-critical off-street areas.

Removal of the sheeting and shoring shall be accomplished in such a manner that there will be no damage to the work or to the other properties.

V. Trench Dewatering

When water is encountered to a degree that a successful trenching and pipe laying operation is hampered, dewatering will be the responsibility of the Contractor. Determination of the method to be used to dewater trenched areas will be the responsibility of the Contractor, but any method used must be in accordance with the specifications and requirements of the Washington State Department of Ecology and the Local Jurisdiction.

W. Bedding, Backfill, and Compaction

(1) Pipe Bedding Construction Requirements

Pipe bedding shall conform to Section 7-08.3(1)C Bedding the Pipes of the Standard Specifications as modified herein in order to provide uniform support along the entire pipe barrel, without load concentration at joint collars or bells.

Jetting is not an allowable method to compact the bedding materials.

(2) Trench and Structure Backfill Construction Requirements

Backfilling shall be accomplished in accordance with Section 2-09 Structure Excavation of the Standard Specifications as modified herein:

In paved areas, trench backfill material shall be compacted to 95 percent maximum dry density per Section 2-03.3(14)D Compaction and Moisture Control Tests of the Standard Specifications.
In unpaved areas, trench backfill material shall be compacted to 90 percent maximum dry density per Section 2-03.3(14)D Compaction and Moisture Control Tests of the Standard Specifications.

The Contractor shall arrange for compaction testing to be performed by a certified technician. The Contractor shall provide the Engineer with one copy of the compaction test report within 24 hours of the completion of the test.

Compaction tests shall be made at a maximum of 4-foot depth increments with a minimum of one test for any backfilling less than 4 feet in depth. The maximum space between trench tests shall not exceed 100 linear feet. At least one compaction test shall be performed at each backfilled structure or for every 50 CY of backfill placed. If the structure (e.g., manhole) is part of a pipeline trench, then trench compaction testing frequency governs.

For mechanical compaction methods (“hoe pack,” vibratory roller, static roller, etc.), the maximum backfill lift shall not exceed 2 feet between the application of compaction equipment.

For manual compaction methods (all walk-behind equipment, “jump jack,” etc.), the maximum backfill lift shall not exceed 1 foot between the application of compaction methods.

Jetting is not an allowable method to compact the trench backfill.

Surface restoration shall be as specified in the Right-of-Way Use Permit and as shown on the approved plans.

(3) Foundation Gravel Construction Requirements

Foundation gravel under manholes, catch basins, inlets, vaults, and other precast concrete structures shall be placed in layers not more than 6-inches thick and compacted to provide a firm and level base on which to place the structure. Unless shown otherwise on the Contract Plans, the minimum thickness of foundation gravel under precast concrete structures is 6 inches.

(4) Controlled Density Fill Construction Requirements

Controlled Density Fill (CDF) can be proportioned to be flowable, non-segregating, or excavatable by hand or machine. Desired flowability shall be achieved with the following guidelines:

- Low Flowability below 6-inch slump
- Normal Flowability 6 to 8-inch slump
- High Flowability 8-inch slump or greater

CDF shall be placed by any reasonable means into the area to be filled.

CDF patching, mixing and placing may be started if weather conditions are favorable, when the temperature is at 34 degrees F and rising. At the time of placement, CDF must have a temperature of at least 40 degrees F. Mixing and placing shall stop when
temperature is 38 degrees F or less and falling. Each filling stage shall be as continuous an operation as is practicable. CDF shall not be placed on frozen ground.

Trench section to be filled with CDF shall be contained at either end of trench section by bulkhead or earth fill.

When used to support existing asbestos cement (A.C.) pipe, the flowable CDF shall be brought up uniformly to the bottom of the A.C. pipe, as shown on the plans, or as directed by the Engineer.

Contractor shall provide steel plates to span utility trenches and prevent traffic contact with CDF for at least 24 hours after placement or until CDF is compacted or hardened to prevent rutting by construction equipment or traffic.

X. Adjust Existing Structure to Grade

(1) Manhole and Cleanout adjustment

Existing manholes and cleanouts affected by the overlay as shown in the Plan shall be adjusted to grade within three working days of overlay.

Adjustment of existing manholes shall be in accordance with Section 7-05.3(1) of the Standard Specifications. Cleanouts adjusted to grade shall conform to the Standard Detail.

(2) Valve Box Adjustment - Pavement Overlays and Sidewalks

(a) Raising the existing valve box cover less than 2 inches shall be accomplished by adjusting the existing top section of the valve box.

(b) Raising the existing valve box cover 2 inches or more, shall be accomplished by either adjusting the existing top section or be inserting a valve box paving riser into the existing valve box top. The paving riser shall be epoxied to the valve box.

(c) If the valve box base section needs to be extended, the contractor shall install a 4-inch-diameter cast iron soil pipe, with bell-end of the soil pipe inserted over the top of the existing valve box base section. The spigot-end of the soil pipe shall be located a minimum of 6 inches and maximum of 9 inches below finished grade. The valve box top section shall be slipped over the soil pipe and adjusted to final grade. A polyethylene sheet, 8-mils thick, shall be placed between the valve box and soil pipe to prevent metal to metal contact where the sections overlap.

Final box adjustment shall leave the top of the valve box no higher than final grade, and no lower than 0.5 inch below final grade.

In asphalt concrete pavement overlay areas, excavation of the valve box to be raised shall be accomplished by sawcutting or neat-line jackhammering the pavement a minimum of 12 inches around the perimeter of the valve box.
Final adjustment of valve boxes shall be made within 20 calendar days following the final overlay.

(3) Valve Box Adjustment - Unimproved Areas

Adjustment of valve box covers located outside paved areas or sidewalks can be accomplished using a 12-inch valve box adjusting sleeve inserted into the existing valve box top section.

Y. Abandoning Facilities

(1) Abandoning Pipe in Place

The Contractor shall completely fill the pipeline to be abandoned with sand, concrete, or controlled density fill; or remove it.

(2) Abandoning Structures

Abandonment of structures shall be completed only after piped systems have been properly abandoned. Structures within the public right-of-way, a public easement or which are part of the publicly-owned and maintained system must be:

- Removed completely according to Section 2-02 of the current Standard Specifications; or
- Abandoned according to Section 7-05.3 of the current Standard Specifications, except that controlled density fill may be used in lieu of sand if desired, provided no conflicts with new utilities or improvements arise.

Z. Lawn Removal and Replacement

Any lawn damaged by the Contractor outside of limits shown on the plan shall be restored to conditions existing prior to construction, contractor shall take care to limit the area of disturbance.

When lawn removal and replacement is called for, a sufficient width (at least 2-feet wider than outside width of backhoe wheels or tracks) of lawn turf shall be removed prior to beginning excavation so that heavy equipment does not run over the lawn.

The area of the sod to be removed shall be laid out in squares or strips of such size as to provide easy handling and matching. The sod shall then be carefully cut along these lines to a depth of 4 inches, taking care to keep cuts straight and strips of the same width. After the sod has been cut vertically, it shall be removed to a uniform depth of approximately 3 inches with an approved type of sod cutter.

This operation shall be performed in such manner as to ensure uniform thickness of sod throughout the operation.

Prior to installation of new sod, the scalped area shall be carefully shaped to proper grade and be thoroughly compacted. Wherever the construction operations have resulted in the placement of unsuitable or poorer soils in the area to be resodded, the surface shall be left low and covered with top soil.
The finished grade, after shaping and compacting the top soil, shall be thoroughly dampened prior to and immediately before replacing the sod. The sod shall be replaced to the required grade, taking care to butt each piece tightly against the adjacent one. Upon completion, the sod shall be dampened and rolled with a lawn roller.

All tools used shall be of the type specially designed for the work and be satisfactory to the Engineer. In no case shall sod be removed by the use of a mattock or other tools which will not meet requirements specified herein.

Sod shall be a 4-way blend of Ryegrasses.

AA. Boring Under Roots

Boring under the root systems of trees (and plants) shall be accomplished by excavating a trench or pit on each side of the tree and then hand digging or pushing the pipe through the soil under the tree. The pit walls shall be a minimum of 7 feet from the center of the tree and shall be sufficient depth to lay the pipe at the grade shown on the plan and profile.

BB. Highway and Railroad Crossings

Interstate, state, or county highway and railroad crossings require the placing of steel, cast iron or concrete pipe casing by jacking or tunneling and laying the carrier pipe within the casing.

CC. Boring and Jacking Steel Casing

The Contractor shall verify the vertical and horizontal location of existing utilities. If required to avoid conflicts and maintain minimum clearances, adjustment shall be made to the grade of the casing.

The pipe shall be bored and jacked where indicated. The Contractor shall remove or penetrate all obstructions encountered. If groundwater is found to be a problem during boring operations, the Contractor shall do all that is necessary to control the flow sufficiently to protect the excavation, pipe and equipment so that the work is not impaired. Any pipe damaged during the boring and jacking operation shall be repaired by the Contractor in a manner approved by the Engineer.

Special care shall be taken during the installation of the bored and jacked pipe to insure that no settlement or caving be caused to the above surface. Any such caving caused by the placement of the pipe shall be the Contractor's responsibility and he shall repair any area so affected as directed by the Engineer.

During the jacking operations, particular care shall be exercised to prevent caving ahead of the pipe which will cause voids outside of the pipe. If voids exist, the Contractor shall drill through the wall of the pipe and fill the voids with a pumped cement grout. All voids shall be filled to the satisfaction of the Engineer.

The carrier pipe shall be installed in the casing as shown on the drawings. Where length of the casing exceeds 10 feet, the Contractor shall support carrier pipe with casing spacers as shown in the Standard Detail. The casing pipe shall not be backfilled with sand and grout. The casing ends shall be sealed with manufactured rubber end seal device.
Boring pits shall be backfilled with select native material and compacted to 95 percent maximum dry density as determined by Section 2-03.3(14)D, “Compaction and Moisture Control Tests,” of the Standard Specifications. The Contractor shall provide sufficient select backfill material to make up for the rejected material.

All disturbed ground shall be restored to its original condition or better.

DD. Working with Asbestos Cement Pipe

When working with asbestos cement pipe, the Contractor is required to maintain workers’ exposure to asbestos material at or below the exposure limit as prescribed in WAC 296-62-07705 State/Federal Guidelines and Certification.

EE. Asbestos Cement Water Main Crossings

Where new utility line crosses below an existing AC main, the AC pipe shall be replaced with DI pipe to 3 feet past each side of trench as shown on the Standard Detail. Alternatively, where directed by the Engineer, the trench shall be backfilled with controlled density fill (CDF, aka flowable fill) from bottom of trench to spring line of the AC main.

FF. Clearances/Other Utilities

If the minimum vertical distance between utility pipes is less than 6 inches and such installation is approved by the City, a pad shall be placed between the pipes. The pad shall be O.D. x O.D. x 2.5-inches thick minimum or as required to protect the pipes. Above O.D. is equal to the outside diameter of the larger pipe. The pad shall be a polyethylene foam plank (Dow Plastics Ethafoam™ 220), or approved equal. Additional measures may be necessary to ensure system integrity and may be required as evaluated by the City on a case by case basis.

GG. Individual Pressure Systems

Sewer grinder pumps shall be installed in accordance with the manufacturer’s recommendations, and all applicable building codes and state regulations. The grinder pump tank and control panel shall be installed for easy access in performing all maintenance and repair activities.

7.06 Side Sewer Regulations

A. General

The following requirements govern side sewer construction in the sewer service area. These standards apply to sewerage facilities from the point of connection to the public sewer system (end of a side sewer stub, mainline tee/wye, or a hole-cut into a sewer main) to the building.

B. Connection Required

Whenever connection to the sewer system is required, the property owner shall remove any connection to a cesspool, septic tank, or other on-site wastewater disposal facilities and direct connection should be made to the sewer system. Former facilities must be abandoned per King County Health Department regulations.
C. Responsibility of Side Sewer Contractor

The licensed side sewer contractor shall be responsible for complying with all requirements of the City related to side sewer construction, for any and all actions or omissions of his employees, and for any damage done to existing improvements and utilities encountered during any excavation.

D. Side Sewer Permit

(1) Permit Application Requirements

In making application for a side sewer permit, the owner or side sewer contractor shall furnish the City with a drawing showing:

(a) The size and location of structures on the property.

(b) The full course of the proposed side sewer from the public sewer in the street to the structure. Single-family residences are exempt from this requirement unless installing a joint use line.

If trenchless methods are being proposed for installing or rehabilitating a side sewer, provide documentation describing the method(s) and materials to be used.

Any street opening permits required to complete installation of a side sewer must be obtained prior to acceptance of the permit application.

The Applicant must show that any easements that may be required for installation of the side sewer have been obtained and recorded with King County.

All permit fees required by the City must be paid with the permit application.

(2) Permit Restrictions

(a) No permit will be issued for side sewer connection before the public or private sewer system is accepted by the City.

(b) No work shall be started on any private or side sewer without a permit.

(c) No licensed side sewer contractor shall do any side sewer work under any other person’s permit.

(d) No side sewer work shall be done without approval and inspection by the City.

(3) Work on Private Property

The owner is the only person authorized to install and repair side sewers on his own property other than a licensed side sewer contractor.
(4) Work on Public Property

Only a licensed side sewer contractor may be issued a permit for side sewer work in a public right-of-way.

(5) Old Side Sewers for New Buildings

When an existing structure is removed and new structure is constructed, a new permit is required, and any existing side sewer that does not meet the current requirements of the City shall be replaced.

(6) Other Permits Required

The issuance of a side sewer permit by the City shall not relieve the permit holder from the responsibility of obtaining such other permits or licenses as may be required by the City of North Bend, the county, or other cities or towns in whose jurisdiction the side sewer is installed.

(7) Posting Side Sewer Permit

The contractor’s side sewer permit shall be available at the job and must be readily accessible to the inspector. No inspection will be made unless such permit is readily available at the job site.

E. General Notification Requirements

All side sewer cleaning contractors and/or plumbers, side sewer contractors, and owners shall notify the City of such operations prior to cleaning existing side sewers (as distinguished from plumbing and septic tank facilities).

F. General Construction Requirements

(1) General

All materials and methods of construction for side sewers shall be equal to those used for sewer mainline construction, unless otherwise listed herein.

(2) Restoration of Thoroughfares and Right-of-Ways

It shall be the responsibility of the licensed side sewer contractor to cut the road surface, dig a trench, lay the pipe, make the connection to the wye or tee, backfill the trench and restore the roadway surfacing and vegetation within the limits of any thoroughfare or right-of-way, public or private. Such work shall be performed as quickly and with as little hindrance to traffic as possible, and in strict accordance with the requirements of the City, the county, or other city or town within whose jurisdiction said thoroughfares or right-of-way is located.

(3) Inspections

After the side sewer permit is obtained, arrangements for inspection of a side sewer installation shall be made with the City, 24 hours in advance by the side sewer contractor. The City reserves the right to set the time for inspections.
An extra charge shall be made by the City for each visit to any person who requests any inspection after regular hours on a workday, or on a weekend or holiday. The side sewer contractor will be billed for hours beyond that included in the permit fee.

(4) Site Safety

The following minimum requirements shall apply to safety practices to be followed by licensed side sewer contractors while performing permitted side sewer work in the sewer service area:

Barricades - Before beginning excavation in a public area there shall be at the site sufficient barricades to properly protect the work. The barricades shall be illuminated during the nighttime hours with a minimum of four flares or flashing signals.

Trench Covering - All excavations or trenches within a public area or within four feet of a public area must be temporarily covered at night and during hours of work site inactivity.

Ditch Pumps - During pipe laying, a ditch pump shall be available at the site.

Shoring - The contractor shall have immediately available for use sufficient shoring to adequately protect workers where unstable ground conditions are encountered, in accordance with OSHA and WISHA requirements.

Flagger - A flagger must be posted whenever work is underway in a public thoroughfare.

(5) Site Cleanup

The side sewer contractor shall remove all debris and excess excavation and shall repair all damage, public or private, in kind immediately after backfilling.

(6) Failure to Restore Excavations

If any excavation is left open beyond a reasonable length of time, the City may cause the excavation to be backfilled and the public way restored. Any cost incurred in such work shall be charged to the owner or side sewer contractor in charge of such work, and shall be payable immediately to the City upon written notification of the amount thereof given to the contractor or posted at the location of the work.

(7) Failure to Complete Side Sewer Work

If any work done under a side sewer permit is not in accordance with provisions of the requirements of the City and if the contractor or person doing the work fails and/or refuses to properly construct and complete such work, notice of such failure or refusal shall be given to the owner or occupant of the property. The City may cause the work to be stopped. If the work, in the opinion of the City, constitutes a hazard to public safety, health or the public sewer, such work may be completed by the City. The cost of such work and any materials and administrative services necessary therefor shall be charged to the owner and/or contractor and shall be payable by the owner and/or contractor immediately upon written notice given by the City of the amount thereof or by posting a notice thereof on the premises.
SANITARY SEWERS

Such cost shall constitute a civil debt owing to the City jointly and severally by the persons who have been given notice as herein provided. The debt shall be collectable in the same manner as any other civil debt owing to the City.

G. Side Sewer Fittings Requirements

(1) Bends and Wyes

All changes of direction shall be made with bends, wye branches or a combination of wye branch and bends.

(2) Side Sewer Cleanouts

The following specifications shall apply for all side sewer cleanouts except as provided for in Section 7-06 I “Joint Side Sewer Cleanouts”.

(a) All changes of direction greater than forty-five degrees will be made with a wye branch and bends as required. Where wye branches are used, a cleanout should be included per the Standard Details.

(b) A cleanout shall be required a minimum of 36 inches from all buildings unless permission to omit or change the location of such cleanout has been received from the City.

(c) Cleanouts, including those for commercial properties shall be installed at locations designated by the City but in no case shall distance between cleanouts exceed 100 feet.

(d) A cleanout shall be the same diameter as the pipe down grade to which it connects.

(e) On long runs of pipe, manholes may be installed, or be required, in lieu of cleanouts.

(f) Suitable rings and covers of a type designated by the City shall be used for all cleanouts on commercial and multi-family property and such rings shall be cast in a concrete block per the Standard Details.

(g) All cleanouts shall extend to the ground surface.

(3) Test Tees

A test tee shall be provided at the point of connection to the sewer main and at any other required point or points in order to insure that all portions of the side sewer or private sewer can be tested.

(4) Side Sewer Acceptance

It shall be the responsibility of the side sewer contractor to install all risers, cleanouts, casting, concrete blocks, etc., required before the installation will be approved by the
H. Joint-Use Side Sewer

(1) Pipe Size for Joint Side Sewers

If a side sewer serves two residential structures, 6-inch pipe shall be used from the public or private sewer in the street to each wye at the confluence of the separate side sewers. Six-inch pipe shall be used when crossing a property outside the lot to be served.

(2) Joint Side Sewer Cleanouts

A maximum of two residential structures may be connected to a single side sewer. A 6-inch cleanout extending to within eighteen inches of the ground surface will be required at the wye where the upper connection is made.

(3) Joint-Use Maintenance Easement Agreement

Joint-use maintenance easement agreements are required when a property owner requires service through another property, or when two or more services are provided off of a common side sewer.

I. Connection Requirements

(1) Sewer Taps

Sewer hole-cuts (6-inch minimum diameter) on 8-inch diameter and larger concrete, metallic and clay pipe shall be performed by a qualified coring contractor at the Contractor’s expense in the presence of the Inspector. Contact Public Works to schedule an inspection appointment 48 hours in advance (not including weekends and holidays).

Cores shall be made at the 10 o’clock or 2 o’clock positions. The pipe coupon shall be provided to the Inspector. The cored hole shall be free of lips, burrs and other defects that may catch debris. Jagged, non-circular, improperly sized and/or mis-located cores and cracked or otherwise damaged pipe sections shall require that the damaged pipe section be replaced with a PVC tee and mechanical, Romac-style couplings on concrete, metallic and clay pipe, and rigid PVC couplings on PVC pipe. Flexible rubber couplings (e.g., Fernco and Caulder couplings) are not allowed on the sewer main or side sewer.

(2) Connecting Pipe Material

If the type of wye or tee provided in the sewer system does not match the proposed side sewer pipe joint detail, a short transition piece shall be jointed to the wye branch or tee by means of a gasket of the type used in the sewer system where possible. If this gasket type is not available, careful caulking with an approved caulking material made especially for that purpose may be used. The balance of the side sewer shall then be constructed with compression-type flexible gaskets up to the point of connection with the house plumbing.
(3) Tee or Wye Connections

All tee and wye connections must be clean and visible during inspection. The first length of pipe installed at the tee or wye shall not be more than 2-feet long.

(4) Connection to Plumbing

Connection to the house soil pipe shall be made by means of a flexible clamp type coupling or other approved method.

J. Excavations

(1) Measurements Furnished by the City

Excavations shall be made at the measurements furnished by the City for the location of the wye, tee, or side sewer stub.

(2) Main Sewer Check

The licensed side sewer contractor must check the depth of the main sewer at manholes on each side of wye location before starting to excavate for side sewer.

(3) Prospecting For Stub

If the wye, tee, stub, or riser is not located at the measurements as furnished, the contractor shall prospect 4 feet in all directions from the distance and depth given. If such prospecting fails to disclose the stub, the contractor shall immediately contact the City and report the circumstances. Upon receipt of such report, a City representative will promptly visit the site and render further assistance.

K. Laying Pipe

(1) Grade

All sewers shall be laid true to grade with the bell up grade.

(2) Foundation Clearance

Side sewers parallel to the foundation wall of any building shall be laid not less than 30 inches therefrom.

(3) Minimum Cover for Side Sewer

In addition to minimum cover required by 7-03 H:

(a) Minimum cover for side sewers crossing a ditch in the public way shall be 2'-6", below the bottom of the ditch.

(b) On private property where less than minimum cover can be maintained, approvals may be obtained from the City for installing by using alternate pipe materials.
(c) Minimum cover for side sewers at the property line shall be 5 feet.

L. Inspection and Testing

(1) Covering Work

No trench shall be filled nor any sewer or drain covered until the work has been inspected and approved by the City.

(2) Test Stubs and Branches

The side sewer contractor must test, by flushing or other means, the existing stub or branch from main to property line to see that it is in operative condition before connecting the side sewer. The contractor will accept responsibility that the existing stub or branch is open and in a usable condition when completed. If the existing stub or branch is not found open and usable, the City must be notified before proceeding with the connection.

M. Special Requirements

(1) Gap Drains

Where back flush of sand filters of swim pools are required to be disposed of in the sanitary sewer, a gap drain will be required. Diatomaceous earth filter backwash is not allowed to be disposed of in the sanitary sewer.

(2) Gravity Flow

In any structure in which the plumbing is too low to permit gravity flow to the sewer system or private sewer, the sewage shall be lifted by artificial means and discharged into the sewer system or private sewer. When only the lower floor of a structure is too low for gravity flow, the remaining floors must flow by gravity.

(3) Pumped Side Sewers

All pump installations must meet all building codes and the current edition of the Uniform Plumbing Code.

All pump systems, check valves, cleanouts, and pipe located outside the public easement or right-of-way shall be privately owned and maintained by the property owner.

(4) Backwater Valves

Wherever a situation exists involving an unusual danger of backup, such as any structure where the plumbing drain is below the rim of the next upstream manhole, a backwater valve and a holding tank may be required per the current edition of the Uniform Plumbing Code. The effective operation of the backwater sewage valve shall be the responsibility of the owner of the side sewer. Before any installation of this nature is made, the owner will be required to comply with provisions of this regulation concerning the agreement to hold the City harmless from damage or injury.
(5) Sampling Manholes

When required by the City, the property owner shall install and maintain at their expense a manhole in the side sewer to facilitate observation, sampling, and measurement of the wastes therein. Such a manhole shall be located, if feasible, where it is accessible and safely entered from a public street. It shall be constructed and installed in accordance with plans approved by the City and shall be arranged so that flow measuring and sampling equipment and a shutoff gate or a screen may be conveniently installed.

N. Side Sewer Demolition

Any property owner who plans to demolish or remove any structure connected to the public sewer system shall notify the City and obtain a side sewer permit prior to the commencement of such work.

Side sewer demolition shall be performed prior to removal of building foundation. The side sewer for each building shall be excavated and removed from the house connection to the property line or the main as specified by the City. The Contractor shall cap the end of the side sewer to remain in place. Side sewer demolition shall be performed in the presence of the City of North Bend Sewer Maintenance Engineering Technician (inspector). The inspector will inspect the stub to determine whether the side sewer can be reused. If the inspector determines that the side sewer cannot be reused, the property owner shall either abandon the side sewer or upgrade the portion of side sewer on private property through a side sewer permit or through a sewer system extension agreement. The City will be responsible for repair or replacement of the portion of the side sewer located within public rights-of-way and public easements.

When a property is redeveloped, the property owner shall abandon side sewers that are no longer needed. In addition, the property owner shall abandon all unused provisional side sewers within the scope of the redevelopment project. The allowable methods of side sewer abandonment are as follows:

- Cap the side sewer at the main, then abandon side sewer in right-of-way by either removing the pipe, or filling pipe with controlled density fill.
- Install a cured-in-place spot repair liner in the main line to cover the side sewer opening. The spot repair liner shall extend a minimum of one foot upstream and downstream of the edge of the side sewer opening. Fill side sewer pipe to be abandoned with controlled density fill.
- Other trenchless technology proposed by the property owner, subject to City review and approval.
- For single-family sites, the City may allow the property owner to cap the side sewer at the edge of right-of-way.

O. Specifications not Covered by These Regulations

In the event a construction or installation specification relating to side sewers is not covered by this regulation, the City may require compliance with other manuals or standards as it sees fit.
7.07 Lift Stations

A. Objective

This section is intended to present information and provide an outline of the minimum general standards to be accomplished in planning and designing a sewage lift station installation within the City of North Bend service area. The City will only consider a lift station if a gravity system cannot be constructed.

Private pressure lines are not permitted within public right-of-way. If a gravity system is not feasible and a pressure system has been approved, the private pressure lines must discharge into a gravity pipe on private property and gravity flow into the public system with a standard side sewer connection.

The Developer shall submit to the City for review and approval, complete sewage lift station plans and design calculations which provide for the utility building, lift station, electrical service, SCADA controls, and auxiliary generator/transfer switch together with all accessories for a complete, automatically operating installation. The utility building is to be designed and constructed on site to meet local codes and approvals for permanent structures.

Design material and drawings shall provide all civil, mechanical and electrical details and align with all applicable codes and regulations, and good engineering practice.

B. Design Calculations

The Developer shall perform a study and make the determination to assure that the lift station installation is sized to serve the overall sewage flows generated within the potential service area. The flow study shall include the Developer’s project boundary area as well as adjacent and future service areas. The service areas shall be the areas that could be served by the installation of the lift station, and as may be further described in the City’s Comprehensive Sewer Plan.

The station’s design flow capacity shall be based on an average daily per capita flow with related peaking factors and inflow/infiltration allowances, as specified in the City’s Comprehensive Sewer Plan.

Documentation of present and future service area flow rates for lift station size and capacity determination shall be provided to the City.

The effects of the minimum flow conditions shall be estimated to ensure that retention of the sewage in the wet well will not create a nuisance and that pumping equipment will not operate too infrequently.

Lift station capacity shall meet the maximum rate of flow expected. At least two pumping units shall be provided at each lift station installation. The pump shall have sufficient capacity and capability to efficiently handle the peak hourly design flow with one pump out of service and to ensure a minimum velocity of 3 feet per second in the force main.

The force main shall be sized for a minimum velocity of 3 feet per second and a maximum of 8 feet per second. The minimum diameter of the force main shall be 6 inches.

The capacity of the receiving gravity sewer shall exceed the flow expected.
Three copies of the Design Report shall be submitted to the City for review. As a minimum, the report shall include:

1. Project description
2. Projected flows
3. Connection point with downstream capacity
4. Wet well sizing
5. Run time calculation and cycle time
6. Pump station head calculation
7. Pump selection with pump curves
8. Force main size, length and material
9. Electrical load study
10. Generator sizing
11. Odor potential calculations
12. Wet well buoyancy calculations
13. Force main surge calculations

The Design Report shall be approved by the City prior to starting the design of the lift station.

C. Location and Site Layout

The Developer shall furnish a site layout for the lift station installation.

The lift station shall be located as far as practicable from present or proposed built-up residential areas. Sites for sewage lift stations shall be of sufficient size to accommodate all expected operations and repair and replacement and for future expansion or addition, if applicable.

The easement/dedication for the lift station site shall be submitted to the City for review prior to construction of the lift station. Lift station sites not located within the plat boundary shall be deeded to the City.

The Developer shall coordinate electrical power required to the site with the electrical utility.

As a minimum, the lift station site shall provide for the following:

1. Wet well, located outside the pump house with:
   (a) Concrete pad around top of wet well
   (b) Locking heavy duty aluminum hatch (H-20 loading)
   (c) Safety system mount (see standard city detail)
   (d) Corrosion protection
   (e) Water level controls, including radar sensor and floats
   (f) Space and appurtenances for equipment removal and replacement

2. Inlet manhole, located upstream of wet well

3. Pump House with:
   (a) Standby power, including automatic transfer switch
   (b) Electrical equipment
SANITARY SEWERS

(c) Convenience receptacles, white, duplex, 20A, GFCI, in cast aluminum weatherproof boxes with full in-service covers, two inside and two outside

(d) Alarms and telemetry

(e) Control panel

(f) Interior and exterior lighting

(g) Ventilation

(h) Intake and exhaust louvers (with sound attenuation) for the generator

(i) Interior floor drain with P-trap, draining to wet well

(j) Concrete floor

(k) CMU block walls with pitched roof, gutters, and downspouts

(l) Steel entry doors

(m) Storage areas with shelves and work spaces

(4) Valve vault, including flow meters, with locking heavy duty aluminum hatch (H-20 loading)

(5) Odor control, as applicable for location and capacity

(6) Cuts and fills to provide level site for maintenance

(7) Cement concrete driveway, minimum width of 15 feet and asphalt pavement or cement concrete for access and maintenance areas

(8) Site Utilities:

(a) Drainage

(b) One-inch water service with reduced pressure backflow preventer and hose bib. RPBA may be inside pump house, or an above-ground hot box enclosure on concrete. Furnish 50 feet of 3/4-inch heavy-duty rubber hose

(c) Electrical service

(d) Natural gas meter

(e) Telephone or other communication line

(9) 6-foot-high black powder coated frame and posts together with black vinyl chain link fence with vertical vinyl slats in-laid for screening, enclosing the site with 4-foot-wide access man gate and separate vehicle access gate, 20-foot-wide minimum opening. Install information/address sign on fence, visible from street.

(10) Landscaping per City requirements.

D. Lift Station

The sewage lift station shall be a complete, pre-designed, package submersible lift station with all components supplied by Romtec Utilities, Inc. (supplier), as approved by the City. The developer shall be responsible for all costs for coordination, station siting and dedication of land, 3-phase electrical service, pre-design, design, review, submittals, permitting, inspections, site work and installation, startup, testing, training, warranties, spare parts, incidentals, and operations and maintenance manuals.

Construction shall be in compliance with OSHA, UL, ASTM, NEC, WAC, and other applicable codes and regulations. The station shall be designed, constructed and anchored to comply with
current IBC standards. All system components shall be factory tested by the manufacturer prior to delivery.

The lift station shall have, as a minimum, two sewage pumps. The pumps shall have sufficient capacity and capability to efficiently handle the peak hourly design flow with one pump and to ensure a minimum velocity of 3 feet per second in the force main. Design calculations and pump curves indicating the same shall be provided with the submittal information.

The sewage lift station supplier shall check the station during installation to determine if the installation is correct. Written confirmation of each visit and recommendations shall be provided to the City.

The sewage lift station supplier shall provide a minimum of 8 hours of training for City personnel at the station site during start-up.

The sewage lift station supplier shall provide four complete copies of maintenance and operation material to the City.

The lift station shall include:

1. Concrete wet well & related equipment. Wet well shall be constructed of 4,000 psi reinforced concrete, minimum of 6 feet in diameter, coated inside and outside for corrosion protection. All hardware and piping inside the wet well shall be stainless steel. All joints shall be rubber-gasketed. Each penetration shall be equipped with a Kor-n-Seal connection. The wet well base slab shall be pre-fabricated and self-cleaning. The wet well shall be leak tested. Incoming flows shall be directed to the bottom of the wet well. The wet well hatch shall be H20 rated heavy duty non-slip aluminum, large enough to accommodate pump guide bars, brackets, and lifting chain, a sensor mounting bracket, and precast cable trench. Hatch shall be equipped with lift-assist (hydraulic or spring).

2. Submersible pumps, “N-pump” manufactured by Flygt, with flotation pump controls. Pumps shall have stainless steel guide brackets. Pumps shall be furnished with all motors, power cable, pump bases, guide bars and brackets, discharge piping, fittings, anchors, anchor bolts and sleeves, fusion bond epoxy coated RFCA couplings, and other appurtenances as required for complete installation and satisfactory operation. Discharge piping shall be ductile iron.

3. Concrete valve vault, with Kor-n-Seal connections. Valve vault shall be equipped with swing check valves, pressure gauges, flow meters, and plug valves for each discharge line, and tee to combine the discharge pipes inside the vault, prior to connection to the force main. All connections shall be restrained. The vault hatch shall be H20 rated heavy duty non-slip aluminum. Vault shall be equipped with a floor drain. A minimum of 12 inches of open working space shall be provided around all pipe connections in the vault.

4. Control panel (inside pump house). The City has prepared sealed engineering drawings and specifications for use as electrical/control/telemetry design standards for all developer-constructed sanitary sewer lift stations. The developer’s design team shall acquire the latest version of these documents from the City and revise them according to the specific motor sizes and any optional pieces of equipment, such odor control systems, unit heaters, etc. Specific instructions regarding revisions to the drawings are included.
on the drawings. The design engineer for the developer shall complete the title block for each sheet and prepare all necessary design calculations in order to complete and seal the drawings.

(5) Electrical service, with pump disconnect panel and electrical junction box.

(6) Odor control. If required, odor control storage tank shall be installed outside pump house, on concrete pad.

(7) Natural gas fueled auxiliary generator and automatic transfer switch (inside pump house). Generator shall be designed for full station load (e.g., all pumps running together with other station accessories).

(8) Warranty. The sewage lift station supplier shall provide complete system warranty for 2 years from startup.

(9) After installation, the station startup shall be performed by the installing contractor under the supervision of the sewage lift station supplier’s authorized representative. Startup shall include 2 days of on-site field service: 1 day of full system testing and 1 day of full system training. Services shall include, but not limited to, inspection of the completed package lift station installation to ensure that is has been constructed and performs in accordance with the supplier’s instructions and recommendations, supervision of all field-testing and activation of the warranty.

E. Wet Well

(1) General

The wet well shall be precast concrete manhole sections. Joints between precast wall sections shall be confined O-ring or as otherwise approved. The poured in place slab top shall be designed with the wet well to exceed buoyant forces and shall have a cast in place flush mount safety system sleeve per City Standard Detail.

The wet well shall be provided with stainless steel or polypropylene manhole steps as specified for manholes. The wet well shall be checked to ensure all joints are watertight to prevent infiltration and exfiltration of the wet well.

The wet well floor, walls and underside of the top shall be coated to comply with the following:

Surface Preparation: Allow a minimum of 28 days cure time for concrete. Sweep blast to provide a surface profile. Surface shall be clean, dry and free of contaminants.

Exterior Surfaces: The exterior surface of the wet well shall be coated with 30 mils minimum of coal tar epoxy.

Interior Surfaces:

- Filler and Surfacer: Thencr Series 218 Filler and Surfacer. Applied as needed. After the application of the prime coat, the bugholes and surface
voids shall be filled to ensure that the finish coat is monolithic and pinhole free.

- Total System: 30-mils dry film thickness.

Comply with all conditions of the manufacturer’s specifications for preparation and application.

G. Electrical Service/Controls and Telemetry System

The City has prepared sealed engineering drawings and specifications for use as electrical/control/telemetry design standards for all developer-constructed sanitary sewer lift stations. The developer’s design team shall acquire the latest version of these documents from the City and revise them according to the specific motor sizes and any optional pieces of equipment, such as odor control systems, unit heaters, etc. Specific instructions regarding revisions to the drawings are included on the drawings. The design engineer for the developer shall complete the title block for each sheet and prepare all necessary design calculations in order to complete and seal the drawings.

(1) General

Codes and regulations exist at the federal, state, and local level dictating minimum acceptable requirements for electrical systems. The following standards shall be used as a basis for design and review:

- National Electric Code (NEC)
- Occupational Safety & Health Act (OSHA)
- State & Local Building Codes
- National Electrical Code (NESC)
- National Electrical Manufacturers Association (NEMA)
- Underwriters’ Laboratory (UL)
- Insulated Power Conductor Engineering Association (IPCEA)
- American National Standards Institute (ANSI)
- Institute of Electrical & Electronic Engineers (IEEE)

(2) Electrical Service

The local electric utility will be the primary source of electrical power. The Developer shall ascertain proper coordination between the nominal secondary delivery voltage supplied by Puget Sound Energy (PSE) or Tanner Electric Coop and the connection to the lift station equipment. The electrical service shall be 480/277V 4-wire, 3-phase, 60 hertz, with a solid neutral terminal at the disconnect or as may otherwise be required by the local utility. This shall be confirmed with the local utility and confirmed by the suppliers.

All installation shall be approved by the local utility and shall be in conformance with the NEC (current issue) UL, OSHA and County and State electrical codes.

The City shall be furnished with a certificate of final inspection by the inspecting agency.
All wire shall be stranded copper.

All conduit shall be rigid galvanized (RGS). All underground RGS conduits, elbows, and fittings shall be coated with 20 mils (minimum) of PVC coating or a half-lapped wrap of Scotchwrap No. 51. See Detail LS4.

All underground conduits shall be covered with a strip of yellow polyethylene tape placed 6-inches below finished grade and directly above the conduit.

All conduit shall have a minimum of 2 feet of cover.

Instrumentation conduits, elbows and fittings shall be RGS over their entire length.

Heating strips shall be provided for outside electrical enclosures.

H. Standby Power System

(1) General

Standby power generation equipment shall be provided at the lift station site, which will operate the lift station in the event of a commercial power outage.

The standby system shall be designed with capacity and rating to safely start and operate the entire connected lift station load, including all pumps and ancillary loads. All applicable codes shall be followed, including NEC and UPC.

The generator set shall be complete in every respect and shall include, but not be limited to the following:

(a) Generator, control panel & circuit breaker.
(b) Engine, radiator and exhaust system.
(c) Generator set (inside pump house) providing noise attenuation in compliance with Washington State Administrative Code, Chapter 173-60.
(d) Automatic transfer switch – single electric motor style.
(e) Block heater.
(f) Battery and rack.
(g) Battery charger.
(h) Conduit, wire and piping.

The generator set and transfer switch shall be a natural gas fueled City approved generator set and transfer switch.

The generator set shall include the following:

Engine

(a) Single phase, 1500 watt block heater (115 VAC)
Generator Set

(a) Mainline circuit breaker
(b) 5-year basic power warranty

Accessories

(a) Batteries
(b) Battery Charger, 2 amp, 12 VDC, 120 Vac Input
(c) Vibration Isolators, Pad Type

Control Panel

(a) Annunciator relays (12)
(b) Run relay package (3)
(c) Low coolant level shutdown
(d) Anti-condensation space heater, 120 Vac
(e) Oil temperature gauge
(f) Wattmeter
(g) Emergency stop switch

Fuel Systems

(a) Natural gas unless approved by the City. All piping shall be black iron, except for flexible vibration isolation connections at pipe ends with shut off ball valves.

Alternator

(a) Anti-condensation heater, 120 Vac

Control Features

(a) Run-stop-remote switch
(b) Remote starting, 12-volt, 2 wire
(c) Coolant temperature gauge
(d) Field circuit breaker
(e) DC voltmeter
(f) Running time meter
(g) Lamp test switch
(h) Oil pressure gauge
(i) Fault reset switch
(j) Cycle cranking
(k) 12-light engine monitor with individual 1/2 amp relay signals and a common alarm contact for each of the following conditions:

(i) Run (Green Light)
(ii) Pre-Warning For Low Oil Pressure (Yellow Light)
(iii) Pre-Warning For High Coolant Temp (Yellow Light)
(iv) Low Oil Pressure Shutdown (Red Light)
(v) High Coolant Temperature Shutdown (Red Light)
(vi) Overcrank Shutdown (Red Light)
(vii) Overspeed Shutdown (Red Light)
(viii) Switch Off (Flashing Red Light- Indicates Generator Set Not In Automatic Start Mode)
(ix) Low Coolant Temperature (Yellow Light)
(x) Two Customer Selected Faults (Red Light)

AC Meter Package

Order with NFPA 110 monitor to meet code requirements.

(a) AC voltmeter (dual range)
(b) AC ammeter (dual range)
(c) Voltmeter/ammeter phase selector switch with an off position
(d) Dual scale frequency meter/tachometer
(e) AC Rheostat (panel mounted) for + 5 percent voltage adjust

The transfer switch shall include the following:

(a) Sized for full station and auxiliary equipment load plus 25 percent.

Pole Configuration

(a) Poles - 3 (Solid Neutral)

Frequency

(a) 60 Hertz

Application

(a) Appl - Utility to Genset

System Options

(a) Three phase, 3-wire or 4-wire

Listing

(a) Listing - UL 1008

Programmed Transition

(a) Program Transition, 1-60 sec.

Applications Modules

(a) Monitor - Phase Sequence/Balance

Suitable guards shall be provided on all electrical parts to minimize the personal shock hazard.
Generator shall be broken-in sufficiently to permit application of full load immediately upon installation.

Generator supplier shall provide all tools for the generator set as recommended and required by the manufacturer.

Generator installation shall be checked by the supplier after installation to determine that the installation is correct. Written confirmation shall be provided to the City. Generator supplier shall perform a full load test for 2 hours after installation is complete. Provide resistive load bank for this test. Generator supplier shall provide a minimum of 4 hours of training for City personnel at the station site during startup.

Generator manufacturer shall provide four copies of the maintenance and operation manual. These manuals shall be complete and shall include all information necessary to allow City personnel to maintain the generator.

Generator mounting pad shall be reinforced concrete to carry the weight of the unit and shall extend a minimum of 6 inches beyond generator housing. All formed edges to be 1/2 round or 3/4-inch chamfer. A minimum of 2 feet of open spaced shall be provided around all sides of the pad for access and maintenance.

Natural gas line shall be equipped with external fuel shutoff valve.

I. Force Main

(1) The force main shall be a minimum 6-inch-diameter ductile iron Class 52 polyethylene or epoxy lined; PVC C900/C905 DR 18; or high-density polyethylene (HDPE) if approved by the City and provided with a continual positive slope. There shall be no intermediate high point between the lift station and the force main discharge point, unless properly protected with sewage air and vacuum release assembly. Minimum cover over the force main shall be 4'-0". All pipes (gravity and pressure) entering and leaving the wet well shall have flexible couplings within 18 inches of the structure. Install force main location boxes as required, shown on Detail LS-8.

Discharge of the force main to the gravity sewers shall be made at a manhole with the force main penetration core drilled and the force main aligned to discharge towards the downstream pipe. The invert of the force main shall be 0.1 feet above the invert of the downstream pipe. Channel the manhole as required. The discharge manhole shall be coated for corrosion protection, and equipped with corrosion resistant steps, ladder, and handholds.

A bypass pump connection equipped with a Cam Lock fitting and cap shall be located near the wet well in a location specified by the City, or within the valve vault. See Detail LS-2.

A surge valve shall be installed on the force main to discharge into a manhole or the wet well if high head conditions will occur as determined by the City.
(2) Testing Force Main

(a) Cleaning

All force mains shall be cleaned prior to connection of force main to pumping facilities. Contractor to provide cleaning plan for City review and approval.

(b) Test Specifications

All force mains shall be tested prior to acceptance of work. All pumps, gauges, plugs, saddles, corporation stops, miscellaneous hose and piping, and measuring equipment necessary for performing the test shall be furnished, installed and operated by the Developer. Feed for the pump shall be from a barrel or other container within the actual amount of “makeup” water, so that it can be measured periodically during the test period.

The pipeline shall be backfilled sufficiently to prevent movement of the pipe under pressure. All thrust blocks shall be in place and time allowed for the concrete to cure before testing. Where permanent blocking is not required, the Developer shall furnish and install temporary blocking.

The pipeline shall be subjected to a pressure and leakage test of a minimum of 200 pounds per square inch for a period of not less than 1 hour. The test pressure shall be applied at the low end of the section tested.

Prior to calling for the City to witness the pressure test, the Developer shall first perform a satisfactory pressure test. The allowable leakage rate per thousand feet of each size pipeline is as follows:

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Allowable Leakage Gal. per Hour per 1,000 Ft. @ 200 psi</th>
</tr>
</thead>
<tbody>
<tr>
<td>6”</td>
<td>0.64</td>
</tr>
<tr>
<td>8”</td>
<td>0.85</td>
</tr>
<tr>
<td>10”</td>
<td>1.06</td>
</tr>
<tr>
<td>12”</td>
<td>1.28</td>
</tr>
</tbody>
</table>

Defective materials or workmanship, discovered as a result of the tests, shall be replaced by the Developer at the Developer’s expense. Whenever it is necessary to replace defective material or correct the workmanship, the tests shall be rerun at the Developer’s expense until a satisfactory test is obtained.

(c) Preliminary Tests

Developer shall conduct preliminary tests and assure himself that the section to be tested is in an acceptable condition before requesting the City to witness the test.

(d) Thrust Blocks and Anchor Blocks

Fittings shall be “blocked” with poured-in-place concrete, with a firm minimum bearing against an undisturbed earth wall. Timber blocking will not be
permitted. Thrust blocks shall be poured as soon as possible after setting the
fittings in place to allow the concrete to “set” before applying the pressure test.
The concrete thrust blocks shall be in place and backfilled before beginning the
pressure test. Anchor blocks shall be allowed to set sufficiently to develop the
necessary bond strength between the reinforcing rods and the concrete anchor
before beginning the pressure test. A visqueen barrier shall be provided to
protect glands, bolts and other miscellaneous materials required for this type of
connection from the concrete. Fittings that must be blocked against an
undisturbed earth wall shall be restrained with restrained joint pipe and fittings.

J. Lift Station Test Program

The Developer shall perform, as a minimum, the following tests and provide the City written
documentation of the date performed and results obtained. Pump tests shall meet or exceed
specified capacity. The City shall be informed of the testing schedule 48 hours prior to the test
and shall be present during testing.

(1) Pump capacity by drawdown test
(2) Control panel operation
(3) Generator load test
(4) Automatic transfer reconciled to auxiliary power and back to utility power
(5) Telemetry control to terminal strip
(6) Telemetry control to SCADA system
(7) Pump vibration analysis

Fill water for testing shall be obtained in accordance with City cross-connection control practices.
APPENDIX 7-1

SEWER STANDARD DETAILS

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Sewer Approved Materials List

The following manufacturers have been approved for use for sanitary sewer construction. Where specific manufacturers are listed no other manufacturer may be used without prior approval by the Utility.

**Ductile Iron Pipe**

All manufacturers that meet the performance requirements specified under the material section of the Standards.

**Ductile Iron Fittings**

All manufacturers that meet the performance requirements specified under the material section of the Standards.

**Galvanized Iron Pipe**

All manufacturers that meet the performance requirements specified under the material section of the Standards.

**Joint Restraint Systems**

American Ductile Iron Pipe (Flex-Ring)  
EBAA Iron (MEGALUG 1100 Series)  
EBAA Iron (MEGAFLANGE 2100 Series)  
Griffin Pipe Products Company (Snap-Lok, Bolt-Lok)  
Pacific States Cast Iron Pipe Co, (Thrust Lock)  
Romac (Grip Ring), 600 Series, RomaGrip  
Romac (Bell Restraint) 611 with 316SS stainless steel nuts and bolts  
Star National Products (Shackle Products) - All rods and hardware shall be 316SS stainless steel.  
Cooper B-Line B3373 for PCV – 316SS stainless steel pipe clamps (embedded in concrete blocks)  
B3373F for Cast iron, Ductile iron, or C-900 – 316SS stainless steel pipe clamps (embedded in concrete blocks)  
US Pipe (TR FLEX)  
Uni-Flange Corporation Series 1400, or Series 1450 with 316SS stainless steel nuts and bolts

**Pipe Clamp for sewer soil cement pipe anchors**

Cooper B-Line B3373 for PCV – Hot Dipped Galvanized (embedded in Soil Cement)  
B3373F for Cast iron, Ductile iron, or C-900 – Hot Dipped Galvanized (embedded in Soil Cement)

**Couplings**

Romac (400 and 501 Series), Dresser, Smith-Blair (Rockwell), Mueller MaxiFit, Mueller MaxiStep

**Repair Clamps**

Romac Industries, Models SS1 and SS2
CASING (COATING FOR STEEL CASING)

Tnemec Hi-Build Tneme-Tar, Series 46H-413

CASING SPACERS

Pipeline Seal and Insulator Co.:

- 8" band, carbon steel with fusion-bonded coating, Model C8G-2
- 12" band, carbon steel with fusion-bonded coating, Model C12G-2

Cascade Waterworks Mfg. Co.:

Stainless Steel or hot-dip galvanized carbon steel Casing Spacers (catalog number depends on size)

Advance Products & Systems, Inc.:

- 8" band, stainless steel, Model SSI8
- 12" band, stainless steel, Model SSI12

CASING END SEALS

Pipeline Seal and Insulator Co.:

- Standard Pull-on (Model S)
- Custom Pull-on (Model C)

Cascade Waterworks Mfg. Co.:

- CCES End Seal

Advance Products & Systems, Inc.

- Molded End Seal, Model AM

VALVES

All manufacturers that meet the performance requirements specified under the material section of the Standards.

VALVE BOXES

Olympic Foundry Inc.: #VB045 Lid, Top and Base Section

RICH (VanRich Casting Corp.): Top section and lid #045 with RICH Standard Base

Inland Foundry Co., Inc.: Valve Box Paving Riser #2052-3, #2052-4, #2053-5

12-inch Adjusting Sleeve #044A
METER BOXES

6” Cleanout Service  Olympic Foundry SM30
8” Cleanout Service  Olympic Foundry SM30
Valve Chamber  Carson Industries Model #1527-18 BCFXL Meter Box with 1527
               Meter Box Cover (formerly Mid-States Plastic Model MSBCF
               1324-18 (Substitution for check valve assembly))

PVC PIPE (ASTM D-3034)  4” - 15”
All manufacturers that meet the performance requirements specified under the material section of the
Stands.

PVC PIPE (ASTM F-679)  18” - 27”
All manufacturers that meet the performance requirements specified under the material section of the
Standards.

PVC PIPE (AWWA C900)  4” - 12”
All manufacturers that meet the performance requirements specified under the material section of the
Standards.

PVC PIPE (AWWA C905)  14” – 48”
All manufacturers that meet the performance requirements specified under the material section of the
Standards.

BUTT-FUSED WELDED HDPE PIPE
All manufacturers that meet the performance requirements specified under the material section of the
Standard Specifications.

ABS PIPE AND FITTINGS
All manufacturers that meet the performance requirements specified under the material section of the
Standards.

PRECAST MANHOLE SECTIONS
Pacific International Pipe and Engineering, Inc.
Associated Sand and Gravel Company

POLYPROPYLENE MANHOLE STEPS
Lane International Corporation, P-13938
M.A. Industries, Inc., PS-2-PF
MANHOLE FRAMES AND COVERS

Inland Foundry Co.
Olympic Foundry

CLEAN-OUT FRAMES AND COVERS

Inland Foundry Co.
Olympic Foundry

PVC BY CONCRETE MANHOLE ADAPTERS

A.C. x PVC Brant Adapter
Kor-N-Seal Company, Kor-N-Seal Connector
GPK Products, Inc., GPK PVC Manhole Adapter

AWWA C900/C905 FITTINGS AND MANHOLE ADAPTERS

Head Manufacturing (Idaho)
Vassallo (Florida)

OIL/WATER SEPARATORS

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Supplier</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 gallon</td>
<td>Utility Vault Co, Inc</td>
<td>25-SA</td>
</tr>
<tr>
<td>450 gallon</td>
<td>Utility Vault Co, Inc</td>
<td>660-SA</td>
</tr>
<tr>
<td>750 to 900 gallon</td>
<td>Utility Vault Co, Inc</td>
<td>577-SA</td>
</tr>
<tr>
<td>1,100 gallon</td>
<td>Utility Vault Co, Inc</td>
<td>4484-SA</td>
</tr>
<tr>
<td>1,500 gallon</td>
<td>Utility Vault Co, Inc</td>
<td>5106-SA</td>
</tr>
<tr>
<td>2,200 gallon</td>
<td>Utility Vault Co, Inc</td>
<td>612-SA</td>
</tr>
<tr>
<td>3,000 to 4,000 gallon</td>
<td>Utility Vault Co, Inc</td>
<td>712-SA</td>
</tr>
<tr>
<td>5,000 gallon</td>
<td>Utility Vault Co, Inc</td>
<td>814-SA</td>
</tr>
</tbody>
</table>

GREASE INTERCEPTORS


LADDER-UP

Bilco, Model LU-2 (steel safety post, hot dip galvanized)

VAULT HATCH/DOOR AND NON-SLIP TREATMENT

L.W. Products Company, Inc., Models HHD and HHS (H-30 rated locations)
Hatches shall include recessed padlock hasp sized to accept City of North Bend Wastewater Division padlocks.
Metal lids, hatches and access covers shall be constructed with a gray non-slip treatment by one of the approved products below:

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>*COF</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>LW Products</td>
<td>.95</td>
<td>Thermion Arc Metal Spray</td>
</tr>
<tr>
<td>SlipNOT Metal Safety Flooring</td>
<td>.99</td>
<td>SlipNOT Grip Plate</td>
</tr>
<tr>
<td>IKG Industries</td>
<td>&gt;.80</td>
<td>MEBAC 1 (Metal Bonded Anti-Slip Coatings)</td>
</tr>
<tr>
<td>Grating Pacific LLC</td>
<td>.92</td>
<td>ALGRIP Safety Floor Plates</td>
</tr>
</tbody>
</table>

*COF – coefficient of friction as determined by ASTM C1028-89

BACKWATER VALVES

APCO Rubber Flapper Swing Check, 100 Series

MECHANICAL SEWER PLUGS

SIDU Manufacturing Company, Inc.
Sewer Equipment Company of America
SRECO Flexible
Graham Hand Tite (Plastic)

PREFABRICATED PLASTIC MANHOLE CHANNELS

GU Manhole Liners Ltd.

INSIDE DROP CONNECTION FOR RETROFIT AND NEW CONSTRUCTION

Reliner – Duran, Inc. – B-8 and B-10 drop bowels

CONTROLLED DENSITY (FLOWABLE) FILL

Stoneway, CADMAN

RECYCLED CONCRETE (FOR USE AS CRUSHED SURFACING BASE COURSE MATERIAL)

Stoneway Recycling
Renton Recycling (with certification that the material is free of contaminants)

LINK SEAL

Vault wall pipe penetration seals shall be Link Seal Model C-316 (EDPM) with stainless steel hardware.

EXPANSION ANCHOR BOLTS INTO CONCRETE

Expansion anchor bolts shall be wedge style “Power Stud,” “Power Bolt” Hilti KB3-HPG in stainless steel or galvanized steel.

NEOPRENE FOAM PAD (FOR CUSHION BETWEEN ADJACENT PIPES)

Dow Plastics Ethafoam™ 220
APPENDIX 7-3
SEWER STANDARD PLAN NOTES

Sanitary Sewer General Notes:

1. All work shall conform to City of North Bend Public Works Standards and the Developer Extension Agreement.

2. All new manholes shall have a minimum inside diameter of 48 inch and shall conform to the Standard Details.

3. Sanitary sewer pipe shall be PVC conforming to ASTM-D3034 SDR 35 (4”-15”) or ASTM F-679 (18”-27”). Bedding and backfill shall be as shown in the Standard Details.

4. Where shown as C900-PVC, the sewer pipe shall have dimension ratio (DR) 18 and conform to AWWA C900 or AWWA C905.

5. All side sewers shall be 6-inch-diameter pipe at a minimum 2 percent slope, unless otherwise noted on the Standard Details.

6. Side sewer stations are referenced from nearest downstream manhole.

7. Lot corners must be set and side sewer locations verified in the field prior to construction.

8. All side sewer stubs shall be capped with a watertight cap and gasket. Cap location shall be marked with a 2 x 4 stake, 12-feet long, with one end buried at depth of the plug invert and extending at least 3 feet vertically out of the ground. The portion of stake above ground shall be painted white and marked with the word “SEWER” and the depth from pipe invert to ground surface. Connect pipe to stake with an 8-gauge wire at or above finished ground level.

9. The locations of all existing utilities shown hereon have been established by field survey or obtained from available records and should therefore be considered approximate only and not necessarily complete. It is the sole responsibility of the contractor to independently verify the accuracy of all utility locations shown, and to further discover and avoid any other utilities not shown hereon which may be affected by the implementation of this plan. The Publics Work Director shall be immediately notified if a conflict exists.

10. All testing and connections to existing mains shall be done in the presence of a representative of the City of North Bend Public Works Department.

11. All trenches shall be compacted, and ATB in place in paved areas, prior to testing sewer lines for acceptance.

12. Side sewer shall be tested for acceptance at the same time the main sewer is tested.

13. Tops of manholes within public rights-of-way shall not be adjusted to final grade until just prior to paving.

14. All manholes in unpaved areas shall include a concrete seal around adjusting rings.
15. Contractor shall adjust all manhole rims to flush with final finished grades, unless otherwise shown.

16. All sewer main extensions within the public right-of-way or in easements must be “staked” by a surveyor licensed in Washington State for “line and grade” and cut sheets provided to the Engineer, prior to starting construction.

17. Contractor shall install, at all connections to existing downstream manholes, screens or plugs to prevent foreign materials from entering existing sanitary sewer system. Screens or plugs shall remain in place throughout the duration of construction and shall be removed along with collected debris at the time of final inspection and in the presence of a representative of the City of North Bend Public Works Department.

18. Surface restoration of existing asphalt pavement shall be as required by the right-of-way use permit.

19. Contractor shall maintain a minimum of 10-feet horizontal separation between all water and sewer lines. Any conflicts shall be reported to the Utility and the Engineer prior to construction.

20. It shall be the Contractor’s responsibility to insure that no conflicts exist between sanitary sewer lines and proposed or existing utilities prior to construction.

21. Minimum cover over sewer pipe shall be five feet, unless otherwise shown.

22. The Contractor shall use a vacuum street sweeper to remove dust and debris from pavement areas as directed by the Engineer. Flushing of streets shall not be permitted without prior City approval.

23. Before commencement of trenching, the Contractor shall provide filter fabric for all downhill storm drain inlets and catch basins that will receive runoff from the project site. The Contractor shall periodically inspect the condition of all filter fabric and replace as necessary. For all construction during the rainy season, downhill basins and inlets must be protected with catch basin inserts. Simply placing filter fabric under the grate is not acceptable.

24. Side sewer demolition shall be performed prior to removal of building foundation. The side sewer for each building shall be excavated and removed from the house connection to the edge of the public right-of-way, or property line. The Contractor shall cap the end of the side sewer to remain in place. Side sewer demolition shall be performed in the presence of a City of North Bend sewer utility representative.

25. Avoid crossing water or sewer mains at highly acute angles. The smallest angle measure between utilities should be 45 to 90 degrees.

26. At points where existing thrust blocking is found, minimum clearance between the concrete blocking and other buried utilities or structures shall be 5 feet.

27. Where new utility line crosses below an existing AC main, the AC pipe shall be replaced with DI pipe to 3 feet past each side of the trench as shown on the standard detail. Alternatively, where directed by the Engineer, the trench shall be backfilled with controlled density fill (CDF, aka...
flowable fill) from bottom of trench to bottom of the AC main.

28. Call 1-800-424-5555 or 811 72 hours before construction for utility locations.

29. Manholes, catch basins, and vaults are considered to be permit-required confined spaces. Entry into these spaces shall be in accordance with Chapter 296-809 WAC.

30. The Contractor shall provide color CCTV equipment to include television cameras, a television monitor, cables, power sources, side-launch capable if necessary, and other equipment. Focal distance shall be adjustable through a range from 6 inches to infinity. The CCTV equipment shall include a distance measuring instrument (DMI) to measure the horizontal distance traveled by the camera. The DMI readout shall appear continuously on the video produced by the inspection and shall be accurate to less than 1 percent error over the length of the section of pipeline being inspected. For storm or sanitary sewers, the length is measured from the centerline of the manhole or catch basin to the centerline of the next manhole or catch basin.

The CCTV inspection system shall be performed utilizing one of the following video camera systems:

- Remote-focus stationary lens cameras;
- Rotating lens cameras; or
- Pan-and-tilt cameras.

The camera and television monitor shall produce a minimum (480 lines-per-inch) resolution. The contractor shall inspect the pipeline during optimum low-flow level conditions, as pre-approved by the Utility Inspector. The contractor shall coordinate with the Utility Inspector prior to video inspection. The television camera utilized shall be specifically designed and constructed for sewer inspection. All video inspections shall be recorded in .mpg file format on a disk (either external hard drive, thumb drive or DVD). The video shall be taken after installation, cleaning, and pressure test to insure that no defections exist. The project will not be accepted until all defects have been repaired.

31. When work is to occur in easements, the Contractor shall notify the easement grantor and North Bend Public Works in writing a minimum of 48 hours in advance of beginning work (not including weekends or holidays). Failure to notify grantor and North Bend Public Works will result in a Stop Work Order being posted until the matter is resolved to the satisfaction of North Bend Public Works. A written release from the easement grantor shall be furnished to the Utilities Inspector prior to permit signoff.

32. The Contractor shall restore the Right-of-Way and existing public sewer easement(s) after construction to a condition equal or better than condition prior to entry. The Contractor shall furnish a signed release from all affected property owners after restoration has been completed.
GENERAL NOTES – APPLIES TO ALL MANHOLES:

1. PRECAST SECTIONS SHALL BE REINFORCED PER ASTM SPECS FOR CORRESPONDING SEWER PIPE.
2. POLYPROPYLENE SAFETY STEPS SHALL BE PER STANDARD DETAIL S-13.
3. ALL HOLES FOR PIPE SHALL BE BLOCKED OUT AT THE TIME OF CASTING THE SECTION.
4. ALL MANHOLE SECTIONS SHALL BE FURNISHED WITH RUBBER GASKET JOINT PER ASTM C-478 AND ASTM C-443.
5. MANHOLES OVER 10’ DEEP SHALL BE FURNISHED WITH A MIN. WALL THICKNESS OF 5”.
6. MANHOLE DIAMETER IN ACCORDANCE WITH CITY OF NORTH BEND STANDARDS.
7. WHERE AWWA C900 PVC PIPE IS USED, CONNECTION SHALL BE MADE WITH PVC MANHOLE ADAPTER SIZED FOR THE O.D. OF AWWA C900 PVC PIPE. ADAPTER LENGTH SHALL MATCH OR EXCEED THE MANHOLE SECTION WALL THICKNESS.
8. GROUT ALL JOINTS INSIDE, OUTSIDE AND IN BETWEEN TO ACHIEVE WATERTIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF STRUCTURE. USE NON-SHRINK GROUT ONLY.
9. WHERE STANDARD MANHOLE CANNOT BE INSTALLED, THE CUSTOM MANHOLE SHALL BE DETAILED ON THE CONSTRUCTION PLANS.
10. PIPE CONNECTION TO MANHOLE: KOR-N-SEAL OR EQUAL FOR CORE-DRILED SECTIONS, OR SAND COLLAR FOR SECTIONS WITH KNOCKOUTS. WITH ENGINEER AND CITY OF NORTH BEND APPROVAL.
CITY OF NORTH BEND

NOTES:
1. MANHOLE SHALL CONFORM TO THE GENERAL NOTES AND ALL APPLICABLE REQUIREMENTS OF STANDARD DETAIL S-1.
2. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
3. PRECAST BASES SHALL BE FURNISHED WITH KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MINIMUM. UNUSED KNOCKOUTS DO NOT NEED TO BE GROUTED IF LEFT IN INTACT. PIPE SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS CORE-DRILLED HOLES ARE APPROVED BY THE CITY.
4. KNOCKOUT OR CORE-DRILLED HOLES SHALL EQUAL THE PIPE OUTSIDE DIAMETER PLUS MANHOLE WALL THICKNESS. MINIMUM DISTANCE BETWEEN HOLES SHALL BE 12".
5. FOR HEIGHTS OF 12' OR LESS, MINIMUM SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12', MINIMUM SOIL BEARING VALUE SHALL EQUAL 3,800 POUNDS PER SQUARE FOOT.
6. GROUT ALL JOINTS INSIDE, OUTSIDE AND IN BETWEEN TO ACHIEVE WATERTIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF STRUCTURE. USE NON-SHRINK GROUT ONLY.

CITY OF NORTH BEND
TYPE 2 MANHOLE
72" AND 96"

APPROVED:
MARK RIGOS, P.E. MAY 2018
BY CITY DATE

DWG. NO. S-2
CITY OF NORTH BEND

MANHOLE MUST HAVE A MINIMUM OF ONE PRECAST CONCRETE ADJUSTING RING PER RING AND COVER.

2" MIN. - 16" MAX.

FIRST SAFETY STEPS:
28" MAX. DISTANCE BELOW THE COVER PER STANDARD DETAIL S-13 (TYP)

CAST IN PLACE CHANNEL AND SHELF. SLOPE SHELF SURFACE TO CHANNEL AT APPROX. 1 INCH PER FOOT.

CAST CHANNEL WITH 3000 P.S.I. CONCRETE. WIDTH AND DEPTH OF CHANNEL MUST EQUAL THE LARGEST PIPE DIAMETER WITH A SLOPE OF 2% MIN. CHANNEL WALLS MUST BE VERTICAL.

PIECE CONNECTION TO MANHOLE:
USE A SAND COLLAR FOR SECTIONS WITH KNOCKOUTS, WITH ENGINEER AND CITY OF NORTH BEND APPROVAL OR A KOR-N-SEAL OR EQUAL FOR CORE-DRILLED SECTIONS.

COMPACTED FOUNDATION.

NOTES:
1. MANHOLE SHALL CONFORM TO THE GENERAL NOTES AND ALL APPLICABLE REQUIREMENTS OF STANDARD DETAIL S-1.
2. PROVIDE TWO 24" RING AND COVERS, ONE LOCATED OVER THE MAJOR INCOMING AND OUTGOING PIPES.
3. MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS.
4. PRECAST BASES SHALL BE FURNISHED WITH KNOCKOUTS. KNOCKOUTS SHALL HAVE WALL THICKNESS OF 2" MINIMUM. UNUSED KNOCKOUTS DO NOT NEED TO BE GROUTED IF LEFT IN INTACT. PIPE SHALL BE INSTALLED ONLY IN FACTORY KNOCKOUTS UNLESS CORE-DRILLED HOLES ARE APPROVED BY THE CITY.
5. KNOCKOUT OR CORE-DRILLED HOLES SHALL EQUAL THE PIPE OUTSIDE DIAMETER PLUS MANHOLE WALL THICKNESS. MINIMUM DISTANCE BETWEEN HOLES SHALL BE 12".
6. FOR HEIGHTS OF 12' OR LESS, MINIMUM SOIL BEARING VALUE SHALL EQUAL 3,300 POUNDS PER SQUARE FOOT. FOR HEIGHTS OVER 12', MINIMUM SOIL BEARING VALUE SHALL EQUAL 3,800 POUNDS PER SQUARE FOOT.
7. GROUT ALL JOINTS INSIDE, OUTSIDE AND IN BETWEEN TO ACHIEVE WATERTIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF STRUCTURE. USE NON-SHRINK GROUT ONLY.

CITY OF NORTH BEND
TYPE 3 MANHOLE
72" AND 96"

APPROVED:
MARK RIGOS, P.E. MAY 2018
BY CITY DATE

DWG. NO. S-3
NOTES:

1. OUTSIDE DROP STRUCTURES SHALL BE INSTALLED ONLY WHERE APPROVED BY THE CITY. MANHOLE SHALL CONFORM TO GENERAL NOTES AND ALL APPlicable REQUIREMENTS OF STANDARD DETAIL S-1.

2. OUTSIDE DROP SHALL BE CONSTRUCTED USING CLASS 50 DI PIPE AND FLANGED DI FITTINGS.

3. CHANNEL BASE WITH 3000 PSI CONCRETE. WIDTH AND DEPTH OF CHANNEL MUST EQUAL THE LARGEST PIPE DIAMETER WITH A SLOPE OF 2% MIN. CHANNEL WALLS MUST BE VERTICAL. SLOPE SHELF TO CHANNEL AT 1" PER FOOT MIN.

4. CORE DRILL OPENINGS FOR NEW PIPE WHEN DROP IS INSTALLED ON EXISTING MANHOLE. USE KOR-N-SEAL CONNECTORS OR EQUAL.
NOTES:

1. MANHOLE SHALL CONFORM TO THE GENERAL NOTES AND ALL APPLICABLE REQUIREMENTS OF STANDARD DETAIL S-1.
2. THE ENTRY ANGLE OF THE NEW SEWER CONNECTION, RELATIVE TO THE EXISTING SEWER MAIN INLET, SHALL BE 90 DEGREES OR LESS.
4. IF NEW SEWER CONNECTION IS A SIDE SEWER, THE INVERT OF THE NEW PIPE SHALL BE SET AT OR ABOVE THE CROWN OF THE EXISTING MAINLINE NEW CONNECTION NOT TO EXCEED 18" ABOVE THE MAINLINE INVERT.
5. PVC PIPE CONNECTION TO MANHOLE: KOR—N—SEAL OR EQUAL FOR CORE—DRILLED SECTIONS, OR SAND COLLAR FOR SECTIONS WITH KNOCKOUTS, WITH ENGINEER OR CITY OF NORTH BEND APPROVAL.
6. GROUT ALL JOINTS INSIDE, OUTSIDE AND IN BETWEEN TO ACHIEVE WATERTIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF STRUCTURE. USE NON—SHRINK GROUT ONLY.
NOTES:

1. MANHOLE SHALL CONFORM TO THE GENERAL NOTES AND ALL APPLICABLE REQUIREMENTS OF STANDARD DETAIL S-1.

2. PIPE CONNECTION TO MANHOLE: KOR–N–SEAL OR EQUAL FOR CORE–DRILLED SECTIONS, OR SAND COLLAR FOR SECTIONS WITH KNOCKOUTS, WITH ENGINEER AND CITY OF NORTH BEND APPROVAL.

3. GROUT ALL JOINTS INSIDE, OUTSIDE AND IN BETWEEN TO ACHIEVE WATERTIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF STRUCTURE. USE NON–SHRINK GROUT ONLY.
NOTES:
1. MANHOLE SHALL CONFORM TO THE GENERAL NOTES AND ALL APPLICABLE REQUIREMENTS OF STANDARD DETAIL S-1
2. THE ENTRY ANGLE OF THE NEW SEWER CONNECTION, RELATIVE TO THE EXISTING SEWER MAIN INLET, SHALL BE 90 DEGREES OR LESS.
4. IF NEW SEWER CONNECTION IS A SIDE SEWER, THE INVERT OF THE NEW PIPE SHALL BE SET AT OR ABOVE THE CROWN OF THE EXISTING MAINLINE. NEW CONNECTION NOT TO EXCEED 18" ABOVE THE MAINLINE INVERT.
5. PVC PIPE CONNECTION TO MANHOLE: KOR-N-SEAL OR EQUAL FOR CORE-DRILLED SECTIONS, OR SAND COLLAR FOR SECTIONS WITH KNOCKOUTS, WITH ENGINEER AND CITY OF NORTH BEND APPROVAL.
6. GROUT ALL JOINTS INSIDE, OUTSIDE AND IN BETWEEN TO ACHIEVE WATERTIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF STRUCTURE. USE NON-SHRINK GROUT ONLY.
NOTES:

1. ON MANHOLE OUTSIDE ASPHALT ADD REINFORCING STEEL AS SHOWN ABOVE. DEFORMED BAR TO MEET ASTM A615 GRADE 60.

2. ON MANHOLE OUTSIDE PAVED AREAS, CONCRETE COLLAR TO BE 4’ x 4’ SQUARE.
NOTES:
1. MANHOLE SHALL CONFORM TO THE GENERAL NOTES AND ALL APPLICABLE REQUIREMENTS OF STANDARD DETAIL S-1.
2. WHERE DEPTH OF MANHOLE NECK EXCEEDS 24", ADJUST MANHOLE TO GRADE BY INSTALLING NEW MANHOLE BARREL SECTION AND CONE ON EXISTING MANHOLE BARREL.
3. WHERE KEY SECTIONS OF NEW AND EXISTING MANHOLES ARE NOT COMPATIBLE, CUT KEY OFF BOTTOM OF NEW SECTION AND PROVIDE A CAST-IN-PLACE CONCRETE COLLAR AROUND MANHOLE PERIMETER. CAST COLLAR WITH 3000 P.S.I. CONCRETE.
4. GROUT ALL JOINTS INSIDE, OUTSIDE AND IN BETWEEN TO ACHIEVE WATERTIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF STRUCTURE. USE NON-SHRINK GROUT ONLY.
NOTES:
1. MANHOLE SHALL CONFORM TO THE GENERAL NOTES AND ALL APPLICABLE REQUIREMENTS OF STANDARD DETAIL S-1.
2. WHERE DEPTH OF MANHOLE WITH CONCENTRIC CONE EXCEEDS 5 FEET, ADJUST MANHOLE TO GRADE BY INSTALLING NEW ECCENTRIC CONE AND BARREL SECTION ON EXISTING MANHOLE BASE SECTION.
3. WHERE KEY SECTIONS OF NEW AND EXISTING MANHOLES ARE NOT COMPATIBLE, CUT KEY OFF BOTTOM OF NEW SECTION AND PROVIDE A CAST-IN-PLACE CONCRETE COLLAR AROUND MANHOLE PERIMETER. CAST COLLAR WITH 3000 P.S.I. CONCRETE.
4. SAFETY STEPS IN PRECAST BASE SECTION MAY BE CAST IN PLACE OR A PREFabricATED LADDER GROUTED OR BOLTED IN PLACE. SEE STANDARD DETAIL S-13.
5. GROUT ALL JOINTS INSIDE, OUTSIDE AND IN BETWEEN TO ACHIEVE WATERTIGHT CONSTRUCTION. FINISH SMOOTH THE INSIDE OF STRUCTURE. USE NON-SHRINK GROUT ONLY.

CITY OF NORTH BEND
MANHOLE CONE ADJUSTMENT (CONCENTRIC TO ECCENTRIC)

APPROVED: Mark Rigos, P.E. May 2018
BY CITY DATE

DWG. NO. S-10
SKID GROOVE PATTERN DETAIL

BLIND PICK NOTCH DETAIL "A"

BOLT-DOWN DETAIL "B"

NOTES:
1. COVER SHALL HAVE THE WORD "SEWER" CAST IN 3" RAISED LETTERS.
2. ONLY FOR USE IN PUBLIC RIGHT-OF-WAY (PAVED AREAS AND SIDEWALKS).
3. RING AND COVER SHALL BE RATED HS-20.
5. OLYMPIC FOUNDRY MH30A, OR EQUAL.
6. DUCTILE OR CAST COVER SHALL HAVE MINIMUM WEIGHT OF 150 LBS.
7. DUCTILE OR CAST RING SHALL HAVE MINIMUM WEIGHT OF 210 LBS.
8. ALL LIDS TO BE LOCKING UNLESS APPROVED OTHERWISE BY CITY OF NORTH BEND.
9. PROVIDE A BLIND PICK NOTCH FOR ALL SEWER LIDS, OPEN HOLES ARE NOT PERMITTED.

24" LOCKING MANHOLE RING AND COVER

CITY OF NORTH BEND

APPROVED:
MARK RIGOS, P.E. MAY 2018
BY CITY
DATE S-11
NOTE:

1. Ladder rungs for manholes and catch basins shall meet the requirements of AASHTO M 199.
CITY OF NORTH BEND

NOTES:

1. FOR PIPES 15-INCHES AND UNDER, TRENCH WIDTH=I.D. + 30-INCHES. FOR PIPES 18-INCHES AND OVER, TRENCH WIDTH=(1.5 x I.D.)+18-INCHES. PER SECTION 2-09.4, "MEASUREMENT", OF THE WSDOT STANDARD SPECIFICATIONS.

2. EXCAVATIONS OVER 4' DEEP SHALL COMPLY WITH THE SAFETY STANDARD DESCRIBED IN CHAPTER 296-155 – PART N OF THE WAC.

3. SEE "BEDDING, BACKFILL AND COMPACTION" IN THE STANDARDS FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

PAVED AREAS

UNPAVED AREAS
CITY OF NORTH BEND

NOTES:
1. FOR PIPES 15–INCHES AND UNDER, TRENCH WIDTH=I.D. + 30–INCHES. FOR PIPES 18–INCHES AND OVER, TRENCH WIDTH=(1.5 x I.D.)+18–INCHES. PER SECTION 2–09.4, "MEASUREMENT", OF THE WSDOT STANDARD SPECIFICATIONS.
2. EXCAVATE UNSTABLE MATERIAL DOWN TO FIRM SOIL AND REPLACE WITH FOUNDATION GRAVEL PER SECTION 9–03.9(3), "BALLAST", OF THE WSDOT STANDARD SPECIFICATIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANCHORING PIPE TO PREVENT FLOTATION DURING CONCRETE PLACEMENT.
4. 4–INCHES FOR PIPE 18–INCH DIAMETER AND LESS; 6–INCHES FOR PIPE GREATER THEN 18–INCH DIAMETER.
5. SEE WSDOT SECTION 9–03.9 FOR ADDITIONAL REQUIREMENTS.

CITY OF NORTH BEND
PIPE BEDDING

APPROVED:
MARK RIGOS, P.E. MAY 2018
BY CITY DATE

S–15
NOTES:
1. BOLT-LOCKING CAST IRON RING AND COVER SHALL BE USED IN RIGHT-OF-WAY AND EASEMENTS AND MUST BE RATED HS-20 IF USED IN PAVED AREAS. SEE TABLE FOR SIZES.
2. MID-STATES PLASTIC BOX OR EQUAL MAY BE USED IF C.O. IS OUTSIDE OF RIGHT-OF-WAY OR EASEMENT. SEE TABLE FOR SIZES. THE COVER FOR THE PLASTIC BOX SHALL BE DUCTILE IRON AND READ "SEWER" OR BE BLANK (NO LABEL).
3. CAST IRON COVER SHALL READ "SEWER.
4. 14" BOLT-LOCKING CAST IRON COVER SHALL BE EQUAL TO OLYMPIC FOUNDRY PART NUMBER M1060.
5. SPECIAL "DECORATIVE" CASTING MAY BE USED IF PRE-APPROVED BY CITY.
NOTES:
1. UNLESS OTHERWISE INDICATED ON PLAN, SIDE SEWER SHALL BE MINIMUM OF 5 FEET DEEP AT PROPERTY LINE, OR 5 FEET LOWER THAN THE LOWEST ELEVATION, WHICHEVER IS LOWER.
2. PIPE CAN BE REDUCED TO 4" DIAMETER ON PRIVATE PROPERTY.
3. CLEANOUT SHALL BE INSTALLED WITHIN 25 FEET OF WYES.
TYPICAL HOUSE SIDE SEWER
ON PRIVATE PROPERTY

INFORMATION REQUIRED FOR SEWER CONNECTION PERMIT: LEGAL DESCRIPTION, STREET ADDRESS, PLAN WITH DIMENSIONS A THROUGH E SHOWN, AND COMPLETION OF SIDE SEWER APPLICATION.

CITY OF NORTH BEND
HOUSE SEWER CONNECTION
(WHEN CONNECTING TO EXISTING STUB ONLY)

NOTES:
1. REMOVE 2"X4" STAKE AND CAP OR EXIST SIDE SEWER PIPE AND INSTALL NEW 4" P.V.C SIDE SEWER. USE COUPLINGS, REDUCERS, WYES, TEES, AND BENDS, AS REQUIRED TO FIT.
NOTE:
1. REPLACE ANY EXISTING 4" SIDE SEWER WITH 6" PVC AND EXTEND THE EDGE OF RIGHT-OF-WAY. REMOVE AND DISPOSE OF ANY EXISTING PIPE THAT IS NOT REUSED.
NOTES:
1. REPLACE ANY EXISTING 4" SIDE SEWER WITH 6" PVC AND EXTEND TO THE EDGE OF RIGHT-OF-WAY. REMOVE AND DISPOSE OF ANY EXISTING PIPE THAT IS NOT REUSED.
2. RELOCATE SIDE SEWER ONLY WHERE REQUIRED BY ROADWAY CUT.
NOTES:
1. ALL PIPE STAKES, HARDWARE AND MATERIALS SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

2. TYPE 1 PIPE STAKE: 2" O. D. GALVANIZED PIPE, 6' LONG, WITH A 2" O. D. THREADED PIPE CAP OR WELDED COLLAR. THE OTHER END IS TO BE FLATTENED OR CUT TO A POINT.

3. ANCHOR ASSEMBLY IS AN ALTERNATE TO S-19 (BURIED PIPE) OR FOR ABOVE GROUND PIPE WHERE APPROVED BY THE CITY.
NOTES:
1. SOIL CEMENT BLOCKS REQUIRED ON PIPE SLOPES OF 20% OR GREATER.
2. SOIL CEMENT BLOCKS PlACED OVeR AND AROUND. TAMPEd INTO PLACE BEFORE BACKFILLING. USE 10% CEMENT WITH 90% NATIVE SOIL MIX. ADD ENOUGH WATER TO FORM A DRY MIX THAT WILL HOLD ITS SHAPE WHEN MOLDED INTO A BALL.
3. PLACE TWO PIPE CLAMPS, 4" FROM BLOCK ENDS TO PROVIDE ANCHORAGE TO SOIL/CEMENT MIX.
NOTES:
1. WHERE DEPTH OF PIPE INVERT IS LESS THAN 3 FEET, USE PLASTIC METER BOX FOR VALVE CHAMBER (MID STATES PLASTIC MODEL MSBCF 1730–12 OR EQUAL). THE COVER FOR THE PLASTIC BOX SHALL BE DUCTILE IRON AND READ "SEWER", OR BE BLANK (NO LABEL). STACK 2 OR 3 BOXES AS NECESSARY.
2. WHERE DEPTH OF PIPE INVERT IS BETWEEN 3 FEET AND 5 FEET, USE CONCENTRIC CONE CONCRETE MANHOLE PER STANDARD DETAIL S–6.
3. WHERE DEPTH OF PIPE INVERT IS GREATER THAN 5 FEET, USE STANDARD ECCENTRIC CONCRETE MANHOLE PER STANDARD DETAIL S–1.

PROVIDED FOR EXAMPLE ONLY, PROJECT SPECIFIC DETAILS WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND ARE TO BE INCLUDED IN THE PROJECT PLANS.
RESTAURANT, BAKERY OR OTHER F.O.G. CONTRIBUTOR WITHOUT AN EXTERIOR GREASE INTERCEPTOR

INSTALL CLEANOUT AND SAMPLING TEE TO GRADE PER STANDARD DETAIL S-16

SEE NOTE 3

SEE NOTE 3

3" MIN. - 6" MAX.

4"

4"

12"

12"

2"

2"

GRAVEL

FLOW

24" MAX.

36" MIN.

6" P.V.C. TEE FACING UP

NOTES:
1. ONLY FOR USE ON PROPERTIES THAT DO NOT HAVE AN EXTERIOR GREASE INTERCEPTOR.
2. INSTALL SAMPLING TEE ON EXISTING OR NEW SIDE SEWER.
3. FOR PAVED AREAS USE 14" BOLT-LOCKING RING AND COVER EQUAL TO INLAND FOUNDRY NUMBER 209 OR 210. FOR UNPAVED AREAS USE MID-STATES PLASTIC BOX MODEL MSBCF-1118-18XL OR EQUAL. THE COVER FOR THE PLASTIC BOX SHALL BE DUCTILE IRON AND READ "SEWER", OR BE BLANK (NO LABEL).

Provided for example only, project specific details will be required to be submitted for review and are to be included in the project plans.

CITY OF NORTH BEND

SAMPLING TEE

APPROVED: MARK RIGOS, P.E. MAY 2018

BY CITY

DATE

DWG. NO.

S-24
NOTES:
1. USE UTILITY VAULT COMPANY INC. MODEL #25-SA OR EQUAL. PRECAST VAULT SHALL HAVE KNOCKOUTS AT ALL PIPE OPENINGS. IF KNOCKOUTS ARE NOT PRESENT, THEN PIPE OPENINGS SHALL BE CORE-DRILLED. PIPE OPENINGS SHALL BE 2" LARGER THAN THE PIPE DIAMETER.
2. P.V.C INSPECTION AND SAMPLING TEE SHALL BE THE SAME SIZE AS THE OUTLET PIPE FOR 6" OUTLET OR GREATER. USE 6" BY OUTLET-SIZE TEE WHERE OUTLET PIPE SIZE IS LESS THAN 6". INSTALL GASKETED CAP ON TOP OF THE SAMPLING TEE, FOR INTERIOR INSTALLATION ONLY.
3. FILL WITH CLEAN WATER PRIOR TO START-UP OF THE SYSTEM.
4. GRAY AND BLACK WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER.
5. PIPE CONNECTION TO VAULT: KOR-N-SEAL OR EQUAL FOR CORE-DRILLED OPENINGS, OR SAND COLLAR FOR KNOCKOUT OPENING. SEAL ALL PIPE CONNECTIONS WITH NONSHRINK GROUT.
6. INTERIOR OIL/WATER SEPARATORS SHALL HAVE VENTING PER 2009 UNIFORM PLUMBING CODE REQUIREMENTS.
7. PRIOR TO STARTUP, OIL/WATER SEPARATOR SHALL PASS 1% PER DAY LEAK TEST WHERE ONLY A MAXIMUM OF 1% OF DEAD STORAGE REDUCTION IS ALLOWED WITHIN A 24 HOUR PERIOD PER THE 2009 UNIFORM PLUMBING CODE 712.2

CITY OF NORTH BEND
100 GALLON BAFFLE TYPE OIL/WATER SEPARATOR

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY

DWG. NO. S-25

 PROVIDED FOR EXAMPLE ONLY, PROJECT SPECIFIC DETAILS WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND ARE TO BE INCLUDED IN THE PROJECT PLANS.
CITY OF NORTH BEND

NOTE:

1. USE UTILITY VAULT COMPANY INC. MODELS (SEE
   CHART) OR EQUAL. PRECAST VAULT SHALL HAVE
   KNOCKOUTS AT ALL PIPE OPENINGS. IF KNOCKOUTS
   ARE NOT PRESENT, THEN PIPE OPENINGS SHALL BE
   CORE-DRILLED. PIPE OPENINGS SHALL BE 2" LARGER
   THAN THE PIPE DIAMETER.

2. P.V.C. INSPECTION AND SAMPLING TEE SHALL BE THE
   SAME SIZE AS THE OUTLET PIPE FOR 6" OUTLET OR
   GREATER. USE 6" P.V.C. TEE WHERE OUTLET PIPE SIZE
   IS LESS THAN 6". INSTALL GASKETED CAP ON TOP OF
   THE SAMPLING TEE, FOR INTERIOR INSTALLATIONS ONLY.

3. FILL WITH CLEAN WATER PRIOR TO START-UP OF THE
   SYSTEM.

4. GRAY AND BLACK WATER SHALL BE CARRIED BY
   SEPARATE SIDE SEWER.

5. PIPE CONNECTION TO VAULT: KOR-N-SEAL OR EQUAL
   FOR CORE-DRILLED OPENINGS, OR SAND COLLAR FOR
   KNOCKOUT OPENING. SEAL ALL PIPE CONNECTIONS
   WITH NONSHRINK GROUT.

6. INTERIOR OIL/WATER SEPARATORS SHALL HAVE VENTING
   PER 2009 UNIFORM PLUMBING CODE REQUIREMENTS.

7. PRIOR TO STARTUP, OIL/WATER SEPARATOR SHALL
   PASS 1% PER DAY LEAK TEST WHERE ONLY A
   MAXIMUM OF 1% OF DEAD STORAGE REDUCTION IS
   ALLOWED WITHIN A 24 HOUR PERIOD PER THE 2009
   UNIFORM PLUMBING CODE 712.2

VAULT CHART

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PROVIDED FOR EXAMPLE ONLY, PROJECT SPECIFIC DETAILS
WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND
ARE TO BE INCLUDED IN THE PROJECT PLANS.

CITY OF NORTH BEND
450-900 GALLON BAFFLE TYPE
OIL/WATER SEPARATOR

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY

S-26
CITY OF NORTH BEND

1100–5000 GALLON BAFFLE TYPE OIL/WATER SEPARATOR

NOTES:
1. USE UTILITY VAULT COMPANY INC. MODEL (SEE CHART) OR EQUAL. PRECAST VAULT SHALL HAVE KNOCKOUTS AT ALL PIPE OPENINGS. IF KNOCKOUTS ARE NOT PRESENT, THEN PIPE OPENINGS SHALL BE CORE-DRILLED. PIPE OPENINGS SHALL BE 2" LARGER THAN THE PIPE DIAMETER.
2. P.V.C. SAMPLING TEE SHALL BE THE SAME SIZE AS THE OUTLET PIPE FOR 6" OUTLET OR GREATER. USE 6" P.V.C. TEE WHERE OUTLET PIPE SIZE IS LESS THAN 6". INSTALL GASKETED CAP ON TOP OF THE SAMPLING TEE, FOR INTERIOR INSTALLATION ONLY.
3. FILL WITH CLEAN WATER PRIOR TO START-UP OF THE SYSTEM.
4. GRAY AND BLACK WATER SHALL BE CARRIED BY SEPARATE SIDE SEWER.
5. PIPE CONNECTION TO VAULT: KOR-N-SEAL OR EQUAL FOR CORE-DRILLED OPENINGS, OR SAND COLLAR FOR KNOCKOUT OPENING. SEAL ALL PIPE CONNECTIONS WITH NONSHRINK GROUT.
6. INTERIOR OIL/WATER SEPARATORS SHALL HAVE VENTING PER 2009 UNIFORM PLUMBING CODE REQUIREMENTS.
7. PRIOR TO STARTUP, OIL/WATER SEPARATOR SHALL PASS 1% PER DAY LEAK TEST WHERE ONLY A MAXIMUM OF 1% OF DEAD STORAGE REDUCTION IS ALLOWED WITHIN A 24 HOUR PERIOD PER THE 2009 UNIFORM PLUMBING CODE 712.2

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CITY OF NORTH BEND
1100–5000 GALLON BAFFLE TYPE OIL/WATER SEPARATOR

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE S–27
NOTES:
1. USE UTILITY VAULT COMPANY INC. PRECAST CONCRETE VAULT OR EQUAL. SEE CHART ABOVE FOR DIMENSIONS REQUIRED FOR EACH GALLON CAPACITY. PRECAST VAULT SHALL HAVE KNOCKOUTS AT ALL PIPE OPENINGS. IF KNOCKOUTS ARE NOT PRESENT, THEN PIPE OPENINGS SHALL BE CORE-DRILLED. PIPE OPENINGS SHALL BE 2" LARGER THAN THE PIPE DIAMETER.
2. IF VAULT IS NOT SLOTTED TO ACCEPT PRECAST CONCRETE BAFFLE THEN BAFFLE SHALL BE HELD IN PLACE BY (2) 3"X3"X9/8" ANGLE 4FT. LONG ON EACH SIDE. ALL 4 PIECES OF ANGLE SHALL BE HELD IN PLACE WITH 4 - 1/2" BOLTS WITH WASHERS SPACED 14" ON CENTER. ANGLE AND FASTENERS SHALL BE STAINLESS STEEL OR GALVANIZED AND ASPHALT COATED.
3. P.V.C. INSPECTION AND SAMPLING TEE SHALL BE THE SAME SIZE AS THE OUTLET PIPE FOR 6" OUTLET OR GREATER. USE 6" P.V.C. TEE WHERE OUTLET PIPE SIZE IS LESS THAN 6". INSTALL GASKETED CAP ON TOP OF THE SAMPLING TEE.
4. POSITION RISERS BELOW ACCESS OPENINGS TO ALLOW CLEAR ACCESS TO RISER AND VAULT CHAMBER.
5. FOR 1000 GALLON INTERCEPTOR, SUBSTITUTE 12" RING AND COVER FOR "CENTER MANHOLE". LOCATE 12" RING AND COVER DIRECTLY ABOVE TEE AND RISER.
6. FOR 600 AND 700 GALLON INTERCEPTOR, SUBSTITUTE 30" RING AND COVER FOR THE TWO 24" MANHOLES LOCATED AT THE OUTLET END OF THE VAULT. CENTER OF 30" RING AND COVER SHALL BE LOCATED 2 FT. FROM THE OUTLET FACE OF VAULT.
7. FILL WITH CLEAN WATER PRIOR TO START-UP OF THE SYSTEM.
8. GRAY WATER ONLY. BLACK WATER SHALL BE CARRIED BY SEPARATE SEWER.
9. PIPE CONNECTION TO VAULT: KOR-N-SEAL OR EQUAL FOR CORE-DRILLED OPENINGS, OR SAND COLLAR FOR KNOCKOUT OPENINGS. SEAL ALL PIPE CONNECTIONS WITH NONSHRINK GROUT.
10. INTERIOR GREASE INTERCEPTORS SHALL HAVE VENTING PER 2009 UNIFORM PLUMBING CODE REQUIREMENTS.
11. PRIOR TO STARTUP, GREASE INTERCEPTOR SHALL PASS 1% PER DAY LEAK TEST WHERE ONLY A MAXIMUM OF 1% OF DEAD STORAGE REDUCTION IS ALLOWED WITHIN A 24 HOUR PERIOD PER THE 2009 UNIFORM PLUMBING CODE 712.2

PROVIDED FOR EXAMPLE ONLY, PROJECT SPECIFIC DETAILS WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND ARE TO BE INCLUDED IN THE PROJECT PLANS.
CITY OF NORTH BEND

MAXIMUM DISTANCE BETWEEN SPACERS SHALL BE 6 FEET ON CENTER.

SEAL BOTH ENDS OF CASING WITH A MANUFACTURED RUBBER SEALING DEVICE.

PLACE END SPACER MAXIMUM OF 12" FROM END OF CASING (TYP.)


STEEL PIPE CASING (MILL PIPE) OR DUCTILE IRON.

USE 2 STAINLESS STEEL HOSE CLAMPS TO SECURE RUBBER SEAL (1 ON CARRIER PIPE AND 1 ON CASING PIPE).

CARRIER PIPE

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NOTES:
1. RUNNER HEIGHT SHALL BE SIZED TO PROVIDE:
   A. MIN. 0.75" BETWEEN CARRIER PIPE BELL AND CASING PIPE WALL AT ALL TIMES.
   B. MIN. 1.00" CLEARANCE BETWEEN RUNNERS AND TOP OF CASING WALL TO PREVENT JAMMING DURING INSTALLATION.
2. MINIMUM RUNNER WIDTH SHALL BE 2 INCHES.
3. STEEL CASING DIAMETERS ARE "OUTSIDE DIAMETER" FOR 16" AND LARGER.
4. SPACER BAND WIDTH SHALL BE 12" FOR CARRIER PIPES THAT ARE 36" DIAMETER OR GREATER.
5. FOR STEEL CASING, PROVIDE SHOP-APPLIED ANTI-CORROSIVE COATING ON CASING EXTERIOR CONFORMING TO AWWA 210. MINIMUM COATING 16 MILS DFT (DO NOT EXCEED MANUFACTURER'S MAXIMUM THICKNESS). PRODUCT SHALL BE EQUAL TO TNEMEC HI-BUILD TNEMEC-TAR SERIES 46H-413.

CITY OF NORTH BEND
CASING INSTALLATION

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE

DWG. NO. S-30
NOTES:

1. PUMP SHALL NOT BE CONNECTED TO A SEPTIC TANK OF ANY SIZE.
2. CHECK VALVES AND PUMP ASSEMBLIES ARE PRIVATE AND SHALL BE THE PROPERTY OWNERS RESPONSIBILITY TO MAINTAIN.
3. PUMP BASIN SYSTEM SHALL BE DESIGNED BY THE PUMP MANUFACTURER.
4. ALL CLEANOUTS SHALL BE INSTALLED TO GRADE PER STANDARD DETAIL S-16
5. PRESSURE SIDE SEWER TO 6" GRAVITY STUB CONNECT MUST BE MADE WITH PVC REDUCER, NOT FLEXIBLE COUPLING.
6. PRESSURE SIDE SEWER TESTING SHALL BE IN ACCORDANCE WITH SECTION 7-05N OF THE STANDARDS.

PROVIDED FOR EXAMPLE ONLY, PROJECT SPECIFIC DETAILS WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND ARE TO BE INCLUDED IN THE PROJECT PLANS.

CITY OF NORTH BEND
SINGLE HOME SEWER PUMP SYSTEM

MARK RIGOS, P.E.      MAY 2018
BY CITY

S-31
1. THE GRINDER TANK SHALL BE INSTALLED WITHIN 12-FEET OF THE PUMP CONTROL PANEL. WHERE THIS DISTANCE MUST BE EXCEEDED, THE INSTALLER SHALL OBTAIN DISTRICT APPROVAL AND THEN RELOCATE THE ELECTRICAL JUNCTION BOX (J-BOX) WITHIN 1-FT OF THE GRINDER TANK AND 6-INCHES ABOVE FINISH GRADE.

2. THE TANK LOCATION SHALL BE ACCESSIBLE FOR MAINTENANCE AND REPAIR BY DISTRICT PERSONNEL.

3. TANK COVER SHALL BE APPROX. 3' ABOVE FINISHED GRADE. FINISH GRADE SHALL BE FREE DRAINING AND AWAY FROM THE TANK SO THAT SURFACE WATER CANNOT POND AROUND THE STATION.

4. AIR VENT MAY BE INSTALLED IN ALTERNATIVE LOCATION WITH DISTRICT APPROVAL.

5. POSITION GRINDER PUMP TANK TO MINIMIZE NUMBER OF BENDS IN DISCHARGE PRESSURE PIPING. BENDS SHALL BE INSTALLED IN THE GRAVITY SIDE SEWER IF NEEDED.

6. NO PLANTS ARE TO BE LOCATED WITHIN 5-FT OF THE TANK. THE PROPERTY OWNER SHALL MAINTAIN A 5-FT CLEAR ZONE AROUND THE TANK.

7. THE LOCATION OF THE CONTROL PANEL SHALL BE:
   7.1. ACCESSIBLE FOR EASY MAINTENANCE AND REPAIR.
   7.2. THE ALARM LIGHT MUST BE VISIBLE 180° RADIUS FROM 50-FEET.
   7.3. VISIBLE FROM THE TANK.
   7.4. THE BOTTOM WITHIN 4.5-FT OF FINISH GRADE.
   7.5. FENCES, BRUSH, OR ANY OTHER OBJECT SHALL NOT HIDE THE LIGHT OR HINDER IN THE MAINTENANCE AND REPAIR OF THE SYSTEM.

CONTROL PANEL, MOUNT ON SIDE OF HOUSE WITH BOTTOM 4"-6" ABOVE GROUND

4" X 4" PRESSURE TREATED POLE, SET 3'-0" INTO CONCRETE IF APPROVED BY DISTRICT

POWER SUPPLY FROM OWNER’S DISTRIBUTION PANEL.

TO COLLECTOR VALVE BOX
(SEE DETAIL)

PUMP DISCHARGE

GRINDER PUMP CLEANOUT
(SEE DETAIL)

AIR VENT IN TOP OF TANK
ALTERNATIVE LOCATION
ACCEPTABLE WITH DISTRICT
APPROVAL

CONTROL PANEL (4 1/2"
HIGH ALARM

1 1/4" FLOAT CONTROL CONDUIT
(SINGLE 1 1/4" CONDUIT
WITH RELOCATION)

1 1/4" PUMP WIRE CONDUIT

IF GREATER THEN 12-FT IS REQUIRED,
RELOCATED J-BOX NEXT TO GRINDER TANK.

(ACTUAL ORIENTATION VARIES)

GRINDER PUMP TANK
DISTANCE VARIES
12 FT. MAXIMUM

FIELD LOCATE CONDUIT HUBS

OWNER’S DISTRIBUTION
PANEL

2-POLE 30A
CIRCUIT BREAKER
(230 VOLT)

2-POLE 25A
CIRCUIT BREAKER
(230 VOLT)

BLK
BLK

WHT
GRN

1-POLE 15A
CIRCUIT BREAKER
(120 VOLT)

1-POLE 10A
CIRCUIT BREAKER
(120 VOLT)

EXPLOSIVE GAS SEAL-OFF

GRINDER STATION CONTROL PANEL

PUMP CABLE

FLOAT

FLOAT

FLOAT

JUNCTION BOX (J-BOX)

1. PUMP AND FLOAT CABLES TO BE EXTENDED INTO AND END AT THE J-BOX USING TWO SEPARATE CONDUITS; ONE FOR THE PUMP AND ONE FOR THE FLOATS. A SINGLE CONDUIT WITH INDIVIDUAL WIRES SHALL THEN EXTENDED FROM THE J-BOX TO PUMP CONTROL PANEL.

2. RUN FROM THE J-BOX TO THE PUMP CONTROL PANEL FOUR #10 AWG THHN WIRE FOR THE PUMP (WHITE, BLACK, RED, GROUND), TWO #14 AWG THHN WIRE WITH INDIVIDUAL COLORS FOR THE PUMP SENSOR AND PROBE, AND THREE SETS OF INDIVIDUAL COLORED #14 WIRE FOR THE FLOATS.

3. AN EXPLOSIVE GAS SEAL-OFF SHALL BE INSTALLED IN THE ELECTRICAL CONDUIT JUST PRIOR TO THE PUMP CONTROL PANEL.

4. INSTALLATION MUST CONFORM TO ALL REQUIREMENTS AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE. AN ELECTRICAL PERMIT AND INSPECTION IS REQUIRED WHETHER THE WORK IS PERFORMED BY THE OWNER OR A CONTRACTOR.

5. THE OWNER’S DISTRIBUTION PANEL SHALL SUPPLY ONE SEPARATE 230-V SINGLE PHASE, 30-AMP CIRCUIT FOR THE PUMP, AND ANOTHER SEPARATE 120-VOLT, 15-AMP CIRCUIT FOR THE ALARM SYSTEM.

6. THE CONTRACTOR SHALL REFER TO THE MANUFACTURER’S INSTALLATION INSTRUCTIONS FOR THE GRINDER PUMP CONTROL PANEL. THE TYPICAL CIRCUIT DIAGRAM SHOWN ABOVE IS ONLY AN EXAMPLE.

CITY OF NORTH BEND

TYPICAL CIRCUIT DIAGRAM

APPROVED:

MARK RIGOS, P.E. MAY 2018

BY CITY

DATE

PROVIDED FOR EXAMPLE ONLY, PROJECT SPECIFIC DETAILS WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND ARE TO BE INCLUDED IN THE PROJECT PLANS.

DWG. NO. S-32B
MATERIAL LIST FOR
GRINDER PUMP CLEAN OUT AND COLLECTOR VALVE BOX DETAILS

1. 1-1/4" HDPE PRESSURE PIPE SDR 11 (LENGTH TO SUIT)
2. TWO STACKED CARSON JUMBO BOX (PART #1730)
3. CARSON LID (PART #1730) "MARKED "SEWER"
4. 1-1/4" MALE THREADED NIPPLE SCH. 80 PVC, (LENGTH TO SUIT)
5. 1-1/4" X 90° BEND THREADED SCH. 80 PVC
6. 1-1/4" HDPE X 31655 MPT TRANSITION COUPLING, 6-INCH LENGTH (FULL BORE)
7. 1-1/4" COMPRESSION COUPLING SCH. 40 PVC
8. 1-1/4" UNION BALL VALVE THREADED SCH. 80 PVC
9. 1-1/4" X 3" NIPPLE THREADED SCH. 80 PVC
10. 1 - 1-1/4" TEE THREADED SCH. 80 PVC
11. 1-1/4" BRASS SWING CHECK VALVE
12. 1-1/4" X 8" NIPPLE THREADED SCH. 80 PVC
13. 1-1/4" CAP THREADED SCH. 80 PVC
14. HDPE SOCKET WELDED COUPLING
15. HDPE SOCKET WELDED REDUCER SDR 11 (SIZE TO SUIT)
16. HDPE SOCKET WELDED TEE SDR 11 (SIZE TO SUIT)

ALL HDPE WELDING SHALL BE MADE USING ELECTRO-FUSION.

NOTE WHEN BOXES LOCATED IN TRAFFIC AREAS:
WHERE BOXES ARE SUBJECT TO ANY POSSIBLE VEHICLE LOADING, REPLACE THE CARSON BOXES WITH FOGTITE #2 CONCRETE BOXES WITH FOGTITE STEEL TRAFFIC LIDS MARKED "SEWER".

TRACER WIRE NOTES:
1. ALL HDPE PIPE SHALL BE INSTALLED WITH 12-GAUGE SOLID CORE WIRE, TRACER WIRE. THE WIRE SHALL BE WRAPPED AROUND THE PIPE AS PART OF THE INITIAL INSTALLATION.
2. TRACER WIRE SHALL BE LOOPED THROUGH THE COLLECTION VALVE BOX AS SHOWN IN THE DETAIL.
3. WHERE A CUT-IN CONNECTION IS MADE TO AN EXISTING LOW PRESSURE SEWER, THE TRACER WIRES SHALL BE SPLICED TOGETHER USING BUTT CONNECTORS AND SHRINK TUBING PROTECTION.
4. TRACER WIRE SHALL EXTEND FROM THE GRINDER PUMP CLEANOUT TO THE COLLECTION VALVE BOX AS SHOWN IN THE DETAILS.

PROVIDED FOR EXAMPLE ONLY, PROJECT SPECIFIC DETAILS WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND ARE TO BE INCLUDED IN THE PROJECT PLANS.

CITY OF NORTH BEND
GRINDER PUMP CLEANOUT DETAIL

APPROVED:

MARK RIGOS, P.E. MAY 2018

BY CITY DATE

DWG. NO. S-32C
NOTES:
1. ALL PVC FITTINGS SHALL BE GASKETED
2. NO COLLECTION VALVE BOX REQUIRED WHEN CONNECTING TO A GRAVITY SIDE SEWER

PRESSURE LINE CONNECTION TO GRAVITY SANITARY SEWER DETAIL

PROVIDED FOR EXAMPLE ONLY, PROJECT SPECIFIC DETAILS WILL BE REQUIRED TO BE SUBMITTED FOR REVIEW AND ARE TO BE INCLUDED IN THE PROJECT PLANS.

CITY OF NORTH BEND
GRINDER PUMP INSTALLATION DETAIL

APPROVED: MARK RIGOS, P.E. MAY 2018
BY CITY DATE S-32D
REFERENCE DOCUMENTS
PERFORMANCE AND MAINTENANCE
BOND AGREEMENT
City of North Bend
Performance and Maintenance Bond Agreement

RE: North Bend Permit No.: ____________________________________________
Applicant: __________________________________
Project Address: __________________________________________________
Estimated Cost of Completed Project: _________________________________

This Performance and Maintenance Security Agreement (the “Agreement”) is made and entered on the last date set forth below, between the City of North Bend (“City”) and the above named Applicant (“Developer”).

RECITALS

A. Project. The undersigned Developer has applied to the City for a Performance and Maintenance Security Agreement for the project known as _____________ (the “Project”), which is the subject of the permit identified above (the “Permit”) located at the address identified above and legally described in the attached Exhibit A (the “Property”).

B. Performance. Subject to the Permit approval granted by the City for the Project, the provisions of the North Bend Municipal Code (“NBMC”) and state law, the Developer will construct or install certain improvements and mitigation in connection with the Project, in accord with the improvements and mitigation identified on the Permit and as shown on the following approved plans: _____________ approved on ________, 20__ (the “Improvements”).

C. Maintenance. Subject to the approval granted by the City for the Project, the provisions of the NBMC and state law, the Developer will maintain the Improvements in accord with the obligation identified in the Permit and as shown on the following approved plans: _____________ approved on ________, 20__ (the “Maintenance”).
D. Code Provisions for Security. Performance and Maintenance of the Improvements are subject to the security requirements in the NBMC identified below:

**Performance**
- ___ NBMC 12.24.15 Right of Way
- ___ NBMC 14.05.045 Critical Areas
- ___ NBMC 14.20.510 Shoreline Permit
- ___ NBMC 17.08.130 Land Segregation
- ___ NBMC 18.18.160 Landscaping
- ___ NBMC 19.10.140 Drainage, Grading and Clearing

**Maintenance**
- ___ NBMC 14.05.045 Critical Areas
- ___ NBMC 18.18.150 Landscaping
- ___ NBMC 19.10.110 Drainage, Grading and Clearing

E. Type of Security. Developer has elected, consistent with NBMC, to provide the City with the following type of security for this Agreement:
- ___ Performance Bond
- ___ Maintenance Bond

Developer hereby agrees and binds itself and its legal representatives, successors, and assigns as follows:

**TERMS OF AGREEMENT**

1. The Recitals set forth above are incorporated into the Agreement between the City, Developer and any third party who also signs this Agreement.

2. Developer and any third party shall signify their agreement to specific terms by signing under the terms section below that corresponds to the security chosen in recital E. above.

3. Terms - Performance Bond.
   a. Developer, as Principal, and ______________ as Surety, hereinafter called Surety, are held and firmly bound unto the City, as Obligee, in the penal sum of XXXX ($XX.XX) for payment whereof of Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally as described in 3. b. – f. below.

b. In accord with Recital D. above, Developer is required to provide the City with performance security for the Improvements to assure that all work or action identified in Recital B. are satisfactorily completed.
c. After written notice from the City that Developer has failed to (a) complete all work or action on the Improvements satisfactorily, (b) pay all sums owing to contractors, subcontractors, materialmen, suppliers or others as a result of such work for which a lien against any City property, or property where the improvements are located, has arisen or may arise; or (c) obtain acceptance by the City for the Project; all on or before the time frame as set forth in the Permit, or any extension of time granted by the City in writing, Principal shall complete to the City’s reasonable satisfaction (a) through (c) identified in the written notice by the deadline specified in the written notice, and repair any damage to other work resulting from the Principal’s identified failure.

d. If Principal does not complete the Improvements to the City’s reasonable satisfaction as described in c. above, then within five (5) days after the City’s written demand to Surety, Surety shall pay to the City all amounts necessary to complete the Improvements up to and including the full penal sum of this bond.

e. This Agreement for bond shall remain in effect until the City determines in writing at its sole discretion that the Improvements have been completed, or _____ years from full execution of this Agreement, whichever occurs first.

f. The City, Developer and Surety also agree to be bound by the General Terms in section 5. below.

IN WITNESS THEREOF, the parties hereto have executed this Agreement.

Principal: ___________________________           Surety: _________________________
By: ___________________________               By: _________________________
Title: ___________________________ Title: _________________________
Date: ___________________________ Date: _________________________

4. Terms - Maintenance Bond.

   a. Developer, as Principal, and ______________ as Surety, hereinafter called Surety, are held and firmly bound unto the City, as Obligee, in the penal sum of XXXX ($XX.XX) for payment whereof of Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally as described in 4. b. – 4.f. below.

   b. Principal has constructed the Improvements for the Project under the Permit in accord with the requirements in Recital B.

   c. After written notice from the City of defects due to faulty materials or workmanship related to the constructed Improvements, Principal shall remedy such defects by the deadline specified in the City’s written notice and to the City’s reasonable satisfaction, and pay for any damage to other work resulting therefrom.
d. If Principal does not so remedy such defects to the City’s reasonable satisfaction, then within five (5) business days after the City’s written demand to Surety, Surety shall pay to the City all amounts necessary to remedy such defects up to and including the full penal sum of this bond.

e. This Agreement for bond shall remain in effect for _____ years from full execution of this Agreement.

f. The City, Developer and Surety also agree to be bound by the General Terms in section 5. below.

IN WITNESS THEREOF, the parties hereto have executed this Agreement.

Principal: ___________________________           Surety: _________________________
By: ___________________________               By: _________________________
Title: ___________________________ Title: _________________________
Date: ___________________________ Date: _________________________

5. General Terms.

a. The Developer shall indemnify and hold the City and its agents, employees, and/or officers harmless from, or shall process and defend at its own expense, all claims, damages, suits at law or equity, actions, penalties, losses, or costs of whatsoever kind or nature, brought against the City arising out of, in connection with, or incident to the execution of this Agreement and/or the Developer’s performance or failure to perform any aspect of the Agreement. With respect to any such claim or suit brought against the City, Developer also waives its immunity under Title 51 RCW, the Industrial Insurance Act. This waiver is specifically negotiated between the parties.

b. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington. In the event any suit, arbitration, or other proceeding is instituted to enforce any term of this Agreement, the parties specifically understand and agree that venue shall be exclusively in King County, Washington. The prevailing party in any such action shall be entitled to its attorneys’ fees, expert witness fees, and costs of suit. This Agreement contains the entire agreement between the parties hereto, and no other agreements, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or bind any of the parties hereto. The provisions of this Agreement shall not be construed against either party. If any of the provisions of this Agreement are held to be invalid or unenforceable, the remaining provisions will nevertheless continue to be valid and enforceable.

c. Any failure by the Developer to comply with the terms of this Agreement in a timely manner shall constitute default. Any action or inaction by the City following any default in any term or condition of this Agreement shall not be deemed to waive any rights of the City pursuant to this Agreement.
d. The Developer shall pay all additional costs of the City incurred in the administration of the Agreement, including monitoring by the City as required. Said costs will be paid from the Project permitting deposit. Should there not be sufficient funds in the Project permitting deposit to cover such additional costs, then said costs shall be paid by Developer after receipt of invoice from the City. The Director of Planning and/or the Director of Public Works and/or their designees shall periodically inspect the work required hereunder and inspect completed improvements. Notwithstanding the foregoing, if Developer fails to pay for said inspections, the City may use funds from section 3.d. or 4.d. as applicable to cover said costs. This provision shall not be construed as creating any obligation on the City, its employees, agents and representatives to perform such work.

e. In the event the Developer fails to satisfactorily complete the obligations as described in the City’s written notice, the City’s employees and agents are hereby authorized to enter onto the Property and perform such work. This provision shall not be construed as creating any obligation on the City, its employees, agents and representatives to perform such work.

f. Funds obtained by the City pursuant to 3.d. and 4.d. above may be used by the City to remedy said defects and pay any and all sums owing to contractors, suppliers, laborers, materialmen, subcontractors or others as a result of such work for which a lien against any City property or property where the Improvements are located, has arisen or may arise. Further, said funds may be used to cover the cost of correcting any damage which may occur off-site due to defects, including damage, if any, to public property. This provision shall not be construed as creating any obligation on the City, its employees, agents and representatives to perform such work.

g. Written notice to all parties shall be by prepaid first class mail to the address specified below or as subsequently amended in writing. Notice shall be considered delivered three (3) days after having been deposited in the mail:

City

Developer

Surety

IN WITNESS THEREOF, the parties hereto have executed this Agreement.

CITY OF NORTH BEND

By:______________________
Its______________________
**Institution Notary**

STATE OF WASHINGTON  
County of _______________

I certify that I know or have satisfactory evidence that ___________________________ is the person who appeared before me, and said person acknowledged that (he/she) is authorized to act on behalf of _____________________, the Financial Institution which signed this instrument and acknowledged it to be the Institution’s free and voluntary act for uses and purposes mentioned in the instrument.

Dated: ______________________, 20___

Signature: ______________________________  
Name Printed: ______________________________  
Title: ______________________________  
My appointment expires: ______________________________

**Developer Notary**

STATE OF WASHINGTON  
COUNTY OF KING  

I certify that I know or have satisfactory evidence that ______________ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument on behalf of _________________ for the uses and purposes mentioned in this instrument.

DATED: ____________________________.

__________________________  
(Signature of Notary Public)

(Printed Name of Notary Public)  
Commission Expires: ______________________________
City Notary

STATE OF WASHINGTON )
 ) ss.
COUNTY OF KING )

I certify that I know or have satisfactory evidence that _____________ is the person who appeared before me, and said person acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute the instrument on behalf of _______________ for the uses and purposes mentioned in this instrument.
DATED: ____________________.

__________________________
(Signature of Notary Public)

__________________________
(Printed Name of Notary Public)
Commission Expires: _______________________________
PERFORMANCE AND MAINTENANCE
ASSIGNMENT OF FUNDS AGREEMENT
City of North Bend
Performance and Maintenance Assignment of Funds Agreement

RE: North Bend Permit No.: ________________________________
Applicant: ____________________________________________
Project Address: ________________________________________
Estimated Cost of Completed Project: _______________________

This Performance and Maintenance Assignment of Funds Agreement (the “Agreement”) is made and entered on the last date set forth below, between the City of North Bend (“City”) and the above named Applicant (“Developer”).

RECITALS

A. Project. The undersigned Developer has applied to the City for an Assignment of Funds Agreement for the project known as ___________ (the “Project”), which is the subject of the permit identified above (the “Permit”) located at the address identified above and legally described in the attached Exhibit A (the “Property”).

B. Performance. Subject to the Permit approval granted by the City for the Project, the provisions of the North Bend Municipal Code (“NBMC”) and state law, the Developer will construct or install certain improvements and mitigation in connection with the Project, in accord with the improvements and mitigation identified on the Permit and as shown on the following approved plans: _____________ approved on ________, 20__, (the “Improvements”).

C. Maintenance. Subject to the approval granted by the City for the Project, the provisions of the NBMC and state law, the Developer will maintain the Improvements in accord with the obligation identified in the Permit and as shown on the following approved plans: _____________ approved on ________, 20__ (the “Maintenance”).
D. Code Provisions for Security. Performance and Maintenance of the Improvements are subject to the security requirements in the NBMC identified below:

Performance
___ NBMC 12.24.15 Right of Way
___ NBMC 14.05.045 Critical Areas
___ NBMC 14.20.510 Shoreline Permit
___ NBMC 17.08.130 Land Segregation
___ NBMC 18.18.160 Landscaping
___ NBMC 19.10.140 Drainage, Grading and Clearing

Maintenance
___ NBMC 14.05.045 Critical Areas
___ NBMC 18.18.150 Landscaping
___ NBMC 19.10.110 Drainage, Grading and Clearing

E. Type of Security. Developer has elected, consistent with NBMC, to provide the City with the following type of security for this Agreement:

___ Assignment of Funds to Secure Performance
___ Assignment of Funds to Secure Maintenance

Developer hereby agrees and binds itself and its legal representatives, successors, and assigns as follows:

TERMS OF AGREEMENT

1. The Recitals set forth above are incorporated into the Agreement between the City, Developer and any third party who also signs this Agreement.

2. Developer and any third party shall signify their agreement to specific terms by signing under the terms section below that corresponds to the security chosen in Recital E, above.

3. Terms - Assignment of Funds/Letter of Credit in Lieu of Bond Securing Performance.

   a. _____________________________ (“Financial Institution”) is a financial institution qualified to hold escrow accounts and to do business in the State of Washington.

   b. Developer has establish an escrow account in the form of an assignment of savings account or irrevocable letter of credit with the Financial Institution in the amount of $ ________________, in Account No. ________________ (the “Account”). The escrow account agreement is attached as Exhibit B to this Agreement. Developer and Financial Institution bind themselves, their heirs, executors,
administrators, successors, and assigns, jointly and severally as described in Subsections 3(c) – (g) below.

c. At no time shall any portion of the sums in the Account be released without written authorization from the City. The Account shall represent the costs of the Improvements as identified in Recital B of this Agreement. If, after final review of Developer’s cost estimate by the City Engineer, the cost estimates are deemed low, then the Developer shall add funds to the Account to make up the deficiency in an amount as determined by the City Engineer. Said final review by the City Engineer shall take place within thirty (30) days from the date of execution of this Agreement. In addition, in the event bids received for Improvements and accepted by the Developer are in excess of previous estimates, the amount in escrow shall be increased by the excess amount.

d. After written notice from the City that Developer has failed to (a) complete all work or action on the Improvements satisfactorily; (b) pay all sums owing to contractors, subcontractors, materialmen, suppliers or others as a result of such work for which a lien against any City property, or property where the improvements are located, has arisen or may arise; or (c) obtain acceptance by the City for the Project; all on or before the time frame as set forth in the Permit, or any extension of time granted by the City in writing, Developer shall complete to the City’s reasonable satisfaction all items identified in the written notice by the deadline specified in the written notice, and repair any damage to other work resulting from the Developer’s failures identified in the written notice.

e. In the event the Developer has not completed all items identified in the written notice pursuant to Subsection 3(d) of this Agreement, the Financial Institution shall remit to the City within five (5) working days of the City’s written demand, the amount of funds in the Account, or such lesser amount as may be specified in the demand. The Financial Institution agrees that it shall have no duty or right to evaluate the correctness or appropriateness of any such notice or determination by the City, and shall not interplead, or in any manner, delay payment of said funds to the City.

f. The Account and this Agreement shall remain in effect until the City determines in writing at in its sole discretion that the Improvements have been completed, or _____ years from full execution of this Agreement, whichever occurs first.

g. The City, Developer and Financial Institution agreed to also be bound by the General Terms in Section 5 of this Agreement.

4. Terms - Assignment of Funds/Letter of Credit in Lieu of Bond Securing Maintenance.

a. _____________________________ (“Financial Institution”) is a financial institution qualified to hold escrow accounts and to do business in the State of Washington.
b. Developer has establish an escrow account in the form of an assignment of savings account or irrevocable letter of credit with the Financial Institution in the amount of $ ________________________, in Account No. ___________________ (the “Account”). The escrow account agreement is attached as Exhibit B to this Agreement. Developer and Financial Institution bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally as described in Subsections 4(c) - (g) of this Agreement.

c. At no time shall any portion of the sums in the Account be released without written authorization from the City. Such Account shall represent the costs of the Maintenance as identified in Recital C of this Agreement.

d. After written notice from the City of defects due to faulty materials or workmanship related to the constructed Improvements, Developer shall, by the deadline identified in the written notice, remedy such defects to the City’s reasonable satisfaction and pay for any damage to other work resulting therefrom.

e. If Developer does not so remedy such defects to the City’s reasonable satisfaction, then within five (5) business days after City’s written demand to Financial Institution, Financial Institution shall pay to the City from the Account all amounts necessary to remedy such defects up to and including the full penal sum in the Account. The Financial Institution agrees that it shall have no duty or right to evaluate the correctness or appropriateness of any such notice or determination by the City, and shall not interplead, or in any manner, delay payment of said funds to the City.

f. The Account and this Agreement shall remain in effect for a period of ____ (__) years from the written acceptance of the Improvements by the City.

g. The City, Developer and Financial Institution agree to also be bound by the General Terms in Section 5 of this Agreement.

5. General Terms.

a. The Developer shall indemnify and hold the City and its agents, employees, and/or officers harmless from, or shall process and defend at its own expense, all claims, damages, suits at law or equity, actions, penalties, losses, or costs of whatsoever kind or nature, brought against the City arising out of, in connection with, or incident to the execution of this Agreement and/or the Developer’s performance or failure to perform any aspect of the Agreement. With respect to any such claim or suit brought against the City, Developer also waives its immunity under Title 51 RCW, the Industrial Insurance Act. This waiver is specifically negotiated between the parties.

b. This Agreement shall be governed by and construed in accordance with the laws of the State of Washington. In the event any suit, arbitration, or other proceeding is instituted to enforce any term of this Agreement, the parties specifically understand and agree that venue shall be exclusively in King County, Washington. The prevailing party
in any such action shall be entitled to its attorneys’ fees, expert witness fees, and costs of suit. This Agreement contains the entire agreement between the parties hereto, and no other agreements, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or bind any of the parties hereto. The provisions of this Agreement shall not be construed against either party. If any of the provisions of this Agreement are held to be invalid or unenforceable, the remaining provisions will nevertheless continue to be valid and enforceable.

c. Any failure by the Developer to comply with the terms of this Agreement in a timely manner shall constitute default. Any action or inaction by the City following any default in any term or condition of this Agreement shall not be deemed to waive any rights of the City pursuant to this Agreement.

d. The Developer shall pay all additional costs of the City incurred in the administration of the Agreement, including monitoring by the City as required. Said costs will be paid from the Project permitting deposit. Should there not be sufficient funds in the Project permitting deposit to cover such additional costs, then said costs shall be paid by Developer after receipt of invoice from the City. The Director of Planning and/or the Director of Public Works and/or their designees shall periodically inspect the work required hereunder and inspect completed improvements. Notwithstanding the foregoing, if Developer fails to pay for said inspections, the City may use funds from those deposited pursuant to Sections 3(b) or 4(b) of this Agreement, as applicable, to cover said costs. This provision shall not be construed as creating any obligation on the City, its employees, agents and representatives to perform such work.

e. In the event the Developer fails to satisfactorily complete the obligations as described in the City’s written notice, the City’s employees and agents are hereby authorized to enter onto the Property and perform such work. This provision shall not be construed as creating any obligation on the City, its employees, agents and representatives to perform such work.

f. Funds obtained by the City pursuant to Sections 3(b) or 4(b) of this Agreement may be used by the City to remedy said defects and pay any and all sums owing to contractors, suppliers, laborers, materialmen, subcontractors or others as a result of such work for which a lien against any City property or property where the Improvements are located, has arisen or may arise. Further, said funds may be used to cover the cost of correcting any damage which may occur off-site due to defects, including damage, if any, to public property. This provision shall not be construed as creating any obligation on the City, its employees, agents and representatives to perform such work.

g. Written notice to all parties shall be by prepaid first class mail to the address specified below or as subsequently amended in writing. Notice shall be considered delivered three (3) days after having been deposited in the mail:

City of North Bend:
Developer:

Financial Institution:

IN WITNESS THEREOF, the parties hereto have executed this Agreement.

CITY OF NORTH BEND

By: __________________________
Its: _________________________

STATE OF WASHINGTON )
) ss.
COUNTY OF KING )

I certify that I know or have satisfactory evidence that ______________ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the ___________________ of ____________________ to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: ________________

Print Name: __________________________

NOTARY PUBLIC in and for the State of Washington, residing at ___________________
My commission expires: ________________
DEVELOPER

By: __________________________
Its: __________________________

STATE OF WASHINGTON )
COUNTY OF KING ) ss.

I certify that I know or have satisfactory evidence that ______________ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the ______________ of ______________ to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: ______________

Print Name: __________________________
NOTARY PUBLIC in and for the State of Washington, residing at __________________________
My commission expires: __________________________
FINANCIAL INSTITUTION

By: __________________________
Its: __________________________

STATE OF WASHINGTON )
 ) ss.
COUNTY OF KING )

I certify that I know or have satisfactory evidence that ____________ is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument, on oath stated that (he/she) was authorized to execute the instrument and acknowledged it as the _________________ of ____________________ to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

DATED: ________________

________________________________
Print Name: ______________________
NOTARY PUBLIC in and for the State of Washington, residing at ____________________
My commission expires: ________________
UTILITY EASEMENT
EASEMENT TRANSMITTAL

Easement No.: ______________ Date: ______________

City: NORTH BEND Title Policy No.: __________

Project: __________________________ Drawing No.: __________

Base Map: ______________

Names and Addresses of Parties Involved:

Permanent Easement: __________________________ Square Feet ______

Temporary Permit: ___________________________ Square Feet ______

Access Easement: ___________________________ Square Feet ______

Comments:

Three copies of the aforementioned easement are attached for signatures and recording.

Recorded on Design Drawing By: __________________________

Date: ______________

Recorded in Easement Book By: __________________________

Date: ______________

Transmittal: NORTH BEND PUBLIC WORKS

By: __________________________
Filed for Record at
the request of:
CITY OF NORTH BEND
PUBLIC WORKS
P.O. Box 896
1155 E. North Bend Way
North Bend, WA 98045

Easement No.:

Project:

Tax Parcel ID#:

Abbrev. Legal:

Grantor(s): [name]
[address]

Grantee: CITY OF NORTH BEND

AGREEMENT FOR EASEMENT

THIS AGREEMENT, made this ____ day of ______________________, 20____, by and between CITY OF NORTH BEND, a municipal corporation of King County, Washington, hereinafter termed the "City", and [property owner names], hereinafter termed "Grantor",

WHEREAS, Grantor(s) is/are the owner(s) of land at approximately [street address or location general description], legally described as follows:

[property legal description]
WHEREAS, the City requires an easement for (check those that apply)

- ☐ Sanitary sewer line and appurtenances
- ☐ Water main and appurtenances
- ☐ Storm drainage main and appurtenances

across Grantor's property at a location more specifically described herein below; and

WHEREAS, Grantor has title to said real property and is authorized to grant and convey this easement to the City.

NOW, THEREFORE, in consideration of the sum of One Dollar ($1.00), and other good and valuable consideration in hand paid, receipt of which is hereby acknowledged, and in consideration of the performance by the City of the covenants, terms and conditions hereinafter set forth, Grantor hereby grants, conveys and quitclaims to the City the following easement:

That portion of the above-described real property further described as follows:

[easement legal description]

1. CITY'S USE OF PROPERTY. Said easement is for the purpose of installing, constructing, operating, inspecting, maintaining, removing, repairing, replacing and using gravity and pressure sanitary sewer mains, manholes, water lines, storm drainage pipes, catch basins, swales, ponds, vaults and appurtenances thereto including all valves and fire hydrants (the “facilities”), together with the nonexclusive right of ingress to and egress from said portion of Grantor’s property for the foregoing purposes.

2. USE OF PROPERTY BY GRANTOR. Grantor shall retain the right to use the surface of the easement if such use does not interfere with installation or maintenance of the facilities. Grantor shall not erect buildings or structures of a permanent nature; shall not install any other improvements including trees, large shrubbery, or fences; and shall not change surface grades, except as approved in advance by the City, in any manner which would unreasonably interfere with ingress, egress and access by the City for installation and/or normal maintenance of the facilities. Such buildings, structures or improvements will be deemed an encroachment upon the City’s rights, and Grantor shall be obligated to remove such encroachments at Grantor's expense. Further, the provisions of Paragraph 4 hereof as to restoration shall not apply to any such encroachments in the easement area.
Provided, however, that fences may be constructed which provide gate or other access approved in advance by the City.

3. RESTORATION AFTER ORIGINAL CONSTRUCTION. For original construction, Grantor’s property will be restored to a condition as good as or better than it was prior to the entry by the City. Where possible, photographs will be taken prior to construction to assure the completeness of restoration. Final restoration shall include, as appropriate, sod replacement in existing lawns, hydro-seeding in unimproved areas, and replanting or replacement of existing shrubs and bushes, where such will not unreasonably interfere with the City’s use of the easement. Fences, rockeries, and concrete, asphalt and/or gravel driveways which do not unreasonably interfere with the City’s use of the easement will be repaired or replaced. Large trees that exist within the easement area may be permanently removed during original construction unless otherwise noted in this easement document.

4. RESTORATION AFTER MAINTENANCE. If Grantor’s property is disturbed by the maintenance, removal, repair, or replacement of the facilities, the City shall restore the easement area to a condition as good as or better than it was prior to entry for such purpose by the City.

5. ATTORNEY’S FEES. In case suit or action is commenced by either party, or their successors and/or assigns, to enforce any rights under this easement, or regarding an encroachment on the easement, in addition to costs provided by statute, the substantially prevailing party shall be entitled to an award of attorney’s fees in such sum as the Court may adjudge just and reasonable.

6. EASEMENT TO BIND SUCCESSORS. This easement is permanent and shall terminate only upon agreement of the parties hereto, their successors and/or assigns. This easement, during its existence, shall be a covenant running with the land and shall be binding on the successors, heirs and assigns of the parties hereto.

7. EXEMPTION FROM EXCISE TAX. The City is a municipal corporation with powers of eminent domain. This easement is granted for a public purpose. The City shall hold Grantor harmless from the imposition or payment of any excise tax based upon the conveyance of this easement.
IN WITNESS WHEREOF, I/we have set my/our hand(s) and seal(s) this _____ day of ____________________________, 20____.

________________________________________    ____________________________
Grantor                                             Grantor

STATE OF WASHINGTON)
COUNTY OF KING                           ) ss.

On this ____ day of ____________________________, 20____, before me personally appeared ____________________________ (and) ____________________________, to me known to be the individual(s) described in and who executed the within and foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said Grantors, for the uses and purposes therein mentioned.

WITNESS my hand and official seal hereto affixed the day and year above written.

________________________________________
NOTARY PUBLIC in and for the State of Washington
Residing at: ____________________________
My commission expires: ____________________
IN WITNESS WHEREOF, I/we have set my/our hand(s) and seal(s) this _____ day of ___________________________, 20___.

(Corporation Name)______________

______________________________  ______________________________
President                             Secretary

STATE OF WASHINGTON)
COUNTY OF KING     ) ss.

On this _____ day of ___________________________, 20__, before me personally appeared ______________________ (and) ______________________, to me known to be the President and Secretary, respectively, of ______________________, the corporation that executed the foregoing instrument, and acknowledged said instrument to be the free and voluntary act and deed of said corporation, for the uses and purposes therein mentioned.

WITNESS my hand and official seal hereto affixed the day and year above written.

________________________________________
NOTARY PUBLIC in and for the State of Washington
Residing at: ______________________________
My commission expires: ____________________
IN WITNESS WHEREOF, I/we have set my/our hand(s) and seal(s) this _____ day of ____________________________, 20__.

Corporation Name (LLC) ______________

________________________________________  __________________________________________
Member                               Member

STATE OF WASHINGTON
COUNTY OF KING ) ss.

On this ___ day of ____________________________, 20___, before me personally appeared
(and) ______________________________________________________________________, to me known to be the Manager and/or
Member(s), respectively, of ____________________, LLC, A Washington Limited
Liability Company, the Company that executed the foregoing instrument, and
acknowledged said instrument to be the free and voluntary act and deed of said
Company, for the uses and purposes therein mentioned, and on oath stated that they
were authorized to execute said instrument.

WITNESS my hand and official seal hereto affixed the day and year above written.

________________________________________
NOTARY PUBLIC in and for the State of Washington
Residing at: ________________________________
My commission expires: ______________________

Page 6 of 6
PRE-APPLICATION CHECKLIST
PLAN REVIEW CHECKLIST
FINAL INSPECTION CHECKLIST
SMALL SITE TESC PLAN
SITE DEVELOPMENT CHECKLIST
APPENDIX L

MAINTENANCE FORMS
CITY OF NORTH BEND PUBLIC WORKS
FIRE HYDRANT FIELD INSPECTION REPORT

HYD. # ___________ LOCATION ________________________________

VALVE LOCATION __________________ HYD. MAKE __________________

DATE

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CONDITION OF WATER

MINUTES FLUSHED

INSPECTED BY

REMARKS:


CITY OF NORTH BEND PUBLIC WORKS
WATER BLOW OFF FIELD INSPECTION REPORT

BLOW OFF NO. __________ ADDRESS ________________________________

LOCATION ________________________________

ENCLOSURE TYPE ________________________________

VALVE TYPE __________ SIZE __________ STAND PIPE SIZE __________

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DATE: ________________________________

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REMARKS:

________________________________________

________________________________________
## CITY OF NORTH BEND
### AIR VAC RELIEF VALVE INSPECTION REPORT

Valve #: ___________________  Type: ___________________  Size: ___________

Location: ___________________

Valve Enclosure Type: ___________________

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<th>Date Inspected</th>
<th>Repairs Required</th>
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<th>Valve Operational</th>
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11/15/98
CITY OF NORTH BEND
VALVE INSPECTION FIELD REPORT

Location: ____________________________  Map No: ______________
Valve No: __________  Type: __________  Make: __________  Size: _______
Main Type: __________  Operator: __________  Opens: __________
Number of Turns: _______
Normal Position: __________  Depth to Operator: __________
Date Installed: __________
Remarks: ____________________________

MAINTENANCE RECORD

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<th>Box or Manhole</th>
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11/16/93
APPENDIX M

WATER MAIN BREAK RESPONSE PLAN
AND BOIL WATER NOTICE
WATER MAIN BREAK RESPONSE PLAN

The purpose of this water main break plan is to establish a clear procedure for responding to a water main break in a manner that safeguards the City and its customer.

Procedure

1. Investigate the reported water main break.
2. Throttle water main to minimize damage.
3. Turn source pumps off.
5. Dispatch 3-5 employees from public works team to the site.
6. Call for utility locates 881 or (800) 424-5555.
7. Notify The following agencies and personnel:
   a. The appropriate fire department(s) base on break location:
      Eastside Fire and Rescue, (425) 313-3200
      Water pressure and fire flow will be compromised in affected area.
   b. Don DeBerg, City Engineer, (425) 888-7652
   c. Mark Pray, superintendent, (425) 888-7654
8. Notify all affected customers in person that the water main has been shut off for emergency repairs.
9. Shut off angle stops without check valves at all effected meters prior to water main shut down.
10. Make repairs to the water main. Disinfect repair parts with one percent chlorine solution.
11. Flush the affected area of the distribution system.
12. Turn angle stops back on.
13. If a negative pressure event was created by shutting the water main down completely and pit water was uncontrolled, it will be necessary to deliver precautionary tags to all affected customers.
14. Notify customers that the water main is back on and advise them to use boiled or bottled water for consumption until further notice (hand them a tag). If no one is home, hang a precautionary tag on their door knob.

Tag Reads:

“A Message from the City of North Bend Public Works

The water main has been repaired and flushed and is back in service. A water sample has been taken for analysis. The test results should be back on _______ by _______ am/pm. Water use can continue as normal EXCEPT for water used for consumption. The possibility of contamination due to a water outage is low, but as a precaution we ask that you boil water that will be used for drinking, cooking, or brushing teeth or use bottled water until the test results come back from the testing facility. We are sorry for the inconvenience.

Today’s date ______

If you have additional questions or comments call:
Water Supervisor, Kraig Kramer, (425) 888-7655

15. Take coliform samples to testing facility for analysis.
16. Call out Street Sweeper and Vactor Truck if necessary for cleanup.
17. After cleanup is complete, turn source pumps back on.
18. When the water testing facility declares the coliform samples are satisfactory, notify
affected customers of the results (hand them a tag). If no one is home, hang a tag on
their door knob.

Tag Reads:
“A Message from the City of North Bend Public Works

The test results from the water quality samples taken after the recent water main break on
____________ have returned from the testing facility as satisfactory. The water meets State and
Federal standards. Water used for consumption no longer needs to be boiled. All water use can
return to normal.
Today’s date _____”

19. If a negative pressure event was created with uncontrolled pit water, the Water
Supervisor will notify the Washington State Health Department, and Public Health
Seattle – King County of the incident. In the Water System Supervisor is absent a
Water Quality Specialist will notify the Health Departments.

Contact information is provided below:

Steve Hulsman
Washington State Health Department
Phone: (253) 395-6777
Email steve.hulsman@doh.wa.gov
DRINKING WATER WARNING

City of North Bend water is contaminated with **[fecal coliform/E. coli]**

BOIL YOUR WATER BEFORE USING

_____

**[Fecal coliform or E. coli]** bacteria were found in the water supply on **[date]**. These bacteria can make you sick, and are a particular concern for people with weakened immune systems.

What should I do?

- **DO NOT DRINK THE WATER WITHOUT BOILING IT FIRST.** Bring all water to a boil, let it boil for one minute, and let it cool before using, or use bottled water. Boiled or bottled water should be used for drinking, making ice, brushing teeth, washing dishes, and food preparation **until further notice**. Boiling kills bacteria and other organisms in the water.

  Fecal coliforms and E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, and people with severely compromised immune systems.

- The symptoms above are not caused only by organisms in drinking water. If you experience any of these symptoms and they persist, you may want to seek medical advice. People at increased risk should seek advice about drinking water from their health care providers.

What happened? What is being done?

Bacterial contamination can occur when increased run-off enters the drinking water source (for example, following heavy rains). It can also happen due to a break in the distribution system (pipes) or a failure in the water treatment process.

[Describe corrective action.] We will inform you when tests show no bacteria and you no longer need to boil your water. We anticipate resolving the problem within **[estimated time frame]**.

For more information, please contact **[name of contact]** at **[phone number]** or **[mailing address]**. General guidelines on ways to lessen the risk of infection by microbes are available from the EPA Safe Drinking Water Hotline at 1(800) 426-4791.

**Please share this information with all the other people who drink this water, especially those who may not have received this notice directly** (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

This notice is being sent to you by **City of North Bend**. State Water System ID#: **60100**. Date distributed: **[date]**
APPENDIX N

CHLORINE STORAGE AND USE PROCEDURES MANUAL
CITY OF NORTH BEND PUBLIC WORKS
WATER DIVISION
CHLORINE STORAGE AND USE PROCEDURES

Effective March 2020
NORTH BEND WATER DIVISION CHLORINE STORAGE AND USE
PROCEDURES

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A. INTRODUCTION

The City of North Bend Water Division has one gas chlorination treatment facility within its potable water distribution system. The Mt Si Springs chlorination station is located at the 43500 block of SE 92nd Street in North Bend, WA.

This facility is monitored for chlorine leaks by a gas detector that initiates alarms and other actions as described in the following procedures. All Water Division personnel shall be required to know these procedures before entering a chlorination station.

B. ENTERING A CHLORINATION STATION FOR MAINTENANCE OR CYLINDER CHANGES

1. Notify a staff member to monitor via phone or public works radio prior to entering a chlorine station. Always work in teams of two, one person being an attendant who waits outside of the chlorine gas room.
2. Check the exterior chlorine readout. If chlorine is present, push the emergency shut off button. Leave the area and follow the emergency procedures in Step 8. Otherwise, go to step 4.
3. Turn on the exhaust fan switch.
4. Open and enter the door to the viewing room.
5. Turn on all lights and exhaust fans.
6. Look through the viewing room observation window and observe the chlorine alarm system light. If the chlorine alarm system is activated, go to step 8. Otherwise go to step 9.
7. EMERGENCY PROCEDURES: If you notice the chlorine alarm light is blinking or there is an audible alarm, or if you see any green-yellowish gas in the gas room, leave the station immediately and notify Eastside Fire and Rescue (911). Tell them the wind direction and temperature and if you need medical assistance for chlorine exposure. The fire department shall initiate emergency procedures for a chlorine leak at a chlorination station. Move upwind and proceed to the pre-designated meeting point with the fire department, if wind direction allows. Notify the fire department of your final location. If possible, bring the emergency procedures binder with you, which is located in all water division trucks. Water Division personnel shall not enter a chlorination station while there is a chlorine alarm, unless so approved by the fire department. Water Division personnel shall not attempt the rescue of a chlorine
exposure victim from a gas room. If necessary, the fire department shall stop a chlorine leak and determine when it is safe for Water Division personnel to enter a gas room.

8. Enter the gas room only after the area has been monitored through the viewing room window and determined to be safe. If a leak is detected at any time, immediately leave the station and follow the procedures in Step 8. **Exception:** The release of a small amount of chlorine gas when breaking the seal of the outlet cap to the valve on top of the chlorine cylinder or conducting other maintenance.

C. LEAVING A CHLORINATION STATION AFTER MAINTENANCE OR CYLINDER CHANGES

1. Secure the locks on the gas room door.
2. Turn off the lights and fans in the viewing room, and secure the locks on the door.
3. Lock the chain-link fence gates behind you as you leave.
4. Notify the Water Division staff member/city staff member designated to monitor via phone or public works radio that you are clear of the chlorine station.

D. MAINTENANCE

1. Tools and Materials Needed:
   a. Special Chlorine Institute wrenches
   b. Aqueous ammonia
   c. Replacement lead washers
   d. Steel wool

2. Required Personal Protective Equipment:
   a. Neoprene rubber gloves
   b. Tychem@ SL coveralls
   c. Full face SCBA

3. Daily Maintenance:
   a. Check for leaks in the gas room with Aqueous Ammonia.
   b. Record amount of Chlorine used.
   c. Activate eyewash/shower unit valve momentarily to check for flow.
   d. Check Operation of chlorine equipment.
   e. Do normal housekeeping.

4. Monthly Maintenance:
   a. Test operation of the chlorine leak detector. Verify that the water operations received an alarm. Log this on the paperwork in the viewing room.
   b. Check calibration of the exterior chlorine readout.
5. Quarterly Maintenance:
   a. Inspect full face SCBA for defects.
   b. Check eyewash/shower unit water flow volume and record the results. Verify that water operations received an alarm.
   c. Alternate chlorinators and booster pumps.

6. Annual Training:
   a. Review all chlorine leak response, storage, and use procedures with Water Operations personnel.
   b. Meet with Eastside Fire & Rescue for annual pre-emergency planning session to include a tour of the Mt Si Springs facilities and provide any updates to these procedures.

7. Annual Tier II Reporting:
   a. Shall submit Tier II report annually to state and local emergency management agencies on or before March 1.
   b. As part of the annual pre-emergency planning session with Central Pierce and East Pierce, provide each entity with annual Tier II report.

E. CHANGING 150 POUND GAS CYLINDER

1. Tools and Materials Needed
   a. Special Chlorine Institute Wrenches
   b. Aqueous Ammonia
   c. Replacement Washers
   d. Steel Wool

2. Required Personal Protective Equipment
   a. Neoprene Rubber Gloves
   b. Tychem@ SL coveralls
   c. Full face respirator

CHANGING 150 POUND GAS CYLINDER PROCEDURES

STEP:
1. Don required protective equipment.
2. Be sure the supply is empty by weighing it.
3. Turn on the ventilation fan.
4. When setting Tare Weight for a new cylinder follow the “Load Tank” procedures on the digital scales prior to chlorine cylinder change.
5. Close the regulator valve.
6. Remove the regulator valve; verify cylinder valve is closed tightly.
7. Loosen the yoke clamp screw.
8. Remove the yoke clamp and adapter from the cylinder valve.
9. Remove the washer from the cylinder valve.
10. Support the vacuum regulator using hanger on the wall.
11. Screw the protective outlet cap onto the cylinder valve.
12. Screw the protective hood onto the cylinder.
13. Detach the safety chain.
14. Move the cylinder from the scale to the floor and chain it with the other empty cylinders.
15. Move the full cylinder and position it on the scale.
16. Secure the full cylinder with the safety chain.
17. Remove the protective hood.
18. Turn the cylinder to align the valve opening with the vacuum regulator facing forward.
19. Be sure the cylinder valve is closed.
20. Be sure the packing nut is tight.
21. Remove the protective outlet cap from the cylinder valve.
22. Make sure the surface around the valve opening is clean and smooth.
23. Remove the used washer from the mating surface of the adapter.
24. Place a new washer onto the adapter mating surface.
25. Place the yoke clamp over the cylinder valve.
26. Place the end of the adapter into the opening of the cylinder valve.
27. Tighten the yoke clamp screw.
28. Be sure the washer fits evenly on the mating surfaces of the adapter and the cylinder valve.
29. Open the cylinder valve and close it to charge the connection with chlorine; do not close cylinder valve tight.
30. Check for leaks using aqueous ammonia fumes.
31. Open the auxiliary valve.
32. Using aqueous ammonia fumes, check for leaks at each section as it is charged with chlorine. **If there are leaks, first tighten the fittings. If leaks continue, replace the washers and tighten the fittings. If leaks still continue, isolate the line and repair the leaking fittings.**
33. Open the regulator valve.
34. Leave wrenches on window sill.
35. Press enter on the digital scale and wait for scale to calibrate and read 150 lbs.
36. Add the new pounds of chlorine to the plant records.
37. When the last two cylinders are put online, order more chlorine. This will allow a minimum of two weeks for a new shipment. This action assures that the station will not run out of chlorine.
F. EMERGENCY RESPONSE WHEN OFF-SITE

1. Leak Alarm and Dispatch Communication: If notified of a chlorine alarm, on-call Water Division personnel shall acknowledge the notification by calling Eastside Fire and Rescue (911). The following information shall be provided:
   a. Name of responder
   b. Response time to the site
   c. Location where Water Division personnel will meet the fire department

2. Arrival at meeting point: Upon arrival at the meeting point, which is at the front gate on SE 92nd Street, the on-call Water Division personnel shall obtain the emergency procedures binder from the work truck. Water Division personnel shall assist the fire department as requested, however, they shall not approach the chlorination station until the chlorine leak has been stopped by the fire department, and the fire department has determined it is safe to enter.

3. Entry into the facility by Water Personnel: After the leak has been stopped, and the fire department has determined it is safe to proceed, Water Division personnel, working in teams of 2, shall don full-facemask SCBAs, wear the Gas Badge Pro chlorine gas detector and chemical gloves. They shall proceed to the chlorination station with a bottle of aqueous ammonia. While one technician waits outside, but within hailing distance, the second technician shall enter the chlorination station and verify there is no chlorine leak by testing with the ammonia bottle. **Personnel must be monitored by off-site staff via phone or hand held radio.** Once safe conditions have been verified, alarms can be reset and the chlorination station can be evaluated for required repairs or returned to normal operations.

4. Post incident assessment: A post incident internal assessment should be conducted by Water Division supervisor and/or designee within a reasonable time after an emergency response. The purpose of this assessment is to determine if the procedures provided herein were followed by Water Division employees and to assess whether any changes are necessary to emergency procedures. In conducting such assessment, Water Division personnel recognize that each emergency response may have unique facts and/or circumstances and all assessments must be based on the totality of the circumstances of each incident. If the Water Division supervisor and/or designee participated in the emergency response, it is recommended that the assessment be reviewed by the Water Division supervisor’s manager and/or manager’s designee.

G. REQUIRED SAFETY TRAINING AND RESPIRATOR USE APPROVAL

All personnel involved in the operation or maintenance of chlorination stations shall be required to have the following initial and annual refresher training:
1. Chlorine hazards, the proper handling of chlorine, and emergency procedures for a chlorine leak.
2. Incident Command training.
3. The use of personal protective equipment.
4. The use of respiratory protection.

In addition, personnel shall be provided the following:

1. An annual respirator fit test.
2. Annual medical surveillance for use of a respirator.

H. SAFETY RULES FOR CHLORINE CONTAINERS

1. Ensure stored cylinders are secured by two chains to prevent falling. Separate the full cylinders from the empty cylinders. Chain together each group of cylinders on a different wall – tags will be hung around each cylinder stating “FULL” or “EMPTY”.
2. Ensure the protective hood is in place when moving a cylinder.
3. Never lift a cylinder by its hood.
4. Never expose a cylinder to direct heat.
5. Ensure the outlet cap to the valve on top of the chlorine cylinder is in place when a chlorine cylinder is not in use.
7. Always store cylinders vertically.
I. FIRST AID FOR A CHLORINE EXPOSURE

No action should be taken involving any personal risk. Always work in teams of two.

1. EYE CONTACT: Immediately flush your eyes for 15 minutes using the eyewash located on the exterior of the chlorination station. As soon as possible, the attendant should dial 911 and request aid while the exposed person is using the eyewash.

2. INHALATION: Leave the contaminated area. The attendant should immediately call 911 and request medical aid. If the exposed person is not breathing, the attendant should begin CPR. Continue CPR until the victim is breathing without assistance or medical aid arrives. Keep the victim warm. Do not attempt rescue from a contaminated area.

3. SKIN CONTACT: Immediately flush the body for 15 minutes using the safety shower located on the exterior of the chlorination station. While flushing, remove clothing and shoes. The attendant should dial 911 and request medical aid.

J. CHLORINE FACTS

There are several important facts concerning chlorine which should be known to anyone working with a chlorination system:

1. Chlorine as supplied is a liquid under pressure and heat is required to change it into a gas.
2. Liquid chlorine has a high coefficient of thermal expansion and requires space to expand. It is dangerous if confined without expansion space.
3. Dry chlorine at room temperature is not seriously corrosive to iron, steel, copper, bronze, and many other metals. When combined with moisture it forms strong acids which rapidly attack virtually all metals.
4. Chlorine gas is only slightly soluble in water. 1% is the maximum at 50 degrees F. The maximum solution strength made by chlorinators is 3500 ppm or only about i/d of 1%.
5. Chlorine gas and cold water (less than 50 degrees F) form a solid hydrate.
6. Chlorine gas is about 2.5 times heavier than air. It diffuses slowly into air.
7. Chlorine gas is not poisonous but is a powerful irritant which can be disabling.
8. Chlorine gas and ammonia gas combine readily to form a white cloud of ammonium chloride – useful for leak detection. Chlorine and water solution and ammonia solution are dangerous when mixed and have been known to explode.
9. Chlorine liquid leaks 15 times faster through an opening than chlorine gas. If possible, a leaking container should be oriented so that gas escapes rather than liquid as repairs proceed.
10. Iron or steel will combine spontaneously with chlorine at temperatures near 460 degrees F.
K. CHLORINE RELEASE NOTIFICATION NUMBERS

If there is a chlorine release, which is known to or can reasonably be expected to exceed ten (10) pounds, you must immediately call the following four agencies:

1. Local Fire Department 911
2. State Emergency Response Center 1-800-633-7585
3. National Response Center 1-800-424-8802

L. CITY OF NORTH BEND WATER DIVISION PERSONNEL PHONE LIST

Kraig Kramer 425-888-7655 or 425-864-0241
Jake Thompson 425-888-7655 or 425-864-0233
Jim Cassasa 425-888-7655 or 425-495-0251
Nick Johnson 425-888-7655 or 425-864-0357

M. TRANSPORTING 150 POUND CHLORINE GAS CYLINDERS

The U.S. DOT regulates the transportation of hazardous materials, including chlorine. Applicable DOT regulations appear in Title 49 of the Code of Federal Regulations (49 CFR), and requires special HazMat and safety permits as of January 1, 2005. In most circumstances it is preferable to let the chlorine supplier transport the chlorine to each site. If this arrangement is not possible, The Chlorine Institute’s CI Pamphlet 76 contains recommendations on how to safely transport packaged chlorine. Placards are required for the transportation of any amount of chlorine. Proper labeling of the container is essential and the correct shipping papers must be on the vehicle. These requirements, including the correct wording of the paperwork and labeling, change frequently (Contact the supplier and review 49 CFR to remain current). DO NOT TRANSPORT CHLORINE CYLINDERS WITHOUT YOUR SUPERVISOR’S AUTHORIZATION.
APPENDIX O

CROSS-CONNECTION CONTROL PROGRAM
CITY OF NORTH BEND  
CROSS CONNECTION CONTROL MANUAL

I. Definitions

A. Administrator  
The Administrator, or delegated representative, in charge of the City of North Bend Department of Public Works.

B. Approved  
Accepted by the Building Inspector as meeting an applicable specification stated or cited in this regulation. Make, model, and size approved by the department. Devices appearing on the list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or that are listed or approved by other nationally recognized testing agencies acceptable to the department are considered approved by the department.

C. Auxiliary Water Supply  
Any water supply to the premises other than the City’s approved public potable water supply.

D. Backflow  
The undesirable reversal of flow of water or other substances through a cross-connection into the public water system or consumer’s potable water system.

E. Backflow Assembly Tester  
A person holding a valid BAT certificate issued in accordance with chapter 246-292 WAC

F. Backflow Prevention Assembly  
A RPBA, RPDA, DCDA, PVBA, or SVBA of make, model, and size that is approved by the department. Assemblies that appear on the current approved backflow prevention assemblies list developed by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research or other entity acceptable to the department are considered approved by the department.

G. Backflow Prevention Device  
The nomenclature “device” refers to a backflow preventer that is not designed for in-line testing.

1. Air Gap (AG)  
A physical separation between the free-flowing end of a potable water supply pipeline and the overflow rim of an open or non-pressurized receiving vessel. To be an air gap approved by the department, the separation must be at least twice the diameter of the supply piping measured vertically from the overflow rim of the receiving vessel, and
in no case be less than one inch, when unaffected by vertical surface (sidewalls). The separation must be at least three times the diameter of the supply piping, if the horizontal distance between the supply pipe and a vertical surface (sidewall) is less than or equal to three times the diameter of the supply pipe, or if the horizontal distance between the supply pipe and the intersecting vertical surfaces (sidewall) is less than or equal to four times the diameter of the supply pipe and in no case less than one and one-half inches.

2. Atmospheric Vacuum Breaker (AVB)
A device which contains a float check (poppet), a check seat and an air inlet vent. When water pressure is reduced to a gauge pressure of zero or below, the float check drops, allowing air to enter the device, preventing backsiphonage. It is designed to prevent backsiphonage only.

3. Double Check Valve Assembly (DCVA)
An approved assembly consisting of two independently operating check valves, loaded to the closed position by springs or weights, and installed as a unit with, and between, two resilient seated shut off valves and having suitable connections for testing.

4. Pressure Vacuum Breaker Assembly (PVBA)
An approved assembly consisting of a spring loaded check valve loaded to the closed position and installed as a unit with, and between, two resilient seated shut off valves and having suitable connections for testing. It is designed to protect against backsiphonage only.

5. Reduced Pressure Backflow Assembly (RPBA)
An approved assembly consisting of two independently operated check valves, spring loaded to the closed position, separated by a spring loaded differential pressure relief valve loaded to the open position, and installed as a unit with, and between, two resilient seated shut off valves and having four suitable test cocks for checking the water tightness of the check valves and the operation of the relief valve.

H. Backpressure
Any elevation of pressure in the downstream piping system (by pump, elevation of piping, or stream and/or air pressure) above the supply pressure at the point of consideration which would cause, or tend to cause, a reversal of the normal direction of flow.

I. Backsiphonage
Backflow due to a reduction in system pressure in the purveyor’s distribution system and/or consumer’s potable water.

J. City
The City of North Bend or their duly authorized representative.
K. Contamination
An impairment of the quality of the potable water which creates an actual hazard to the public health through poisoning or through the spread of diseases by sewage, industrial fluids or waste. Also defined as severe or high hazard. Also see Pollution. The term “contamination” used in EPA and state drinking water regulations “Maximum contamination level” bestows a different meaning than that used in describing a cross-connection hazard.

L. Cross-Connection
Any actual or potential physical connection between a public water system or the consumer’s potable water system and any source of non-potable liquid, solid or gas that could contaminate the public water supply by backflow.

M. Customer
For purposes of cross-connection control, the owner or operator of a plumbing system connected to a public water system via a service connection.

N. In-Premise Protection
A method of protecting the health of consumers served by the consumer’s plumbing system, located within the property lines of the consumer’s premises by the installation of an approved air gap or backflow prevention assembly at the point of hazard, which is generally a plumbing fixture.

O. Owner
Any person who has legal title to, or license to operate or occupy, a property upon which a cross-connection inspection will be made or upon which a cross-connection is present.

P. Person
Any individual, partnership, company, public or private corporation, political subdivision or agency of the State or of the United States or any other legal entity.

Q. Pollution
An impairment of the quality of the potable water supply which does not create a hazard to the public health but which does adversely affect the aesthetic qualities of such potable waters for domestic use. Also defined as low hazard. See also Contamination.

R. Premise Isolation
A method of protecting a public water system by installation of approved air gaps or approved backflow prevention assemblies at or near the service connection or other location acceptable to the purveyor to isolated the consumer’s plumbing system from the purveyor’s distribution system.
S. Purveyor
The Purveyor or delegated representative in charge of the City of North Bend water system.

T. Reclaimed Water
Effluent derived in any part from sewage from a wastewater treatment system that has been adequately and reliably treated, so that as a result of that treatment, it is suitable for beneficial use or a controlled use that would not otherwise occur, and is no longer considered wastewater.

U. Water Service Entrance
That point in the owner’s water system beyond the sanitary control of the City; generally considered to be the outlet end of the water meter and always before any unprotected branch.

II. Purpose and Scope
A. This Manual establishes minimum standards for the City to protect the public potable water supply from possible contamination of pollution due to backflow or backsiphon from a customer’s private internal system into the public potable water system.

B. This Manual establishes minimum cross-connection control operating policies, provides guidelines and requirements for installation, testing, and maintenance of approved backflow prevention assemblies and establishes permitting, and inspection requirements for existing and new backflow prevention assemblies.

C. The purpose of this Manual is not to create or otherwise establish or designate any particular class or group of persons who will or should be especially protected or benefited by the terms of this Manual.

III. Authority
A. The Federal Safe Drinking Water Act of 1974 (and Amendments of 1996), the statutes of the State of Washington Title 43 RCW and Chapter 246-290-490 WAC require purveyors to “protect public water systems from contamination due to cross connections”.

B. City of North Bend Municipal Code, Chapter 13.28 regulates cross-connections.

IV. Responsibility
A. The Administrator shall be responsible for administering the provisions of this Manual.

B. If the Administrator determines, consistent with the provisions of this Manual, a backflow prevention assembly is required at any customer’s premises, the Administrator, or his delegated agent, shall give notice to the customer to install an air gap or approved backflow prevention assembly which isolates the customer’s plumbing system from the City’s distribution system.
C. Installation of requested backflow protection assemblies shall be a condition of continued water service from the City. Service from the City’s water supply system to any premises upon which the potential for backflow into the city system exists shall be discontinued or refused unless corrective action is taken in accordance with this manual.

D. Upon installation the customer shall contact the City requesting inspection of said assembly or assemblies. The customer shall be subject to all applicable inspection and permitting fees.

E. Upon approval of the installation by the City the customer shall have the assembly or assemblies tested by a State of Washington certified Backflow Assembly Tester (BAT) and shall submit a copy of the test report signed by the property owner to the City in accordance with this Manual.

V. Failure to Comply - Violations - Penalties

Any person, firm, or corporation who willfully violates any provisions and requirements of this Manual or North Bend Municipal Code Chapter 13.28 shall be subject to discontinuance of supply of City water to the premise where the violation exists. Discontinuance of the City potable supply to the premise shall remain in effect until corrective action as required by the Director is completed, tested and approved.

VI. Requirements

General

A. Compliance with the provisions of the City of North Bend Cross Connection Control Manual shall be a condition of receiving the City of North Bend water supply.

B. It is unlawful for any person to allow any contaminants or pollutants to backfeed from their facility and/or property into the city distribution system. Any connections now existing or hereafter installed that could allow for backfeed of any contaminants or pollutants into the city distribution system shall be discontinued and/or eliminated. Connection which cannot be discontinued and/or eliminated shall require the installation of a State of Washington approved backflow protection assembly that shall be regularly inspected and tested in accordance with the City of North Bend Cross Connection Control Manual.

C. When the City requires that the public water supply be protected by premise isolation, the owner shall be responsible for water quality beyond the outlet end of the premise isolation assembly and should utilize fixture isolation protection for that purpose. Fixture isolation assemblies shall be installed in accordance with the Uniform Plumbing Code.

D. The City may allow that the public supply be protected by fixture isolation for existing customer connections. Such an allowance shall only be permitted so long as the Administrator determines that the level of protection is adequate to protect the City’s distribution system, and the owner agrees, in writing (unless waived by the
City) to (1) implement and maintain the fixture isolating backflow protection to the satisfaction of the City; and (2) comply with all applicable plumbing codes, including permitting requirements.

City of North Bend

E. On new installations the City will provide on-site evaluation and/or inspection of plans in order to determine the type of backflow prevention assembly, if any, that will be required.

F. For premises existing prior to the start of this program, the City will perform evaluations and inspections of plans and/or premises and inform the owner by letter of any corrective action deemed necessary, the method of achieving the correction, and the time allowed for the correction to be made. Up to sixty days will be allowed; however, this time period may be shortened by the Administrator depending upon the degree of hazard involved and the history of the device(s) in question.

G. Premises are subject to inspection on or after the expiration date of required action to correct a cross-connection. Premises that have failed to comply with the City’s request shall receive written notice, via registered mail, that water service to the premise will be terminated within a period not to exceed thirty (30) calendar days. In the event the owner informs the City of extenuating circumstances as to why the correction has not been completed, the City may grant a time extension up to but not exceeding sixty (60) days.

H. If the City determines at any time that a serious threat to the public health exists, the water service shall be terminated immediately, provided, however, that notice will be posted on the premises affected at the time said service is terminated.

I. Inspection shall be done during the initial installation, during on-site reviews of existing installations, and after any relocation.

J. When an initial installation or test identifies a backflow prevention assembly is not properly functioning, the owner shall correct the malfunction and have the assembly inspected and re-tested until the backflow device operates correctly.

Owner

K. The owner shall be responsible for the elimination or protection, by an air gap or approved backflow prevention assembly, of all cross-connection on their premises.

L. The owner after having been informed by a letter from the City shall, at their expense, install any and all required backflow prevention assemblies.

M. The Owner shall, at their expense, be responsible for having all backflow prevention assemblies tested: (1) at the time of installation, (2) annually after installation, or more frequently if test indicate repeated failures to meet test criteria; and (3) after an assembly is repaired, reinstalled or relocated or an air gap is re-plumbed or replaced by an approved RPBA. The test shall be performed by a State of Washington certified Backflow Assembly Tester (BAT) and signed by the owner. The results of
the tests shall be reported within 30 days to the Administrator on a form provided by
or approved by the City.

N. The owner shall, immediately, or no later than 30 days, or otherwise as directed by
the Administrator, correct any malfunction of the backflow preventer which is
revealed by periodic testing.

O. The owner shall inform the City of any proposed or modified cross-connection and
also any existing cross-connections of which the owner has actual knowledge but has
not been found by the City.

P. The owner shall install only backflow prevention assemblies approved by the City.

Q. Any owner having a private well or other private water source shall not cross-connect
to the City’s system.

R. The owner shall provide access to premises to the backflow prevention assembly at
the City’s request. Failure to provide access to inspect facilities shall be grounds for
termination of water service.

S. The owner shall be responsible for the payment of all fees for permits, annual or
semi-annual device testing, re-testing in the case that the assembly fails to operate
correctly, and any re-inspection for non-compliance with City requirements. Permits
and fee schedules shall be as specified in the applicable sections the City of North
Bend’s Municipal Code.

VII. Installation and Testing - Minimum Requirements

A. Minimum requirements for the installation and testing of all backflow protection
assemblies shall be in accordance with the Cross Connection Control Manual -
Accepted Procedure and Practice produced by the Pacific Northwest Section,
American Water Works Association (PNWS/AWWA), Sixth Edition, December
1995, including subsequent revisions, adopted by reference herein. A copy is
available for viewing at the Public Works Department of the City of North Bend,
additional copies can be purchased from the PNWS/AWWA.

B. In addition, all backflow protection assemblies shall be installed at a location that is
easily accessible for inspection and testing. Assemblies located in vaults shall have
adequate clearances and depths to allow the City to inspect and test. Assemblies that
cannot be easily and readily inspected shall be required to be relocated and re-
plumbed as required by the City. The owner shall contact the City of applicable
installation requirements and standards.

C. All bypass lines parallel to a line on which a backflow prevention assembly is
installed shall have an approved backflow prevention assembly installed that is equal
in type to the assembly required by the City on the main line.
VIII. Backflow Protection Devices

A. All backflow protection assemblies (RPBAs, RPDAs, DCVAs, DCDAs, PVBAs and AVBs) installed for protection of the public water supply shall be models included on the current approved backflow prevention assemblies list developed by the University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research Manual of Cross Connection Control or other such agency acceptable to the Director. The Washington Department of Health maintains a copy of this list (DOH Publication # 331-090). A copy is available for viewing at the Public Works Department of the City of North Bend, additional copies can be purchased from the PNWS/AWWA.

B. Any existing backflow protection assembly in use, but not currently listed by USC, can continue to be used providing all the following conditions are met

1. The assemblies were included on the City and/or USC list of approved backflow prevention assemblies at the time of installation;
2. The assemblies have been properly maintained;
3. The assemblies are functioning properly based on inspection by the City and testing by a certified Backflow Assembly Tester;
4. The degree of protection is satisfactory for protection of the City’s water system as determined by the Administrator.

C. When an unlisted assembly does not meet the above conditions, is moved, or can not be repaired using spare parts from the original manufacturer, the assembly shall be replaced by an assembly currently listed as approved by the USC Foundation for Cross-Connection Control and Hydraulic Research or other such agency acceptable to the Administrator.

IX. Applicability

A. The provisions of this Manual are applicable to all connections to the City water supply. The City recognizes there are varying degrees of risks associated with different types of uses and will consider this when determining if a cross connection exists and applicable backflow prevention assemblies.

B. The following Tables 1, 2, 3 and 4 are derived from the Pacific Northwest Section - American Water Works Association’s Cross Connection Control Manual, Accepted Procedures and Practices, Sixth Edition, 1995. These tables, subject to revisions, provide minimum requirements and guidance for the assessment of the degree of hazard and required level of protection. If the actual degree of hazard is determined, by the Administrator, to be higher than these tables indicate, a higher level of protection may be required.

Table 1. Summarizes the relative level of protection provided by the different categories of assemblies and devices.

Table 2. A list of customer categories or types of water use where premise isolation is required in all cases.
Table 3. A list of customer categories or types of water use where premise isolation is required for existing service connections is accordance with the provisions of Section VI - D of this Manual.

Table 4. A list of some of the fixtures, equipment or uses of water which may constitute a cross connection and the minimum level of protection required.

**TABLE 1
RELATIVE LEVEL OF PROTECTION**

<table>
<thead>
<tr>
<th>Abbreviations</th>
<th>Description/Application Summary [1]</th>
<th>Relative Level of Protection [2]</th>
</tr>
</thead>
</table>
| AG            | Approved Air Gap  
For high and low health hazards, backpressure and backspionage                                   | 1                                |
| RPBA & RPDA   | Reduced Pressure Backflow Assembly  
Reduced Pressure Detector Assembly  
For high and low health hazards, backpressure and backspionage                                       | 2                                |
| DCVA & DCDA   | Double Check Valve Assembly  
Double Check Detector Assembly  
For low health hazards only, backpressure and backspionage                                             | 3                                |
| PVBA & SVBA   | Pressure Vacuum Breaker Assembly  
Spill-Resistant Vacuum Breaker Assembly  
For high and low health hazards, backspionage only                                                    | 4                                |
| AVB           | Atmospheric Vacuum Breaker  
For very low health hazards, and backspionage only                                                   | 5                                |
| HBVB          | Hose Bib Vacuum Breaker  
For very low health hazards, and backspionage only                                                   |                                  |
| LFVB          | Lab Faucet Vacuum Breaker  
For very low health hazards, and backspionage only                                                   |                                  |
| DCAV          | Dual Check with Atmospheric Vent  
For very low health hazards, backpressure and backspionage                                              |                                  |
| DCV           | Dual Check Valve or Meter Check Valve (Dual)  
For very low health hazards, backpressure and backspionage                                              |                                  |

Note: [1] The above descriptions of applicable and relative level of protection are based on the perspective of the City’s selection of assemblies and devices for the prevention of the contamination of the water distribution system. Plumbing codes may classify some devices as providing higher levels of protection and as suitable for both backpressure and backspionage.

[2] This Manual does not address the location, inspection, and testing of AVBs, HBVBs, LFVBs, DCAVs and DCVs.
<table>
<thead>
<tr>
<th>Category of Premise or Use of Water</th>
<th>Assessed Health Hazard</th>
<th>Minimum Protection Recommended at Meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Radioactive material processing plants or nuclear reactors</td>
<td>severe</td>
<td>RPBA &amp; AG</td>
</tr>
<tr>
<td>Wastewater treatment plants or wastewater pump station</td>
<td>severe</td>
<td>RPBA &amp; AG</td>
</tr>
<tr>
<td>Hospitals, medical centers, medical/dental or vet clinics, plasma centers, blood plasma centers</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Mortuaries</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Laboratories</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Metal plating industries</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Petroleum processing or storage plants</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Food processing and beverage bottling plants, canneries, packing (slaughter) houses</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Film processing facilities</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Piers and docks, graving docks, boat marinas, dry docks</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Commercial laundries and dry cleaners</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Premises restricting inspection</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Premises with unapproved auxiliary supply, including reclaimed water</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>New</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Existing</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Interconnected with potable water supply</td>
<td>low</td>
<td>DCVA</td>
</tr>
<tr>
<td>Not interconnected with potable water supply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premises with approved auxiliary supply</td>
<td>low</td>
<td>DCVA</td>
</tr>
<tr>
<td>Car washes</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Premises with fire sprinkler systems and/or private hydrants</td>
<td>high</td>
<td>RPBA/RPDA</td>
</tr>
<tr>
<td>With chemical addition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without chemical addition</td>
<td>low</td>
<td>DCVA/DCDA</td>
</tr>
<tr>
<td>Tall buildings (over 30 feet) (elevation above the connection between the service line and the distribution system)</td>
<td>low</td>
<td>DCVA</td>
</tr>
<tr>
<td>Irrigation Systems (individually metered and supplied by domestic water supply)</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>With chemical addition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Without chemical addition</td>
<td>low</td>
<td>DCVA</td>
</tr>
<tr>
<td>Survey access denied or restricted</td>
<td>high</td>
<td>RPBA</td>
</tr>
</tbody>
</table>
### TABLE 3
**RECOMMENDED SERVICE ISOLATION**

<table>
<thead>
<tr>
<th>Category of Premise or Use of Water</th>
<th>Assessed Health Hazard</th>
<th>Minimum Protection Recommended at Meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery manufacturing or repair facilities</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Ice manufacturing and cold storage plants</td>
<td>high</td>
<td>RPBA</td>
</tr>
<tr>
<td>Residential irrigation</td>
<td>low</td>
<td>DCVA</td>
</tr>
</tbody>
</table>

### TABLE 4
**RECOMMENDED PROTECTION AT FIXTURES AND EQUIPMENT**

<table>
<thead>
<tr>
<th>Description of fixture, equipment, or use of water [1]</th>
<th>Assessed Health Hazard</th>
<th>Minimum Protection at Fixture</th>
<th>Additional Premiscor Internal Isolation [2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air compressor</td>
<td>low</td>
<td>DCVA</td>
<td></td>
</tr>
<tr>
<td>Air conditioning systems</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Air washers</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Aquarium make-up water</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Aspirators, medical/lab</td>
<td>high</td>
<td>AVB</td>
<td>RPBA</td>
</tr>
<tr>
<td>Aspirators, medical/lab</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Aspirator, weedicide, herbicide, and pesticide</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Aspirator, vault drain</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Autoclave</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Autopsy tables</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Baptismal fountain</td>
<td>high/low</td>
<td>RPBA, AG/AVB</td>
<td></td>
</tr>
<tr>
<td>Bathtub, below rim filler</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Bedpan washer</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Post-mix beverage dispenser using CO2</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Bidets</td>
<td>low</td>
<td>AVB</td>
<td></td>
</tr>
<tr>
<td>Boiler feed lines</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Bottle washing equipment</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Bottle washing equipment</td>
<td>high</td>
<td>PVBA/AVB</td>
<td>RPBA</td>
</tr>
<tr>
<td>Box hydrant (irrigation)</td>
<td>high</td>
<td>PVBA/DCVA</td>
<td></td>
</tr>
<tr>
<td>Brine tank</td>
<td>low</td>
<td>AG/DCVA</td>
<td></td>
</tr>
<tr>
<td>Can washing equipment</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Can washing equipment</td>
<td>high</td>
<td>PVBA/AVB</td>
<td>RPBA</td>
</tr>
<tr>
<td>Chemical feed tank for industrial process</td>
<td>high</td>
<td>AG/RPBA</td>
<td>RPBA</td>
</tr>
<tr>
<td>Description of fixture, equipment or use of water [1]</td>
<td>Assessed Health Hazard</td>
<td>Minimum Protection at Fixture</td>
<td>Additional Premise or Internal Isolation [2]</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>------------------------</td>
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</tr>
<tr>
<td>Chemical feeder for commercial cleaners</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Chemical feeder for commercial cleaners</td>
<td>high</td>
<td>AVB/PVBA</td>
<td>RPBA/DCVA</td>
</tr>
<tr>
<td>Chlorinators</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Commercial coffee urns</td>
<td>low</td>
<td>AG/AVB</td>
<td></td>
</tr>
<tr>
<td>Computer cooling lines</td>
<td>high</td>
<td>RPBA</td>
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</tr>
<tr>
<td>Condensate tanks</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Commercial cooling kettles</td>
<td>low</td>
<td>AG/AVB</td>
<td></td>
</tr>
<tr>
<td>Cooling towers</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Decorative ponds</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Degreasing equipment</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Dental equipment/cuspidors</td>
<td>high</td>
<td>RPBA</td>
<td>RPBA</td>
</tr>
<tr>
<td>Dialysis equipment</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Dishwashers</td>
<td>low</td>
<td>AVB</td>
<td></td>
</tr>
<tr>
<td>Drinking fountains</td>
<td>low</td>
<td>AG</td>
<td></td>
</tr>
<tr>
<td>Dye vats and tanks</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Etching tanks</td>
<td>high</td>
<td>AG/RPBA</td>
<td>RPBA</td>
</tr>
<tr>
<td>Fermenting tanks</td>
<td>high</td>
<td>AG/RPBA</td>
<td>RPBA</td>
</tr>
<tr>
<td>Fertilizer injection</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Film processors</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Fire dept. connection</td>
<td>low</td>
<td>DCVA</td>
<td></td>
</tr>
<tr>
<td>Fire sprinkler system w/o chemical addition</td>
<td>low</td>
<td>DCVA/DCDA</td>
<td></td>
</tr>
<tr>
<td>Fire sprinkler system with chemical addition</td>
<td>high</td>
<td>RPBA/RPDA</td>
<td></td>
</tr>
<tr>
<td>Floor drains</td>
<td>high</td>
<td>AG</td>
<td></td>
</tr>
<tr>
<td>Flushing floor drains</td>
<td>high</td>
<td>AVB</td>
<td>DCVA</td>
</tr>
<tr>
<td>Fume hoods (lab)</td>
<td>high</td>
<td>AVB</td>
<td>RPBA</td>
</tr>
<tr>
<td>Garbage can washers</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Heat exchangers other than double wall with leak path</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Heat pumps</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>High pressure washers w/o chemical injection</td>
<td>low</td>
<td>DCVA</td>
<td></td>
</tr>
<tr>
<td>Hose bibbs (residential)</td>
<td>low</td>
<td>AVB/HBVB</td>
<td></td>
</tr>
<tr>
<td>Hose bibbs (industrial)</td>
<td>varies</td>
<td>AVB/HBVB</td>
<td>RPBA/DCVA</td>
</tr>
<tr>
<td>Hoses, kitchen rinse</td>
<td>low</td>
<td>AVB</td>
<td></td>
</tr>
<tr>
<td>Hot tubs</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Commercial hot water heating boilers</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Hydrotherapy baths</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Ice makers</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Industrial fluid systems</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Description of fixture, equipment or use of water</td>
<td>Assessed Health Hazard</td>
<td>Minimum Protection at Fixture</td>
<td>Additional Premises or Internal Isolation [2]</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------------</td>
<td>-------------------------------</td>
<td>---------------------------------------------</td>
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<tr>
<td>Intertied (looped) services</td>
<td>low</td>
<td>DCVA</td>
<td></td>
</tr>
<tr>
<td>Irrigation system (lawn) with chemical addition</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Irrigation system (lawn) w/o chemical addition</td>
<td>low</td>
<td>PVBA/DCVA</td>
<td></td>
</tr>
<tr>
<td>Janitor sinks</td>
<td>low</td>
<td>AVB/HBVB</td>
<td></td>
</tr>
<tr>
<td>Kitchen equipment</td>
<td>low</td>
<td>AVB</td>
<td></td>
</tr>
<tr>
<td>Laboratory equipment</td>
<td>high</td>
<td>AVB/LFVB</td>
<td>RPBA</td>
</tr>
<tr>
<td>Laundry machines, commercial</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Livestock drinking tanks</td>
<td>high</td>
<td>AC/AVB DCVA</td>
<td></td>
</tr>
<tr>
<td>Make-up tanks</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Mobile carpet cleaners</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Pesticide applicator trucks</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Photo developing sinks/tanks</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Private fire hydrants</td>
<td>low</td>
<td>DCVA</td>
<td></td>
</tr>
<tr>
<td>Pump prime lines</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Radiator flushing equipment</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Recreational vehicle dump station</td>
<td>severe</td>
<td>AG</td>
<td>RPBA</td>
</tr>
<tr>
<td>Sewer connected equipment</td>
<td>severe</td>
<td>AG</td>
<td></td>
</tr>
<tr>
<td>Sewer flushing</td>
<td>severe</td>
<td>AG</td>
<td></td>
</tr>
<tr>
<td>Spas</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Steam generating equipment</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Sterilizers</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Stills</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>Sumps</td>
<td>high</td>
<td>AG</td>
<td></td>
</tr>
<tr>
<td>Swimming pools</td>
<td>high</td>
<td>AG/RPBA</td>
<td></td>
</tr>
<tr>
<td>Trap primers</td>
<td>high</td>
<td>AG</td>
<td></td>
</tr>
<tr>
<td>Used or gray water systems</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
<tr>
<td>X-ray equipment</td>
<td>high</td>
<td>RPBA</td>
<td></td>
</tr>
</tbody>
</table>

[1] The information in Table 4 may differ from the backflow prevention requirements for individual plumbing fixtures found in plumbing codes. For public health protection within a customer’s premise, the Uniform Plumbing Code governs. Table 4 is provided to illustrate only some of the health hazards found in plumbing systems. This table will be used by the City in assessing the degree of hazard a customer’s plumbing system places upon the City’s water distribution system. Deficiencies in backflow prevention within the customer’s premise should be compensated for through the selection of an appropriate assembly for premise isolation.

[2] Where a high health hazard is assessed, the use of an atmospheric vacuum breaker or other backflow devise for protection at a fixture should only be allowed when area or premise isolation is provided by an approved backflow assembly.
X. Administrative Procedures

The City of North Bend has recently adopted this Cross Connection Control Program Manual. In order to carry out the provisions of these new requirements, a surveillance program based upon proper management, effective customer education, adequate record keeping, and aggressive inspections must be properly implemented.

Such a program for cross connections and sanitary hazards initially requires the inspection of all new and existing buildings, structures, and grounds. As proposed, this procedure will require the Public Works Administrator or designated representative and Building Official to assist with these requirements. Each must be knowledgeable in the field of pumping and building inspection, pipe arrangements, and certified as a cross-connection specialist.

1. Minimum Requirements

The following requirements are based on the most current edition of the Cross Connection Control Manual published by the Pacific Northwest Section - American Water Works Association (PNWS-AWWA). These requirements are provided for clarification and in any disagreement between these listed below and requirements listed elsewhere in this Manual, the more restrictive shall govern. As described in elsewhere in this manual, the premise isolation requirement may be waived or reduced for certain existing businesses, providing certain conditions are met.

RPBAs

A. Premises on which materials dangerous to health or wherein toxic substances are handled, shall be required to have an approved reduced backflow assembly installed at the service connection.

B. Premises where entry is physically restricted so that inspections for cross connections cannot be made sufficient to assure that cross connections do not exist, shall be required to have an approved reduced pressure backflow assembly installed at the service connection.

C. Premises having an auxiliary water supply with internal cross connections that are not correctable or intricate plumbing arrangements which make it impractical to ascertain whether or not cross connections exist, shall be required to have an approved reduced pressure backflow assembly installed at the service connection.

DCVAs

D. Premises which handle a substance that is objectionable, although not a health hazard, in a manner constituting a potential cross connection, shall be required to have an approved double check valve assembly installed at the service connection.

E. Premises having an auxiliary water supply with no known cross connections, shall be required to have an approved double check valve assembly installed at the service connection.
F. Premises on which any substance that is not a health hazard but is under pressure so as to enable entry into the public water supply or where a cross connection could reasonably be expected to be present, shall be required to have an approved double check valve assembly installed at the service connection.

G. Premises which have a repeated history of cross connections being established or re-established, shall be required to have an approved double check valve assembly installed at the service connection.

Fire Protection Systems

H. Premises having a fire protection system where no chemicals are allowed to be used, shall be required to have an approved double check valve assembly (DCVA) or approved double check detector assembly (DCDA) installed at the fire service connection.

I. Residential premises having a fire protection system where no chemicals are allowed to be used, shall be required to have an approved double check valve assembly (DCVA) installed at the water service connection.

J. Residential fire systems with a flow through system using approved potable water pipe and materials shall not be required to install backflow protection.

Irrigation Systems

K. Premises having an irrigation system where chemicals or herbicides are allowed to be used, shall be required to have an approved reduced pressure backflow assembly installed at the service connection.

L. Non-residential premises having an irrigation system which is subject to flooding, backpressure, elevated piping or where compressed air is allowed to be used, shall be required to have an approved double check valve assembly installed at the service connection.

M. Non-residential premises having an irrigation system which does not fall into one of the prior two categories, shall be required to have an approved pressure vacuum breaker assembly or double check valve assembly installed on the system.

2. New and Proposed Construction

A. Upon application for a building permit, the Building Official or authorized designate shall require detailed plans and specifications for the plumbing installation. The customer shall also be required to complete a Cross Connection Control Program Survey.

B. The Building Official, or authorized designate, shall review these plans, specifications and survey to determine the probability of cross connections, the availability of auxiliary water supply, and the handling of substances which, if introduced into the water supply, would constitute a health, plumbing, or system hazard.

C. During the construction phase of any new building, structure, or ground installation, and during the plumbing inspection, the Building Official or authorized designate will
also perform the required cross connection control inspection. Upon completion of the plumbing inspections the Building Official or authorized designate shall complete the CCC Field Inspection Form, to document that subject cross connection control inspection has been made and to document the location of any and all backflow prevention assemblies and/or devices.

D. All backflow prevention assemblies installed internally or at the service connection shall be tested by a certified Backflow Assembly Tester and the test reports submitted to the Building Official or authorized designate (using the Backflow Assembly Test Report form).

3. **Existing Buildings, Structures, and Grounds**

The systematic program of inspection shall be established with priority given on the basis of risk to public health and shall be conducted as outlined below.

A. A form letter will be sent to each commercial and industrial metered customer explaining the program and stressing the relationship between cross connections and water-borne disease epidemics, types of health hazards, and cross connection. The duties and liabilities of the owners or managers as well as the rules and regulations that apply, will be explained. The letter will also include a questionnaire of desired information such as the type of water used on the premises, auxiliary water supplies, chemicals used, and certain types of fixtures installed. These questionnaires are to be returned to the Building Official or authorized designate.

B. Based on the known information of the customers' operation and the information received on the questionnaire, an inspection schedule will be prepared based on the location of the hazard within the facility and the degree of hazard posed to the utility.

C. Approximately 10 days prior to the scheduled date of inspection the City will contact the owner, requesting an appointment with the owner/manager of the premises to discuss the necessity for the inspection and other pertinent matters.

D. On the appointed date the Building Official or authorized designate will meet with the owner/manager and explain the purpose of the inspection. The Building Official or authorized designate will suggest the owner/manager appoint an individual from his firm that is knowledgeable with the firm’s plumbing system to accompany the inspectors. At this time, the Building Official or authorized designate can obtain any blue prints or drawings of the “in-plant” system that are available and discuss any questions or other problems the owner/manager may have.

E. On the date of the scheduled inspection, the City of North Bend’s Inspector, with the owner’s representative, will make a complete physical survey of all exposed piping. The underground system is to be checked as accurately as possible. All lines will be sketched on a field drawing, except where intricate plumbing arrangements make it impractical. In this case an “as-built” drawing will be requested. Each line shall be followed to its end and a survey made to determine whether there are any actual or
potential cross connections or any conditions that might tend to pollute the potable water system.

F. Immediately upon completion of the survey the inspection team will orally brief the owner/manager of their findings.

G. The inspection team will prepare a written report that will include, but shall not be limited to, the following:
   - Complete identifying information.
   - All cross connections found, their location and optional methods of control.
   - All industrial fluids, chemical, or other contaminating liquids used or pumped under pressure and their use and probability of cross connections.
   - Any applicable drawings, sketches, blueprints or other documents used in support of the inspection.
   - A summary of findings.
   - Specific recommendations.

H. The inspection team will submit a copy of the completed report to the Building Official or authorized designate.

I. Upon completion of the review of the report the Building Official or authorized designate shall prepare a letter to the respective customer. The letter will outline the findings of the report, the corrective action required, and establish a corrective action completion date (usually 60 days). A copy of the report will be maintained on file for review by the State Department of Health.

J. On the corrective action completion date, or soon thereafter, the Inspector shall take a copy of the report and re-inspect the items that required corrective action.

K. Upon completion, the Inspector shall report in writing to the Building Official or authorized designate, the results of the re-inspection.

L. After receiving the results of the re-inspection the Building Official or authorized designate shall take such action as deemed appropriate under the provisions of the City's Cross Connection Control Manual.

M. When all required actions have been completed and the device(s) tested by a certified Backflow Assembly Tester, a letter shall be sent to the Owner. Said letter will inform them of the annual testing requirements, including maintaining all backflow prevention devices in proper operating order as evidenced by submission, to the City, of the annual testing report.

4. Residential Education and Awareness

The City may develop or acquire pamphlets and/or bill stuffers to send to all of the water system customers. These shall include, but are not limited to, the following subjects:

   A. Home irrigation safety;
   B. Residential fire sprinkler systems;
C. Health hazards associated with hose connection (chemical sprayers, radiator flush kits, etc.), utility sinks, and other household dangers.

If the City develops this program, this information shall be mailed directly to the customers.

The City shall also take advantage of other opportunities for public education by developing a traveling exhibit that can be set up at community events, schools and at City Hall.

5. Registering of Certified Testers

The City will maintain a list of Backflow Assembly Testers (BATs) that may be provided to customers. Persons or organizations wishing to be added to this list will be required to provide the City with copies of the following:

A. Proof of current certification by the State of Washington as a BAT for all persons that are authorized to perform tests.

B. Proof of current calibration tests performed for all testing equipment (annual calibration is required).

C. A copy of a current business license authorizing the company to work in the City of Sequim.

6. Record keeping and tracking of assemblies

The City will establish records that will meet all of the record keeping requirements of the state and allow effective monitoring and tracking of customer compliance with the annual backflow assembly testing requirements. The general content of the City’s records will be as follows:

Information on each assembly will include: the location of the business (or water service) where it is located (some businesses may have multiple devices), initial inspection information for each location (inspector, date, survey #, comments) installation information (installed by, contact info., date installed, specific location, water line size, water pressure, hazard level and hazard protected), assembly information (assembly #, type manufacturer, size, model, serial # and inspection period), and a complete testing history (initial and final test results for each year with: pass/fail, test type, date, tester’s name and certification #, line pressure and test results for all three valves, repair information, test kit info and owner’s signature.)

7. Standard Forms and Letters

A. Form Letter to be sent to all commercial and industrial customers
B. CCC Program Survey
C. CCC Plan Check
D. CCC Inspection Form
E. Backflow Assembly Test Form
Re: Backflow Prevention Device Testing Program

Dear Water Customer,

The backflow prevention device(s) installed in your supply system is (are) due for annual testing as required by State Code WAC 248-54-285. Our records show a total of device(s) in your system. Please have the testing performed by a certified cross connection specialist, issued by the State of Washington Department of Social and Health Services.

If a device fails its test, please have the necessary repairs made. Upon completion of a satisfactory test, fill out the enclosed test & maintenance report and return it to this office within thirty (30) days.

Additional information regarding this program may be obtained by contacting 888-0282.

Sincerely,

Pat Osborne
Public Works Director

Fergus McGrath
Cross Connection Control Specialist
ORDINANCE NO. 371

AN ORDINANCE OF THE CITY OF NORTH BEND, WASHINGTON PROHIBITING CROSS-CONNECTIONS AND PROVIDING FOR BACK FLOW PREVENTION DEVICES AND PROVIDING FOR DISCONTINUANCE OF SERVICE FOR VIOLATIONS.

WHEREAS, the Department of Social and Health Services, State of Washington, has enacted certain rules and regulations requiring municipalities to regulate and control cross-connections, utilize back flow devices and prevent possible contamination of the public water systems; and

WHEREAS, the purpose of this ordinance is to protect the health of water consumers by the control of actual and/or potential cross-connections through two basic programs:

A. Through proper installation and surveillance of back flow prevention devices on service lines leading to premises where cross-connection exists, or are likely to occur; and

B. Through inspection and regulation of plumbing within premises to minimize the danger of contamination of water systems on these premises or the public water supply itself and such is in the best interest of the City of North Bend.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF NORTH BEND DOES ORDAIN AS FOLLOWS:

Section 1: Any customer, regardless whether residing within or without the city limits of the City of North Bend, which is now receiving water from the City of North Bend water system or who will in the future receive water from the City of North Bend, shall comply with the rules and regulations contained in this ordinance.

Section 2: For the purpose of this ordinance, "customer" is any person, family, business, corporation, partnership or firm connected to the City of North Bend water supply.

Section 3: In addition, any water district, municipal organization or other organization which is connected to the City of North Bend water supply for water and/or which is furnished to people or members within said district or organization shall cause all the people or members within said district or organization as well as the district or organization itself to comply with the rules and regulations contained in this ordinance.

Section 4: These regulations are to be reasonably interpreted. It is their intent to recognize the varying degrees of hazard and to apply the principle that the degree of protection should be commensurate with the degree of hazard.

Section 5: As used in this ordinance, unless the context states otherwise, the following definition shall apply:

(A) Air gap separation means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supply water to a tank, plumbing fixture, or other device and the flood level
rim of the receptacle, and shall be at least double the diameter of supply pipe measured vertically above the flood level rim of the vessel. In no case shall the gap be less than one inch.

(B) Auxiliary supply means any water source or system, other than the public water supply, that may be available in the building or premises.

(C) Back flow means the flow other than the intended direction of flow, of any foreign liquids, gases, or substances into the distribution system of a public water supply.

(1) Back pressure means back flow caused by a pump, elevated tank, boiler, or other means that could create pressure within the system greater than the supply pressure.

(2) Back siphonage means a form of back flow due to a negative or subatmospheric pressure within a water system.

(D) Back flow prevention device, means a device to counteract back pressures or prevent back siphonage.

(E) Cross-connection means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain, contaminated water, sewage, or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a result of back flow. Bypass arrangements, jumper connections, removable sections, swivel or change-over devices, and other temporary or permanent devices through which, or because of which, back flow could occur are considered to be cross-connections.

(F) Double check valve assembly, means an assembly composed of two single, independently acting check valves, including tightly closing shutoff valves located at each end of the assembly and suitable connections for testing the watertightness of each check valve.

(G) Reduced pressure principle back flow prevention device means a device incorporating two or more check valves and an automatically operating differential relief valve located between the two checks, two shutoff valves, and equipped with necessary appurtenances for testing. The device shall operate to maintain the pressure in the zone between the two check valves, less than the pressure on the public water supply side of the device. At cessation of normal flow, the pressure between the check valves shall be less than the supply pressure. In case of leakage of either check valve the differential relief valve shall operate to maintain this reduced pressure by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less the relief valve shall open to the atmosphere thereby providing an air-gap in the device.

Section 6: Cross-Connections prohibited.

(A) Except as provided in Section 7, all cross-connections as above defined, whether or not such cross-connections are
controlled by automatic devices, such as check valves or by hand-operated mechanisms such as a gate valve or stop cocks, are prohibited.

(B) Failure on the part of persons, firms, or corporations to discontinue the use of any and all cross-connections and to physically separate such cross-connections will be sufficient cause for the discontinuance of the public water service to the premises on which the cross-connection exists.

(C) The Utilities Superintendent shall, in cooperation with the health officer or the local plumbing inspector, make periodic inspections of premises served by the water supply to check for the presence of cross-connections. Any cross-connections found in such inspection shall be ordered removed by the responsible agency or authority. If an immediate hazard to health is caused by the cross-connection, water service to the premises shall be discontinued until it is verified that the cross-connection has been removed.

Section 7: Use of Back flow Prevention Devices.

(A) Back flow prevention devices shall be installed at the service connection or within any premises wherein the judgment of the Utilities Superintendent, the nature and extent of the activities on the premises, or the materials used in connection with the activities, or materials stored on the premises would present an immediate and dangerous hazard to health should a cross-connection occur, even though such cross-connection does not exist at the time the back flow prevention device is required to be installed. This shall include but not be limited to the following situations:

(1) Premises having an auxiliary water supply, unless the quality of the auxiliary supply is in compliance with the rules and regulations of the State Board of Health.

(2) Premises having internal cross-connections that are not correctible, or intricate plumbing arrangements which make it impracticable to ascertain whether or not cross-connections exist.

(3) Premises where entry is restricted so that inspections for cross-connections cannot be made with sufficient frequency or at sufficiently short notice to assure that cross-connections do not exist.

(4) Premises having a repeated history of cross-connections being established or re-established.

(5) Premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross-connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters.

(6) Premises where materials of a toxic or hazardous nature are handled such that if back siphonage should occur, a serious health hazard may result.

(7) The following types of facilities will fall into one of the above categories where a back flow prevention
device shall be installed at these facilities as set forth herein unless the Utilities Superintendent determines no hazard exists.

(a) Hospitals, mortuaries, clinics;
(b) Laboratories;
(c) Piers and docks;
(d) Sewage treatment plants;
(e) Food or beverage processing plants;
(f) Chemical plants using a water process;
(g) Metal plating industries;
(h) Petroleum processing or storage plants;
(i) Radioactive material processing plants or nuclear reactors;
(j) Others specified by the Secretary of the Department of Social and Health Services.

(B) The type of protective device required herein shall depend on the degree of hazard which exists as follows:

(1) An air-gap separation or a reduced pressure principle back flow prevention device shall be installed where the water supply may be contaminated with sewage, industrial waste of a toxic nature or other contaminant which would cause a health or system hazard.

(2) In the case of a substance which may be objectionable but not hazardous to health, a double check valve assembly, air-gap separation or a reduced pressure principle back flow prevention device shall be installed.

(C) Back flow prevention devices required in this section shall be installed at the property line of the premises or at the meter when meters are used or at a location designated by the Secretary of the Department of Social and Health Services or the Utilities Superintendent of the city.

(D) Back flow prevention devices required in this section shall be installed under the supervision of, and with the approval, of the city.

(E) Any protective device required in this section shall be a model approved by the Secretary of the Department of Social and Health Services. A double check valve assembly or a reduced pressure principle back flow prevention device will be approved if it has successfully passed performance tests of the University of Southern California Engineering Center or other testing laboratories satisfactory to the Secretary of the Department of Social and Health Services.

(F) Back flow prevention devices installed under this section shall be inspected and tested annually, or more often where successive inspections indicate repeated failure. The devices shall be repaired, overhauled, or replaced whenever they are
found to be defective. Inspections, tests and repairs and records thereof shall be done under the city's supervision.

Section 8: Failure of any customer or any district organization to cooperate in the installation, maintenance, testing or back flow prevention device or the requirements of an air-gap separation shall be grounds for the termination of the water services at a point where such flow, which is to be terminated by the City of North Bend, would best prevent possible contamination of the public water supply.

Section 9: This ordinance shall take effect on July 1, 1974, after adoption by the City Council and publication as required by law.

PASSED by the City Council of the City of North Bend, Washington, at its regular meeting on 14th day of June, 1974.

CITY OF NORTH BEND

[Signature]
MAYOR

ATTEST:

[Signature]
CITY CLERK

It is unlawful for any person to break, deface, or damage any water meters, gate, pipe, or other waterworks appliance or fixture, or in any other manner interfere with the proper operation in any part of the water system of the city, and anyone found violating any of these provisions, unless otherwise provided for, shall be guilty of a misdemeanor, and upon conviction thereof shall be punished as for other misdemeanors as provided by law.


Agents of the water department shall have access at all proper hours of the day to all parts of the buildings or premises in which water may be delivered from the city mains, for the purpose of inspecting the condition of the pipes and fixtures, and the manner in which the water is used. Upon refusal to permit such inspection, water service may be disconnected and shall not be reconnected until such inspection is permitted, and all delinquent water rates, together with the proper turn-on charges, have been paid. There shall be an inspection fee as established by the Taxes, Rates and Fees Schedule adopted by ordinance and a capital improvement charge for the meter size being used by the property owner for meter installations installed by non-city employees. See the Taxes, Rates and Fees Schedule for the capital improvement charge.

1 For statutory provisions regarding service rates for municipal water system, see RCW 35.92.010.
13.16.150 Interpretation and intent.

The regulations set out in this chapter are to be reasonably interpreted. It is their intent to recognize the varying degrees of hazard and to apply the principle that the degree of protection should be commensurate with the degree of hazard.

13.16.160 Conformance to rules and regulations.

Any customer, regardless of whether residing within or without the city limits, who is now receiving water from the city system or who will in the future receive water from the city, shall comply with the rules and regulations contained in this chapter.

13.16.170 Organizations – Conformance.

Any water district, municipal organization or other organization which is connected to the city water supply for water and/or which is furnished to people or members within said district or organization shall cause all the people or members within said district or organization, as well as the district or organization itself, to comply with the rules and regulations contained in this chapter.

13.16.180 Definitions.

As used in this chapter, unless the context states otherwise, the following definitions shall apply:

A. “Air gap separation” means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supply water to a tank, plumbing fixture, or other device and the flood level rim of the receptacle, and shall be at least double the diameter of supply pipe measured vertically above the flood level rim of the vessel. In no case shall the gap be less than one inch;

B. “Auxiliary supply” means any water source or system, other than the public water supply, that may be available in the building or premises;

C. “Backflow” means the flow other than the intended direction of flow, of any foreign liquids, gases, or substances into the distribution system of a public water supply;

D. “Backflow prevention device” means a device to counteract back pressures or prevent back siphonage;

E. “Back pressure” means backflow caused by a pump, elevated tank, boiler, or other means that could create pressure within the system greater than the supply pressure;
F. “Back siphonage” means a form of backflow due to a negative or subatmospheric pressure within a water system;

G. “Cross-connection” means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any other water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains or may contain contaminated water, sewage, or other waste or liquid of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a result of backflow. Bypass arrangements, jumper connections, removable sections, swivel or changeover devices, and other temporary or permanent devices through which, or because of which, backflow could occur;

H. “Customer” means any person, family, business, corporation, partnership or firm connected to the city water supply;

I. “Double check valve assembly” means an assembly composed of two single, independently acting check valves, including tightly closing shutoff valves located at each end of the assembly and suitable connections for testing the watertightness of each check valve;

J. “Reduced pressure principle backflow prevention device” means a device incorporating two or more check valves and an automatically operating differential relief valve located between the two checks, two shutoff valves, and equipped with necessary appurtenances for testing. The device shall operate to maintain the pressure in the zone between the two check valves, less than the pressure on the public water supply side of the device. At cessation of normal flow, the pressure between the check valves shall be less than the supply pressure. In case of leakage of either check valve, the differential relief valve shall operate to maintain this reduced pressure by discharging to the atmosphere. When the inlet pressure is two pounds per square inch or less, the relief valve shall open to the atmosphere, thereby providing an air gap in the device.


Except as provided in Section 13.16.220, all cross-connections as defined in Section 13.16.180G, whether or not such cross-connections are controlled by automatic devices such as check valves, or by hand-operated mechanisms such as a gate valve or stopcocks, are prohibited.

13.16.200 Cross-connection — Failure to discontinue.

Failure on the part of persons, firms, or corporations to discontinue the use of any and all cross-connections and to physically separate such cross-connections will be sufficient cause for the discontinuance of the public water service to the premises on which the cross-connection exists.


The utilities superintendent shall, in cooperation with the health officer or the local plumbing inspector, make periodic inspections of premises served by the water supply to check for the presence of cross-connections. Any cross-connections found in such inspection shall be ordered removed by the responsible agency or authority. If an immediate hazard to health is caused by
the cross-connection, water service to the premises shall be discontinued until it is verified that the cross-connection has been removed.


Backflow prevention devices shall be installed at the service connection or within any premises wherein the judgment of the utilities superintendent, the nature and extent of the activities on the premises, or the materials used in connection with the activities, or materials stored on the premises would present an immediate and dangerous hazard to health should a cross-connection occur, even though such cross-connection does not exist at the time the backflow prevention device is required to be installed. This shall include but not be limited to the following situations:

   A. Premises having an auxiliary water supply, unless the quality of the auxiliary supply is in compliance with the rules and regulations of the State Board of Health;

   B. Premises having internal cross-connections that are not correctable, or intricate plumbing arrangements which make it impracticable to ascertain whether or not cross-connections exist;

   C. Premises where entry is restricted so that inspections for cross-connections cannot be made with sufficient frequency or at sufficiently short notice to assure that cross-connections do not exist;

   D. Premises having a repeated history of cross-connections being established or reestablished;

   E. Premises on which any substance is handled under pressure so as to permit entry into the public water supply, or where a cross-connection could reasonably be expected to occur. This shall include the handling of process waters and cooling waters;

   F. Premises where materials of a toxic or hazardous nature are handled such that if back siphonage should occur, a serious health hazard may result;

   G. The following types of facilities will fall into one of the above categories where a backflow prevention device shall be installed at these facilities as set forth in this section unless the utilities superintendent determines no hazard exists:

       1. Hospitals, mortuaries, clinics,

       2. Laboratories,

       3. Piers and docks,

       4. Sewage treatment plants,

       5. Food or beverage processing plants,

       6. Chemical plants using a water process,

       7. Metal plating industries,
8. Petroleum processing or storage plants,
9. Radioactive material processing plants or nuclear reactors,
10. Others specified by the Secretary of the Department of Social and Health Services.


The type of protective device required shall depend on the degree of hazard which exists as follows:

A. An air gap separation or a reduced pressure principle backflow prevention device shall be installed where the water supply may be contaminated with sewage, industrial waste of a toxic nature or other contaminant which would cause a health or system hazard;

B. In the case of a substance which may be objectionable but not hazardous to health, a double check valve assembly, air gap separation, or a reduced pressure principle backflow prevention device shall be installed.

13.16.240 Backflow prevention device – Location.

Backflow prevention devices required in this chapter shall be installed at the property line of the premises or at the meter when meters are used or at a location designated by the Secretary of the Department of Social and Health Services or the utilities superintendent of the city.


Backflow prevention devices required in this chapter shall be installed under the supervision of, and with the approval of the city.

13.16.260 Protective device – Approval required.

Any protective device required in this chapter shall be a model approved by the Secretary of the Department of Social and Health Services. A double check valve assembly or a reduced pressure principle backflow prevention device will be approved if it has successfully passed performance tests of the University of Southern California Engineering Center or other testing laboratories satisfactory to the Secretary of the Department of Social and Health Services.

13.16.270 Backflow prevention device – Inspections and tests.

Backflow prevention devices installed under this chapter shall be inspected and tested annually, or more often where successive inspections indicate repeated failure. The devices shall be repaired, overhauled, or replaced whenever they are found to be defective. Inspections, tests and repairs and records thereof shall be done under the city’s supervision. Charges for such inspections shall be as set forth in the Uniform Construction Administrative Code adopted by NBMC 15.02.010.

Ordinance 1622, Exhibit A
13.16.280 Failure to comply – Termination.

Failure of any customer or any district organization to cooperate in the installation, maintenance, testing of backflow prevention devices, or the requirements of an air gap separation, shall be grounds for the termination of the water services at a point where such flow, which is to be terminated by the city, would best prevent possible contamination of the public water supply.

Chapter 13.20
SEWER REGULATIONS

Sections:

13.20.005 Definitions.

13.20.010 King County regulations adopted.


13.20.030 Connection to public sewer – Owner’s cost and expense.

13.20.040 Connection to public sewer – Variance.

13.20.050 Private sewage disposal systems prohibited.

13.20.060 On-site sewage (septic) system requirements.

13.20.070 Abandonment upon connection to public sewer.

13.20.080 Sewer connection charge – Established.

13.20.090 Sewer connection charge – Applicability.

13.20.100 Sewer connection charge – Appeal.

13.20.110 Failure to connect to public sewer.

13.20.120 Permit required – Classes of sewer permits.

13.20.130 Separate sewer connection required.
Executive Summary

The Wellhead Protection Program in Washington State is designed to prevent contamination of drinking water. To achieve this objective, the state requires public water systems to develop their own site-specific Wellhead Protection Plan (WHPP). The Department of Health (DOH) has published guidelines for completing a Wellhead Protection Plan (DOH 2010). The WHPP plan presented here is an update to the City of North Bend’s (City) current WHPP (Gray & Osborne 2010).

Wellhead Protection Areas (WHPAs) were delineated for each of the City’s two current water sources (Centennial Well and Mount Si Springs), and two potential future water sources (Wells NB-1 and NB-2). The WHPAs were delineated using a combined approach that included groundwater flow model results to simulate capture zones and analytical methods recommended by the Environmental Protection Agency (EPA).

A contaminant source inventory (CSI) was completed for each WHPA to document the known contaminant sources that could warrant continued management and monitoring. The results showed various contaminant sources in the Centennial Well’s WHPA. The sites located closest to the well have been remediated and based on the assessment performed in this report do not appear to represent an immediate risk to the City’s water supply. However, based on the hydrogeologic setting and land-uses surrounding the well, there is a potential for groundwater contamination at the Centennial Well. There are septic drain fields in a residential development immediately up-gradient of the Centennial Well (within the 1-Year WHPA) that could represent a moderate to high risk to the Centennial Well and it is recommended that the City begin monitoring groundwater quality between the drain fields and the Centennial Well. Overall, the long-term risks to the Centennial Well can be mitigated through landowner communication and education, effective stormwater management, and monitoring. Given the susceptible source and geologic conditions, it is important for the City to continue to implement thoughtful land-use policies and demonstrate continued vigilance in managing stormwater.

The potential risk to the Mount Si Springs water supply is much lower. The area within the WHPA is generally undeveloped and protected from future development. The only land-use in the vicinity of Mount Si Springs that could adversely affect water quality is related to septic drain fields, but the potential for contamination is low.

The City’s future water sources, Wells NB-1 and NB-2, are located in similar settings as the Centennial Well. The potential wellhead protection issues identified for the Centennial Well also apply to Wells NB-1 and NB-2.
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1.0 INTRODUCTION

Maintaining high quality drinking water focuses on preventing contaminants from reaching the drinking water sources. The City of North Bend (City) relies on both surface water and groundwater sources for its domestic supply. To protect water supplies, the Environmental Protection Agency (EPA) and the Washington State Department of Health (DOH) require public water utilities to develop a Wellhead Protection Program (WHPP) as a component of its water system plan.

The purpose of a WHPP is to provide local utilities with a proactive program for preventing groundwater contamination. A successful wellhead protection program consists of several components which must be developed before the plan can be approved or fully implemented. The major components of the wellhead protection program are described below (DOH 2010).

- A completed susceptibility assessment.
- A delineated wellhead protection area for each well, well field, or spring with the 1-, 5- and 10-year time-of-travel boundaries marked.
- An inventory of potential contaminant sources in the wellhead protection area that could threaten the water-bearing zone (aquifer) used by the well, spring, or well field. Washington Administrative Code (WAC) 246-290-135 stipulates that this list should be updated every two years.
- Documentation showing the water system sent delineation and inventory findings to all owners and operators of known and potential sources of groundwater contamination within the Wellhead Protection Area (WHPA) boundaries as well as to regulatory agencies and local governments within the boundaries of the WHPA.
- Contingency plans for providing alternate drinking water sources and continuity of service if contamination does occur.
- Coordination with local emergency responders for appropriate spill or incident response measures. Documentation that the water system notified the local emergency responders of the WHPA boundaries, susceptibility assessment results, inventory findings, and a contingency plan.

The City’s current WHPP was prepared in 2010 and meets the requirements of the DOH and the EPA (Gray & Osborne 2010). The City is further developing the WHPP to better protect the City’s drinking water sources and financial investment in existing and future infrastructure.

1.1 City Water Sources

The City currently uses water from two sources: a spring water source (Mount Si Springs) under water right S1-00620C and a groundwater well (Centennial Well) under water right permit G1-26617(A). Mount Si Springs is located northeast of the City adjacent to the west side of Mount Si. Wellhead protection measures are required for both springs and wells that supply Group A public water systems (DOH 2010). The recharge area (i.e., the source area from which the water at the springs originates) for Mount Si Springs is mostly the west slope of Mount Si and is much different than the City’s groundwater source (as detailed in Section 3).

The City’s Centennial Well (also known as Well NB-3) is located within its Public Work Shops complex (Figure 1). The well is completed in a highly transmissive and relatively shallow, unconfined aquifer (Section 2.1). The well is 214 feet deep and screened from 153 to 203 feet below ground surface (bgs). Static groundwater levels in the vicinity of the Centennial Well range between approximately 10 to 20 bgs (Golder 2007a). Testing of the well
indicated sustained pumping rates of approximately 2,500 gallons per minute (gpm) are possible and the aquifer transmissivity was estimated at approximately 100,000 ft²/day (Golder 2011).

The City has two other future groundwater sources (NB-1 and NB-2) based on authorized points of withdrawal under water right permit G1-26617(A). Well NB-1 is located in Torguson Park, which is off of North Bend Way to the east of downtown North Bend. Well NB-1 is located near the Centennial Well (approximately ½ mile northwest) and completed in a similar portion of the shallow aquifer (221 feet deep and screened from 152 to 211 feet bgs). Well NB-2 is located off of Bendigo Boulevard, near Gardiner Weeks Park. Well NB-2 was drilled as a test well in 2004, and the results indicated relatively finer sediments (i.e., less transmissive conditions) than observed at NB-1 or the Centennial Well in the shallow aquifer in this vicinity. The City’s water current and permitted sources are shown in Figure 1.

2.0 PHYSICAL SETTING AND HYDROGEOLOGY

The City is located in the Upper Snoqualmie River basin, which is part of the Snohomish River Watershed (WRIA 7). WRIA 7 includes three major rivers: the Skykomish, the Snoqualmie, and the Snohomish. The Upper Snoqualmie River basin occupies a drainage area of approximately 375 square miles and includes all three forks of the Snoqualmie River (North, South and Middle) as well as the main stem above Snoqualmie Falls. Other surface water bodies in the upper Snoqualmie River Basin include springs, wetlands, and lakes. Discharge from known springs includes Mount Si Springs, which is located at the base of Mount Si and flows into the Middle Fork Snoqualmie River near the confluence with the North Fork. Groundwater in the Upper Snoqualmie River basin occurs primarily in unconsolidated alluvial/glacial deposits, as described below.

2.1 Snoqualmie Valley Aquifer

The hydrogeology of the Upper Snoqualmie Basin was summarized by Golder in a document prepared for the East King County Regional Water Association (EKCRWA) (Golder 2007b). Much of the sediment in the basin was deposited during the Vashon Stade of the Fraser Glaciation, which advanced to its maximum extent about 15,000 years before the present. Alpine glaciation also sculpted the landscape and deposited sediments, particularly during periods of the Pleistocene when continental glaciers were less prominent. Sediments were deposited in ice-dammed lakes (finer grained lacustrine deposits and coarser grained deltas), along the edges of glaciers (stream deposited embankments and ice-contact deposits) and beneath ice bodies (glacial till). In some cases, sediments were reworked during periods of glacial advance.

All three forks of the Snoqualmie River have aquifers that occupy the respective river valleys, referred to as “channel” aquifers (Golder 2007b). The South Fork and Middle Fork channel aquifers are relatively thick (200 to 400 feet), are typically unconfined, and are composed of moderate-to-high permeability sands and gravels. These two aquifers are included in what is termed the “shallow aquifer”, which is also present where the channel aquifers converge in the vicinity of the City. The shallow aquifer near the City is unconfined, highly productive, and exhibits significant hydraulic connection to adjacent reaches of the Snoqualmie River. The Snoqualmie River and its respective forks in the upper Snoqualmie basin generally gain water from groundwater. In parts of the basin, the shallow aquifer overlies a deep aquifer, which is separated by intervening till in places.

Hydrogeologic conditions in the main portion of the valley near the City show a thick sequence of coarse sand and gravel (shallow aquifer) that directly overlies fine-to-medium grained sand (deep aquifer) and silty clay (lacustrine deposits). The Centennial Well, the City’s current production well, is completed in the shallow aquifer.
The Snoqualmie Valley Aquifer is generally bounded by bedrock in all directions (except for small deposits of glacial and alluvial sediment that extend up the river valleys of the North, Middle and South Forks of the Snoqualmie). A surficial geologic map of the area is shown in Figure 2. The map shows that most of the lowland areas (or valleys) consist of unconsolidated glacial and alluvial deposits while the upland areas are largely bedrock. The lowland glacial deposits in the vicinity of the Centennial Well, NB-1, and NB-2 are largely mapped as alluvial deposits (Qa) and recessional outwash (Qvr), which generally consist of permeable sand and gravel deposits. Some portions of the valley areas are much lower permeability at ground surface, specifically areas mapped as glacial till (Qvt) or bedrock (e.g., TKwa).

Mount Si bounds the aquifer to the north and east of the City. Mount Si is the predominant landform in the area, with large bedrock exposures that begin near its base extend near vertically from the valley. The peak is approximately 3,500 feet above the valley floor. Mt Si Springs is located at the base of the western edge of Mt Si. Mt Si Springs represents a discharge point for water that drains the steep, western slope of Mt Si and infiltrates into a small deposit of alluvial/glacial and colluvial material at the base of Mt Si before discharging as surface water. Flow rates from Mt Si Springs vary seasonally but can range between approximately 2 to over 15 cubic feet per second (cfs; Golder 2020). Mount Si Springs has been a City water source since the 1960s.

### 2.2 Water Quality

Water quality can be impacted by a variety of contaminants that are a health concern for drinking water supplies. The contaminants can be broadly categorized into inorganic contaminants and organic contaminants.

- **Inorganic contaminants** include metals and nitrate. Metals can enter the groundwater system from erosion of natural deposits, discharge from industrial activities, or corrosion of water distribution systems. Nitrate can enter the groundwater system from erosion of natural deposits, runoff from fertilizer use, leaking septic tanks, or sewage.

- **Organic contaminants** include a variety of petroleum products such as gasoline, degreasing solvents, dry-cleaning solvents, and pesticides.
  - Volatile Organic Chemicals (VOCs) are organic chemicals (pesticides, herbicides and other chemicals) that are "readily vaporizable at a relatively low temperature." Some VOCs are products of industrialization and can enter the water supply through various means, such as leakage of storage tanks, spills, or illegal dumping of toxic wastes. Another concern is Disinfection By-Products like Total Trihalomethanes (TTHMs).
  - Synthetic Organic Compounds (SOCs) are chemicals synthesized from carbon and other elements such as hydrogen, nitrogen, or chlorine. These chemicals are manufactured to meet hundreds of needs in our daily lives, ranging from mothballs to hair sprays, from solvents to pesticides.
  - Per- and polyfluoroalkyl substances (PFAS) are a large group of man-made chemicals that have been manufactured and used in a variety of industries. Two PFAS compounds, perfluorooctane acid (PFOA) and perfluorooctanesulfonic acid (PFOS) have been used in fire-fighting foam solutions PFAS, which can migrate into groundwater supplies. There is evidence that exposure to PFAS can lead to adverse human health effects.

The City monitors water quality on a three-year cycle for volatile organic, inorganic and synthetic organic chemicals. The water quality monitoring program is detailed in the City's Water System Plan (Gray & Osborne
The City’s 2019 Water Quality Report provides a summary of results of water quality testing performed in 2017 and 2018 at Mt Si Springs and the Centennial Well (City of North Bend 2019). The results show that all 2017 and 2018 water quality results were below maximum contaminant levels (MCLs). Select results are summarized below:

- Water treatment is achieved by disinfection with chlorine, with disinfectant residuals in the 0.4 to 0.5 parts per million (ppm) range.
- The City is currently required to test six bacteriological samples per month for the presence of *Escherichia coli* (*E. Coli*) and fecal coliform. As of 2018, all samples have tested satisfactorily.

### Inorganics

- Nitrate (Nirate+Nitrite): Below detection limits (BD) and below 10 milligrams per liter (mg/L) MCL.
- Arsenic: 0.0084 mg/L (below 0.01 mg/L MCL).
- Iron: Below detection limits (BD) and below 0.03 mg/L MCL.
- Turbidity: 0.15 Nephelometric Turbidity Units (NTU) and below 1.0 NTU MCL.

### Volatile Organic Chemicals (VOCs)

Both of the VOCs listed below are types of disinfection byproducts that can result from chlorination.

- Trihalomethanes (TTHMs): 3.1 µg/L (below 80 µg/L MCL)
- HAA5\(^1\): <1 µg/L (below 60 µg/L MCL)

### Other Testing

Additional testing was performed by the City in 2017 and 2018 and reported in the 2019 water quality report (City of North Bend 2019) for other constituents of concern. This includes:

- Lead and Copper: A total of 24 samples were collected from within the system to determine lead and copper concentrations in tap water in North Bend. The results show:
  - Lead: maximum concentration measured was 0.0036 mg/L (below 0.015 mg/L federal action level).
  - Copper: maximum concentration measured was 0.17 mg/L (below 1.3 mg/L federal action level).
- Asbestos monitoring occurred in August 2017 and the sample results showed <0.111 million fibers per liter (MFL) (below 7.0 MFL MCL).
- Synthetic Organic Compounds (SOCs): SOCIs are man-made contaminants that include herbicides, pesticides, and other chemicals that come from agriculture, urban stormwater runoff, or industrial activities. The use of these synthetic organic compounds has greatly increased within the past 40 years and some can enter the groundwater. The City submitted samples for testing in September 2017 and results showed that no compounds were detected.

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\(^1\) HAA5 is a group of five haloacetic acids: dibromoacetic acid, dichloroacetic acid, monobromoacetic acid, monochloroacetic acid, and trichloroacetic acid.
These results and earlier testing show that groundwater in the City is a high-quality resource that should be protected. The potential transport of contaminants in the groundwater is complex and dependent on the properties of the specific contaminants. Many organic contaminants degrade or transform in the soil or groundwater. Some inorganic contaminants, or metals, preferentially adsorb to soil particles so they do not travel in the groundwater as readily. By identifying the contaminant, it is easier to plan, avoid, and respond to groundwater contamination.

3.0 WELLHEAD PROTECTION AREA DELINEATION

The first step in developing a WHPP is to identify the land area around each well from which groundwater may be flowing to the source. These areas are the most likely to contribute pollutants to the groundwater and are referred to as zones of contribution or capture zones. Capture zones require proper land-use management to minimize potential contaminants from entering the groundwater system. The WHPAs were delineated using a combination of numerical groundwater modeling and standardized analytical methods (Section 3.1).

The WHPAs are divided into zones based on the length of time it would take a particle of water to travel from the zone boundary to the well. The travel time represents the horizontal travel time from the boundary to the water source. This allows different management strategies to apply to each zone to prevent pollution and reduce risk from different types of contaminant threats. The zones in each WHPA area include a 1-year travel time zone (including a 6-month travel time zone), a 5-year travel time zone, and a 10-year travel time zone, per DOH guidance (DOH 2010). The WHPAs also include a sanitary control area and buffer zones to account for modeling or other uncertainties.

Each zone focuses on protecting the water source from specific types of contamination.

- **Sanitary Control Area:** This protective area is required by WAC 246-290-135 (sanitary control area). It is a radius around each source of one hundred feet for wells and a radius of two hundred feet for springs. This area should be tightly controlled to minimize any direct contamination at the wellhead.

- **Zone 1:** The 1-year travel time boundary, which is managed to protect the drinking water supply from viral, microbial, and direct chemical contamination. This zone also includes the 6-month travel time boundary which focuses on protection from viral and microbial contamination where loading may pose a higher risk to the drinking water supply such that a higher level of water treatment may be appropriate.

- **Zone 2:** The 5-year travel time boundary, which is managed to control potential chemical contaminants.

- **Zone 3:** The 10-year travel time boundary, which is managed to control potential high- and medium-risk contaminant sources.

- **Buffer Zone:** The buffer zone, if necessary, is an additional area sloping up from Zone 3. It may include the entire zone of contribution or may focus on selected areas of concern such as recharge areas or locations where the aquifer may be exposed at the surface. A primary goal of the buffer zone is to provide information to planners on activities or facilities outside Zone 3 that could release contaminants into the wellhead protection area.

DOH’s Wellhead Protection guidance document acknowledges that a number of methods can be used to delineate WHPAs, including calculated fixed radius, analytical models, hydrogeologic mapping, and numerical flow/transport models (DOH 2010). The calculated fixed radius method was developed by the EPA and uses circular protection areas for specified time-of-travel thresholds using a simple volumetric flow equation to calculate...
the radii. Analytical methods include simple calculations, graphical methods, or simple analytical solution-based models to delineate wellhead protection zones. Hydrogeological mapping methods may include geologic mapping, geophysical mapping and dye tracing. Numerical flow/transport models are considered the most robust method and include two- and/or three-dimensional computer models that numerically approximate groundwater flow and solute transport equations to delineate wellhead protection areas.

3.1 Analysis

The WHPAs for the Centennial Well and NB-1 and NB-2 were delineated using a combination of the calculated fixed radius (CFR) method and numeric groundwater flow modeling (Section 3.1.1). The Mount Si Spring source is located outside the active area of the groundwater model. The Mount Si Springs WHPA was defined using a combination of analytical and graphical methods (Section 3.1.2).

3.1.1 Centennial Well, NB-1 and NB-2

The EKCRWA funded development of a regional groundwater model for the upper Snoqualmie River Valley (Golder 2007b). The Centennial Well is located within the scope of the EKCRWA groundwater model, so the model was used to delineate the capture zones for the Centennial Well. Well NB-1 and Well NB-2, the potential future points of withdrawal under water right permit G1-26617(A), are also located within the scope of the EKCRWA groundwater model, so the model was used to delineate the capture zones for those wells. To account for uncertainty in the model results and to provide conservative WHPAs, the EPA’s CFR method was also used to delineate the WHPAs. The CFR method was added to the modeled delineations for consistency with past methods and to provide additional protections given the nature of the aquifer. The final WHPAs were completed by overlaying the CFR results onto the capture zones generated from groundwater flow and transport model. This approach was selected to be conservative and protective of the resource because the potential for contamination is high due to the shallow groundwater source and unconfined and highly transmissive aquifer. The well completion details and assumptions used for each delineation method are summarized in Table 1.

<table>
<thead>
<tr>
<th>Table 1: City Well Completion Details and Model Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
</tr>
<tr>
<td>Well Depth (ft)</td>
</tr>
<tr>
<td>Screen Interval (ft bgs)</td>
</tr>
<tr>
<td>Well Diameter (inch)</td>
</tr>
<tr>
<td>Assumed Pumping Rate for Modeled Capture Zone Analyses</td>
</tr>
<tr>
<td>Assumed Pumping Rate for CFR Analyses</td>
</tr>
</tbody>
</table>

Note: Well NB-2 was installed as a test well, production well not yet installed at this location.
3.1.1.1 **Groundwater Model Capture Zones**

The EKCRWA groundwater model was constructed in 2007 using MODFLOW 2000 (McDonald and Harbaugh 1988). The model was recalibrated using results from the aquifer test performed at the Centennial Well (NB-3) in September 2010 (Golder 2010). Model calibration included varying hydraulic properties (hydraulic conductivity (K) and storage parameters). The model was calibrated to measured water levels and drawdown at monitoring wells near the Centennial Well (TW-6, GEI-6, Randall-Well, RH2-MW2 and the Tree Farm Well) during the pumping tests conducted at the Centennial Well from September 13 to 16, 2010 (Golder 2010). The model achieved a good fit between simulated and measured groundwater elevations and drawdown. The calibrated conductivity field was also consistent with the hydraulic test results.

In order to improve model resolution and more accurately define the capture zones, the model grid spacing was adjusted in the vicinity of the City wells. The size of the groundwater model cells was refined from 400 feet by 400 feet to about 50 feet by 50 feet for an area about 1,000 feet wide and 1,000 feet long centered on each well location. A maximum grid change ratio of 1.5 was used in order to gradually adjust the size of the grid cells away from the cells containing the wells.

The updated version of the EKCRWA model was used to simulate maximum instantaneous pumping rate (2,646 gpm) allowed under water right permit G1-26617(A) at wells NB-1, NB-2 and the Centennial Well (NB-3). The maximum instantaneous pumping rate was allocated to each well individually and the model was run. While assuming the maximum instantaneous pumping rate is conservative for indicating the WHP, this approach was selected because it provides the best understanding of potential source water to each groundwater well.

Capture zones for the City wells were delineated using the particle tracking software MODPATH version 5.0 (Pollock 1994) in Groundwater Vistas version 7.24 (ESI 2017). MODPATH uses a particle tracking scheme that allows an analytical expression of the particle’s flow to be obtained within each grid cell. Particle paths are computed by tracking from one cell to the next until the particles reach a boundary, an internal sink/source, or a pre-defined termination criterion is satisfied (Pollock 1994). In order to define groundwater flow paths in proximity of the City’s wells a combination of reverse and forward particle tracking analysis was used:

- For reverse particle tracking: a total of 100 particles were placed in the revised model in concentric circles around each well. The particles were tracked backward, and time of travel markers were placed along the particle paths indicating the six-months, one-year, five-year, and ten-year time-of-travel zones.

- For forward particle tracking: one particle was placed in each cell located up-gradient of the wells. Particles were placed in all model layers. The particles were tracked forward and the particle paths terminating at the well locations were used to define the capture zone of the wells. The capture zones identified using the forward tracking method were generally very similar to those identified using the backward method. The capture zones identified using the forward tracking method were used to verify and modify, where needed, the capture zones delineated during the backward analysis.

The WHPAs were delineated from the capture zones by creating polygons around the particle tracks, with some minor modifications and buffer zones added to account for uncertainties in the numerical simulations.

3.1.1.2 **Fixed Radius Calculations**

The EPA’s CFR method was also used to delineate the WHPAs for the Centennial Well, NB-1 and NB-2. The CFR method incorporates porosity, pumping rate, and well screen length to estimate a radial distance for
6-month, 1-year, 5-year, and 10-year groundwater travel times (DOH 2010). The parameters used in the CFR calculations are as follows:

- Pumping Rate of 3,094 acre-feet (AF) per year, which represents the maximum annual withdrawal allotted under G1-26617(A)P.
- Porosity of 0.22, based on EPA guidance and professional judgment.
- Well Screen Lengths of 50 feet for the Centennial Well and 59 feet for NB-1 (constructed screen intervals) and 50 feet for NB-2 (assumed screen length same as NB-3 because production well has not been installed at this location).

### 3.1.1.3 Final Wellhead Protection Areas

The groundwater model and CFR results were merged using standardized procedures in ESRI’s ArcGIS version 10.4.1. The final WHPAs for the Centennial Well, NB-1 and NB-2 are provided in Figures 3, 4, and 5, respectively. The CFR results extend in concentric circles around each wellhead. The WHPA boundaries from the groundwater model extend up-gradient in a more “tail-like” manner to represent the modeled well capture zones (recharge areas) for each time interval. Because the WPHAs overlap in some areas, particularly for the Centennial Well and NB-1, the WHPAs sources were combined in Figure 6. Figure 6 presents the combined WHPAs for areas inside the City limits. The WHPA for Mount Si Springs is located outside of the City limits and does not overlap with the other WHPAs (Figure 7).

### 3.1.2 Mount Si Springs

The Mount Si Springs capture zone is defined as the area required to produce sufficient groundwater recharge to account for the discharge rate of the spring. The original Mount Si spring capture zone, from the City’s 2010 Water System Plan (Gray & Osborne 2010), covered 26 acres and it was assumed to be shaped like a funnel extending up the slope from the springs. The capture zone has been revised for this report, based on the hydrogeological and geomorphological conditions of the upland area surrounding the spring, in order to more fully cover the spring’s drainage basin.

The spring capture zone was delineated using a contributing area approach combined with fixed-radius methods. This approach consists of first delineating the sanitary control area (200-foot radius per WAC 246-290-135) and then delineating a larger circular area around the spring pond using the CFR method (EPA 1987). The capture zone area was extended to the upland area surrounding the spring. The upslope capture area boundary was outlined taking into account topographic and geomorphological settings of the area, including surface fracture traces that likely indicate zones of higher permeability, and surface drainage patterns (Figure 7).

### 3.2 Land-Use

The City’s groundwater wells (Centennial Well, NB-1 and NB-2) are located in relatively close proximity to the City’s downtown area and land-use in the immediate vicinity of the well locations is a mix of residential and commercial designations. Mount Si Springs is located further north and adjacent to low-density residential and undeveloped land. The City’s land-use zoning designations (as of 2018) and boundaries are shown in Figure 8. The WHPAs extend outside of City limits and into unincorporated King County. King County zoning districts are shown for the areas outside of City limits and urban growth areas. Most areas outside of City Limits are rural and generally consist of rural to low-density residential land and open space. Residences outside of City Limits and in low-density areas may have septic drain fields. Where possible, similar source protection strategies will be
utilized for the portions of the WHPAs that are part of unincorporated King County. This may include landowner communication with residences that have septic drain fields (Section 6.3). A description of the land-uses within the vicinity of each water source and wellhead protection area are provided below.

3.2.1 Centennial Well (NB-3)

The Centennial Well is located at the City’s Public Works complex (Figure 3). The sanitary control area (100-foot radius) is mostly within City property, with a small portion of the southern edge of the control area extends into the public right of way adjacent to Cedar Falls Way. Adjacent and nearby properties along North Bend Way are primarily designated residential or neighborhood businesses. Further east/southeast (along North Bend Way) the designated land-uses include industrial areas, low-density domestic, and commercial land. The 10-Year capture zone boundary for Centennial Well ends in the vicinity of the “truck stop” and adjacent businesses north of Interstate 90 at Exit 34. The area to the north of North Bend Way and further north (i.e., north of the Middle Fork Snoqualmie River) is mostly outside of City limits and the land-uses are predominantly open space and rural domestic. The area south of the Centennial Well is primarily low-density residential or open space.

3.2.2 Mount Si Springs

Mount Si Springs is located in the northern portion of the City in an area that is primarily zoned as rural and open space. The City owns two parcels that cover approximately 90- acres and encompass the springs and the immediate up-gradient areas. The areas further up-gradient (to the south and east) is undeveloped public open space, owned by either the Department of Natural Resources (Mount Si Natural Resources Conservation Area) or the United States Forest Service. There are adjacent domestic residences to the north and west that are included in the WHPA. The other domestic residences in the area are inferred to be either down-gradient or cross-gradient of the springs. These residences are presumed to have septic drain fields.

3.2.3 NB-1

Well NB-1 is located in Torguson Park, which is a designated open space (Figure 4). To the north of the park is the Snoqualmie Valley Trail right-of-way (ROW) and further north is a mix of domestic properties, undeveloped land and farmland. Some of these properties are on septic systems. The 1-year WHPA includes businesses along North Bend Way and the western edge of the 1-year capture zone includes portions of the Downtown Commercial zone. The US Forest Service buildings and Ranger Station on North Bend Way is designated as a Neighborhood Business and also lies within the 1-year capture zone. The larger wellhead protection areas for NB-1 (5-year and 10-year) are similar to the Centennial Well WHPAs.

3.2.4 NB-2

Well NB-2 is located in Gardiner Weeks Park adjacent to the west of North Bend Way (Figure 5). The well is on an approximate 3-acre undeveloped parcel owned by the City and designated as POSPF (Parks, Open Space, and Public Facilities). The eastern edge of the 100-foot sanitary control area extends into the North Bend Way right-of-way. The land to the east of the North Bend Way is also part of Gardiner Weeks Park and is designated as POSPF. The City’s downtown corridor is adjacent to the north and east of Gardiner Weeks Park and is designated mostly as either High-Density Residential or Downtown Commercial. The South Fork Snoqualmie River is adjacent to the southwest of Gardiner Weeks Park. The land further south and west is designated as Employment Park (Nintendo Campus) and mixed-use (residential and commercial). The 1-year WHPA for NB-2 includes most of the Downtown Commercial zone.
4.0 RISK ASSESSMENT

The purpose of the risk assessment is to assess the vulnerability and risk of drinking water sources to potential impacts. This evaluation starts with a susceptibility assessment of the water source to determine the susceptibility of the water source to contaminants discharged at the surface. This assessment is then expanded geographically through an inventory of potential contaminant sources in the wellhead protection area to identify past, present and proposed activities that could threaten the water-bearing zone (aquifer) used by the well, spring, or well field. These assessments should be updated every two years. Information gathered through the inventory process can be used to evaluate risks posed to the wellhead protection area, and to prioritize actions and management efforts directed towards high priority sources.

4.1 Susceptibility Assessment

Susceptibility assessments for the City’s sources have been completed and submitted to the Department of Health and copies are included in Appendix A. Susceptibility assessments are an important initial step in selecting appropriate delineation methods to define the wellhead protection area boundaries. Drinking water supplies vary as to their susceptibility to contaminants discharged at the surface. Poorly constructed wells have an increased susceptibility. In addition, sources located in an unconfined aquifer with no confining layer (layer of low permeability) between the aquifer and surface have a much higher susceptibility. Drawing water from confined aquifers deep below the ground surface provides the best source of protection.

The Department of Health has given both Mount Si Springs and the Centennial Well a high susceptibility rating. The Centennial Well is particularly susceptible to potential contamination because the well is located near residential and commercial developments and is completed in an unconfined aquifer with a relatively shallow water table. Based on the location and aquifer encountered at Wells NB-1 and NB-2, it is anticipated that these wells will have a similar susceptibility rating.

4.2 Contaminant Source Inventory

An essential element of source protection is an inventory of all potential sources of groundwater contamination in and around the delineated protection areas. The purpose of the inventory is to identify past, present, and proposed activities that may pose a threat to the source or surrounding area. The inventory can also help to plan management strategies and establish a mailing list of businesses located within the source protection areas.

The inventory of potential contaminant sources was compiled by Environmental Data Resources, Inc. (EDR), an environmental database research company. EDR reports provide listings from federal, state, and third-party environmental databases for any known or potential contaminant sites within the WHPAs. The EDR Report provided results from a total of 34 databases, which EDR categorizes as either: “Standard Environmental Records”, “Additional Environmental Records”, and “EDR Historical Records”. Many listed sites appear in one or more databases. The complete EDR Report is provided in Appendix B (electronic only). Some of the mapped EDR locations were modified based on known locations or using the property address and/or business names provided in the databases.

The contaminant source inventory (CSI) presented herein utilizes the listings in EDR’s “Standard Environmental Records” databases (9 databases). Additionally, two databases from those listed as “Additional Environmental Records” by EDR were also included in the CSI because they were determined to be particularly applicable to the City’s WHPP. Details are provided in Table 2 (inset below).
Sites that are listed in the EDR databases described above and are located in the mapped WHPAs are shown in Figures 9, 10, and 11 for the Centennial Well, NB-1 and NB-2, respectively. No listed sites were identified in the Mount Si Springs WHPA. The sites are summarized in Table 3 (attached). Table 3 includes the WHPA that each of the sites are located in, along with the land-use designation for each site and a hazard rating. The hazard rating was developed subjectively based on the database type and the WHPA listing, as detailed in Table 2. Some of the ratings shown in Table 3 were adjusted based on the details provided in the EDR reports (for example, if documentation shows a UST was removed without evidence of contamination or if the site is issued a No Further Action status). Site-specific hazard rating modifications are noted in Table 3.

Table 2: Description of Environmental Databases and Hazard Rating System

<table>
<thead>
<tr>
<th>EDR Database Category</th>
<th>EDR Database</th>
<th>Database Description</th>
<th>WHPA Hazard Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>CSCSL</td>
<td>State Confirmed and Suspected Contaminated Sites List</td>
<td>6-Month</td>
</tr>
<tr>
<td>Standard</td>
<td>LUST</td>
<td>State Leaking Underground Storage Tanks Site</td>
<td>High</td>
</tr>
<tr>
<td>Standard</td>
<td>ERNS</td>
<td>Federal Emergency Response Notification System</td>
<td>Moderate</td>
</tr>
<tr>
<td>Standard</td>
<td>HSL</td>
<td>State Hazardous Sites List</td>
<td>High</td>
</tr>
<tr>
<td>Standard</td>
<td>ICR</td>
<td>State Independent Cleanup Reports</td>
<td>High</td>
</tr>
<tr>
<td>Standard</td>
<td>RCRA-VSQG</td>
<td>Federal RCRA generators List</td>
<td>Moderate</td>
</tr>
<tr>
<td>Standard</td>
<td>SWF/LF</td>
<td>State Solid Waste Facility Database</td>
<td>Moderate</td>
</tr>
<tr>
<td>Standard</td>
<td>UST</td>
<td>State Underground Storage Tanks Site</td>
<td>Moderate</td>
</tr>
<tr>
<td>Standard</td>
<td>VCP</td>
<td>State Voluntary Cleanup Program Site</td>
<td>High</td>
</tr>
<tr>
<td>Additional</td>
<td>SPILLS</td>
<td>State Emergency Release Reports</td>
<td>High</td>
</tr>
<tr>
<td>Additional</td>
<td>UIC</td>
<td>State Underground Injection Wells Listing</td>
<td>Moderate</td>
</tr>
</tbody>
</table>
The WHPAs were also overlain with the sewer system map, flood maps, and transportation network to identify additional sources of potential contamination. A sub-set of the sites listed in the EDR report were reviewed during a field survey. Businesses and other private properties were inspected only from public right of ways. Building interiors were not inspected. The exception is the property and shop building at the City’s Public Works facilities, which is located near the Centennial Well.

Visual observations indicated that most of the properties were kept relatively clean and there was little evidence of large environmental concerns. However, leaks and spills could potentially infiltrate into the shallow aquifer. Also observed during the windshield surveys was a general lack of any secondary containment controls at any of the properties, including the City’s Public Works shop. The need for secondary containment should be included in the notifications that City should send to businesses and residences inside designated wellhead protection areas (Section 6.3).

4.2.1 Centennial Well (NB-3)

The Centennial Well is located on the City’s Public Works property. The Public Works shop area is outside of the Well’s sanitary control area. The known contaminated sources within the Centennial Well WHPA is shown in Figure 9 and detailed in Table 3. The public works property itself is listed in the FINDS (Facility Index System), ECHO (Enforcement & Compliance History Information), and RCRA NLG (Federal RCRA generators list, No Longer Required) databases. The property contains storage and service facilities associated with the City’s Public Works Department vehicles and equipment. Oil and diesel and various other chemicals are stored in the shop area.

There are several businesses across North Bend Way from the Public Works property within the 6-Month WHPA and the City Fire Station (constructed in 2013) is located approximately 1,000 feet northwest of the Centennial Well and also located within the 6-Month WHPA. The contaminant source inventory shows the following number of sites within each WHPA:

- 6-month travel time: 3 sites
- 1-Year WHPA: 3 sites (includes 6-month travel time)
- 5-Year WHPA: 35 sites (outside of the 1-Year WHPA)
- 10-Year WHPA: 0 sites (outside of the 1-Year and 5-Year WHPAs)

The sites inside the 6-month travel time of the Centennial Well include:

- North Bend Auto Parts (Now NAPA Auto Parts) at 1120 E North Bend Way is listed for RCRA-VSQG: (Very Small Quantity Generators). VSQGs generate 100 kilograms or less per month of hazardous waste. The site is 600 feet northwest of the Centennial Well. This site is suspected of soil contamination by petroleum products. A voluntary cleanup program was completed at this site in 2008 and as a result, it is considered to represent a low risk the Centennial Well.

- The Auto repair shop on 1130 E North Bend Way is listed for CSCSL, LUST, UST and VCP. The site is 500 feet northwest of the Centennial Well. According to the UST database, the underground tank(s) were removed from the property in 1998. This site was suspected of soil contamination by petroleum products but there was no documented groundwater contamination. A voluntary cleanup program was completed at this
site in 2008. Because the tanks were removed in the late 1990s and the site is part of the voluntary cleanup program, the hazard rating was reduced to moderate (Table 3).

- North Bend (USFS) Ranger Station on 42404 SE North Bend Way is listed in the UST database. The tank was removed as of 1996 and no reports of contamination were documented. As a result, the hazard rating was reduced to low (Table 3).

The northern, southern, and eastern extents of WHPA are mostly domestic property, a large portion of which is not part of the City’s sewer system and many of these properties likely use on-site septic systems.

### 4.2.2 Mount Si Springs

The WHPA for Mount Si Springs extends to the southeast and encompasses mainly City Property and State and Federal owned land that is undeveloped and presumably is protected from future development. None of the known contaminated sites listed in the EDR report lie within the Mount Si Springs WHPA. The WHPA also extends slightly to the north, east, and west of the springs and encompasses at least a portion of several domestic residences adjacent to the City’s property (Figure 7). These residences have septic systems and the migration of contaminants from septic drain fields into the WHPA is the only current concern for hazards at the Mount Si Springs site.

### 4.2.3 NB-1

Well NB-1 is located in Torguson Park, approximately 2,500 ft north-northwest of the Centennial Well. Torguson Park occupies the area adjacent to the wellhead. The NB-1 WHPAs extend further west than the Centennial Well’s and therefore captures more the downtown corridor. As a result, there are more known potential contaminant sources in the NB-1 WHPA. The contaminant source inventory for NB-1 is shown on Figure 10 and summarized in Table 3, and shows the following number of sites within each WHPA:

- 6-month travel time: 3 sites
- 1-Year WHPA: 11 sites (includes 6-month travel time)
- 5-Year WHPA: 36 sites (outside of the 1-Year WHPA)
- 10-Year WHPA: 0 sites (outside of the 1-Year and 5-Year WHPAs)

The sites inside the 6-month travel time of NB-1 include:

- A registered UIC injection well associated with the River Glen development on Picket Avenue. The site is described as infiltration trench with perforated pipe designed to infiltrate municipal stormwater. It was constructed in 2016. The exact location of the site is unknown, but it is estimated to be 700 feet northeast of NB-1.

- There was a reported spill (SPILLS database) on 209 Thrasher Avenue, which is approximately 200 feet south of NB-1. It was reported in 2002. No other details are available.

- The registered UST at the North Bend (USFS) Ranger Station on 42404 SE North Bend Way is also within the 6-month capture zone of NB-1. The tank has been removed (Section 4.2.1).

There is a lot of overlap between the NB-1 and the Centennial Well WHPAs. Most of the sites within the 5-Year and 10-Year WHPA for NB-1 are also within the Centennial Well WHPA. To the north of the park and NB-1 is the
Snoqualmie Valley Trail ROW and further north is a mix of domestic properties, undeveloped land and farmland. Some of these properties appear to be on septic systems.

4.2.4 NB-2
Well NB-2 is located off Bendigo Boulevard, near Gardiner Weeks Park. As described in Section 3.2.4, NB-2 is located near the downtown corridor and the 6-month and 1-year WHPA extend into the downtown commercial area. There are numerous businesses in this area, including current and former gas stations. The area within the NB-2 WHPA is the most developed of the four water withdrawal locations, and as a result, there are more listed sites within the NB-2 6-Month and 1-Year WHPA. The contaminant source inventory for NB-2 is shown on Figure 11 and summarized in Table 3, and shows the following number of sites within each WHPA:

- 6-month travel time: 12 sites
- 1-Year WHPA: 16 sites (includes 6-month travel time)
- 5-Year WHPA: 16 sites (outside of the 1-Year WHPA)
- 10-Year WHPA: 0 sites (outside of the 1-Year and 5-Year WHPAs)

The closest known contaminant sources are located along Bendigo Boulevard (also referred to as North Bend Boulevard) or along North Bend Way near the intersection with Bendigo Boulevard. These sites are within approximately 1,00 feet of the NB-2. The listings include multiple LUSTs and Confirmed and Suspected Contaminated Sites listings (CSCSL). Additional details are provided in Table 3.

The NB-2 WHPAs extend more southerly than the other WHPAs and the southern portion of the NB-2 WHPA is mainly low-density domestic area and open space. There are no known contaminant sources in the outlying area (i.e., 10-Year WHPA).

4.3 Vulnerability Assessment
Aquifer vulnerability considers both the susceptibility of the water sources and nearby land-use activities and contaminant sources that could potentially impact water quality. Mount Si Springs has a very low vulnerability because the wellhead protection area is on undeveloped land that extends up Mount Si (Section 3.1.2). The Centennial Well and the potential future groundwater sources (NB-1 and NB-2) are much more vulnerable given the hydrogeologic setting and various land-uses that occur within the WHPAs.

The Centennial Well, NB-1 and NB-2 are completed in the Snoqualmie Valley Aquifer, which is composed primarily of coarse-grained alluvial and glacial sands and gravels. The aquifer is unconfined and highly transmissive. The water table is relatively shallow and generally between 10 and 20 feet bgs. The alluvial and glacial sediments are present at ground surface, as shown on Figure 2, which allows for rapid infiltration and migration of potential contaminants to groundwater. An example of the potential vulnerability of the City’s groundwater supply: a Sallal Water Association drinking water supply well (Sallal Well #2) is located in the same aquifer system and has been challenged with pathogenic contamination derived from an unknown source; resulting in boil water orders. Sallal Well #2 is upgradient of the Centennial Well (and NB-1 and NB-2) and outside of the City’s WHPAs presented in Section 3.

The land-use activities that are considered as having the potential to contaminate the City’s groundwater sources are provided below.
4.3.1 Commercial and Industrial Activity
Areas of commercial and industrial land-use are located within the Centennial Well (and NB-1 and NB-2) wellhead protection boundaries. Businesses that may contribute contaminants to the groundwater include dry cleaners, gas stations and other businesses with fuel storage tanks, auto repair shops, metal plating facilities, asphalt and concrete facilities, and machine shops. Other industrial activities, including aggregate mining operations, are located inside the 5-year capture zone of the Centennial Well (Section 4.2.1). Wastes generated at these various businesses include substances such as petroleum products, solvents, surfactants, heavy metals, and other organic materials. These wastes can potentially enter the groundwater system through inadequate disposal practices or accidental spills.

There are numerous commercial and industrial activities inside the Centennial Well WHPA. Of note is the North Bend Fire Station that was completed in 2013 and is located approximately 1,000 feet west of the Centennial Well and is within the 6-Month travel time area. The Fire Station could house various chemicals and other potential contaminants. These may include fire-fighting foams that contain per- and polyfluoroalkyl substances, known as PFAS.

4.3.2 RCRA Generators
The siting and operation of facilities which treat, store, or dispose of hazardous waste are subject to the requirements of the Resource Conservation and Recovery Act (RCRA), subtitle C. In Washington State, the Department of Ecology (Ecology) regulates facilities which generate more than 220 pounds of hazardous waste per month under WAC 173-303, Dangerous Waste Regulations. The regulations are significant in that they establish a number of requirements for these facilities including surveillance and monitoring, record keeping, performance and design criteria, and siting and closure procedures. Ecology divides the facilities into three levels of hazardous waste accumulation: Level 1 facilities generate 2,200 pounds of waste per month or more; Level 2 facilities generate between 220 and 2,200 pounds per month; and Level 3 facilities generate less than 200 pounds. Level 3 generators are exempt from the regulations. All Level 1 and 2 facilities must initially file a report of activities with Ecology and update those activities annually. A summary of these activities is published by Ecology, thereby allowing water purveyors the opportunity to determine the types of activities present within WHPAs.

There are two sites within the City’s WPHAs that are listed as RCRA-VSQG: (Very Small Quantity Generators; Formerly Conditionally Exempt Small Quantity Generators):

- The North Bend NAPA Auto Parts Store on North Bend Way is within the 6-month travel time for the Centennial Well and the 1-Year WHPA for NB-1.
- The Safeway on Mt Si Blvd is within the 5-Year WHPA for NB-2.

4.3.3 Underground Storage Tanks
Underground storage tanks (USTs) and leaking underground storage tanks (LUSTs) can be a major threat to groundwater quality. Petroleum products which may contain impurities that are mobile in the groundwater system are the most commonly stored substances in USTs. The EPA estimates that 35 percent of all USTs may be leaking. The most common causes of leaks are structural failure, corrosion, improper fittings, and improper installation.
Ecology regulates underground storage tanks in Washington State under WAC 173-360. The regulations require that owners and operators of underground storage tanks comply with the following sections of the regulations:

- Notification, reporting, and record keeping
- Performance standards and operating closure requirements
- Registration and licensing
- Financial responsibility

Owners and operators of all existing nonexempt underground storage tanks must have a permit from Ecology. A valid permit is a requirement for delivery of regulated substances. The permit must be updated annually.

Underground storage tank inspections are performed by Ecology primarily through the information developed in the permitting process. Ecology maintains a file on all permitted USTs and all known LUSTs in Washington State. The file provides the site name and address, tank identification number, date of installation, size, tank status, and the substance stored at the site. There is a total of 8 known LUSTs and 13 registered USTs within the 6-month travel time and 1-year WHPAs for the Centennial Well, NB-1 and NB-2 (Table 3 and Figures 9 to 11).

Under the Model Toxics Control Act (MTCA, WAC 173-340), Ecology is responsible for ensuring that hazardous waste sites, including LUSTs, are properly remediated. Most of the USTs and LUSTs with the WHPAs have completed (or are currently completing) Ecology’s Voluntary Cleanup Program and therefore the hazard rating for some of these sites have been reduced (Table 3). One UST/LUST site of note is the auto repair facility across from the Public Works Complex on 1130 E North Bend Way (Section 4.2.1).

### 4.3.4 Septic Systems

King County is responsible for regulating and permitting residential and small commercial on-site sewage disposal systems within the county, excluding federal facilities. Contaminants associated with septic tank effluent include pathogenic organisms, toxic substances and various nitrogen compounds (such as ammonia and nitrate) that are highly soluble in water. Most septic drain fields discharge effluent to the unsaturated zone above unconfined aquifers, and other contaminants can percolate to the saturated zone and contaminate groundwater.

Pharmaceuticals, personal care products and other chemicals are also an increasing concern in wastewater recharged to drinking water aquifers although there should be a similar concern from septic systems that provide less treatment before effluent is discharged. This includes both residential units and commercial businesses with septic systems.

A properly designed septic system can provide reasonable protection to groundwater from contamination by pathogenic organisms. Nitrate and ammonia discharging from septic systems are generally small enough amounts and have adequate dilution in the groundwater aquifer not to present a problem. However, an improperly designed septic tank drain field in highly porous soils can allow pathogens to reach groundwater supplies unimpeded. Evidence of this type of septic system failure is not readily visible since drainage from these systems does not cause ponding or odor problems. Two practical ways to protect against this type of problem are to:

- Ensure that all new septic systems going into areas of excessively draining soils in the WHPAs are carefully designed and properly installed; and
Ensure that all water supply wells withdraw water from beneath a protective confining (low permeability) layer such as till. (This will not be possible for the existing City water sources.)

Relatively old septic systems, constructed under less stringent standards compared to those currently used, pose a higher contaminant risk to groundwater. Many of these older systems were constructed for entire neighborhoods and are in soils that drain adequately but may not provide sufficient treatment.

Another common threat from septic systems is from improper use. Septic systems are not designed for removing all chemicals. Solvents, fuels, waste oil, photo chemicals and a wide variety of other wastes pass through septic systems without any effective treatment before discharging to groundwater. High concentrations of solutions can be transmitted through low permeability geologic strata. The most effective approaches in a WHPA to reduce the amount of inappropriate materials being discharged into septic systems include public education, assistance with appropriate toxic waste disposal and enforcement authority over improper disposal.

A review of the City’s sewer connections, as provided by the City, suggests there are septic drain fields inside the wellhead protection areas. This includes septic drain fields at the residences in the La Forest Drive residential development, which is located approximately 1,500 feet southeast and up-gradient of the Centennial Well (shown on Figure 9). The development is within the Centennial Well’s 1-year WHPA (the northwestern portion of the development is within the 6-month WHPA). There are also septic drain fields at residential properties adjacent to Mount Si Springs. Recommendations regarding groundwater monitoring down-gradient of the La Forest Drive drain field and community education outreach to homeowners with on-site septic systems are provided in Section 6.3.

4.3.5 Accidental and Transportation Spills

Confirmed and suspected sites of contamination such as accidental spills or releases of contaminants can potentially impact groundwater supplies. Potential sources of spills and leaks can originate from underground storage tanks, accidents, and poor disposal practices. The City manages spills under the Comprehensive Emergency Response Plan (City of North Bend 2015), which details the steps and actions needed to respond to accidental spills (Section 5.1). Ecology is responsible for ensuring all hazardous waste sites are properly remediated under MTCA. The City’s spill response plan is described in Section 5.1.

Spills or leaks from vehicles and cargo are significant hazards and the major highways and arterials in the WHPA include Interstate 90 (I-90). Hazardous chemicals are transported daily on I-90. Inadvertent chemical spills or discharges through accidents can result in contamination to groundwater. Various chemicals may be transported on interstate or local highways within the North Bend area. For example, a tanker truck can carry as much as 10,000 gallons of hazardous substances. Historically, most transportation spills have been along the major highways and arterials. Emergency spills are reported to Ecology. This information is stored and is publicly available. The spills recorded with the City’s WHPAs is included in the Contaminant Source Inventory (Section 4.2 and Table 3). A total of 9 documented spills (SPILLS database) were reported within the 6-month and 1-year WHPAs (Table 3 and Figures 9 to 11).

4.3.6 Improperly Sealed or Secured Wells

Improperly sealed or secured wells can act as direct conduits for contaminants to reach groundwater. A list of wells within the zones of contribution is provided in Appendix C. The City should send a letter to these well owners notifying them of the possibility of contamination to the aquifer from which their water supply originates. Flush mount monitoring wells are potential pathways for contaminants because stormwater can accumulate in the...
sub-grade annulus surrounding the well, which can then leak into the well if the well cap is not properly secured. There is at least one flush mount monitoring well within approximately 400 feet of the Centennial Well on the Public Works property (formerly known as MW-6).

4.3.7 Confirmed or Suspected Contamination Sites

Sites with confirmed or suspected contamination are managed by Ecology under MTCA. Ecology requires an initial site investigation within 90 days of learning of a potentially contaminated site. If this investigation shows that remediation action is required, the site will appear on the Confirmed and Suspected Contaminated Sites Report (Section 4.2). Ecology has developed a numerical ranking system in order to guide Ecology’s use of cleanup resources. The rankings are determined based on the substance characteristics, the site characteristics, and the exposure potential. Once the remedial action has been completed, Ecology’s Toxics Cleanup Program determines if the site can be removed from the list.

A total of 5 sites are listed as confirmed or suspected sites of contamination (CSCSLS database) were reported within the 6-month and 1-year WHPAs. This includes the NAPA Auto Parts site within the Centennial Well’s 6-month WHPA (Section 4.2.1).

4.3.8 Stormwater

Stormwater is rain that runs off hard surfaces on developed land. Impervious surfaces such as rooftops, streets and parking lots generate stormwater which can then pick up and transport pollutants such as oil, pesticides, and household and animal wastes. Typically, stormwater quality is more impacted in industrial areas and high-density commercial and residential areas but less of a concern in lower density and rural areas. Untreated stormwater discharges have been identified as major sources of contamination to surface water throughout the state of Washington. Untreated stormwater also can contribute to contamination of groundwater in areas where surficial soils provide insufficient treatment for contaminants or where direct conduits to the aquifer occur.

The City has approval authority for the construction of stormwater systems within City limits. Treatment of stormwater and on-site infiltration of generated runoff is required for all development projects where practicable. Despite recent improvements in requirements related to stormwater treatment and management, challenges remain in how to address older stormwater systems and the continued creation of new impervious surfaces from increasing urban density. With respect to stormwater management, the City is most susceptible to potential groundwater contamination from untreated stormwater generated from commercial and high-density residential areas in the vicinity of the Centennial Well. The City’s stormwater conveyance infrastructure is shown in Figure 12. The figure shows that stormwater in the downtown corridor and high-traffic areas is conveyed into the City’s sewer system via pipeline. In less developed portions of the City (i.e., east of downtown), the conveyance infrastructures include unlined ditches and detention ponds, which allows stormwater to infiltrate. Other types of informal stormwater conveyance infrastructure, like ditches, may be present in portions of the WHPAs that are outside of City limits. There are several stormwater detention ponds within the Centennial Well’s 1-Year WHPA (Figure 12). Public Works personnel have indicated that the City has adopted the 2009 King County Stormwater Design Manual and requires all public and private construction projects in the City to follow it for temporary and permanent stormwater and erosion control (DeBerg 2020).

Stormwater Underground Injection Control (UIC) wells are used to reduce stormwater run-off but can, potentially, create a shortened pathway for groundwater contamination from stormwater. Ecology issued new guidance for UIC Wells as part of the 2019 revisions to the Stormwater Management Manual for Western Washington (Ecology 2019). The revisions include clarifications and restrictions on where UIC wells may be used to manage
stormwater. The minimum requirements included in the 2019 revisions that are applicable to wellhead protection include:

- UIC Wells are not permitted within sanitary control areas for drinking water sources (100-foot radius for wells and 200-foot radius for springs).
- Basic treatment to remove solids prior to discharge is required for UIC wells located in WHPAs for water sources with high-susceptibility ratings by DOH (i.e., applicable to both the Centennial Well and Mount Si Springs).
- All UIC owners must complete an assessment for UIC wells built before February 3, 2006 (if this has not already been completed).
- Treatment is required for all stormwater from pollutant generating surfaces.

There are 8 registered UIC wells located within the WHPAs, as shown in Figure 12 and summarized in Table 3. No UIC Wells are located within the 1-year WHPA for the Centennial Well and no UIC Wells are located within the Mount Si Springs WHPA. Additional details are provided below:

- There is a registered UIC well at the 76 Gas Station at 520 E North Bend Way, which is located within the 1-Year WHPA for NB-1 and the 5-Year WHPA for the Centennial Well and NB-2.
- There is a registered UIC well at the Chinook Lumber site at 436TH Ave SE and Cedar Falls Way, which is within the 5-Year WHPA for both the Centennial Well and NB-1.
- A UIC well on NE 3rd Street is registered to the City of North Bend (5-Year WHPA for the Centennial Well, 1-Year WHPA for NB-1, and 10-Year WHPA for NB-3). The City is planning to transfer the maintenance requirements of this facility to the River Glen Homeowners Association.
- All other registered UIC wells are associated with residential developments.

### 4.3.9 Flooding

Climatic and topographic conditions of the upper Snoqualmie River Valley create two distinct high-water periods each year: 1) snowmelt in the spring and summer and 2) heavy winter rainfall events that in higher elevation areas may occur as rain on snow. Rain on snow events create winter flooding with damaging high. Most of the major floods on the Snoqualmie River have occurred during the winter months (November through February).

The FEMA flood hazard delineation for City is shown in Figure 13. The map shows that on the east side of the City, most of the flood zones (i.e., areas within the 100-Year floodplain) are generally confined to Middle Fork and South Fork Snoqualmie River valleys, with the potential for some low-density residential areas in proximity to these rivers to be inundated during flooding. The Centennial Well and adjacent areas are outside of the mapped flood hazard areas.

Much larger areas of the eastern and northern portions of the City, including the entire downtown corridor, lie within the 100-year floodplain. The greatest risk from flooding with respect to wellhead protection is from floodwater picking contaminants from commercial and residential areas and infiltrating to groundwater. This could potentially include areas adjacent to NB-1 and NB-2. The Centennial Well has a lower risk because most of its WHPA is outside of flood zones, although portions of the North Bend Way to the northeast of the immediate area
around Mount Si Springs is part of a flood zone but adjacent and up-gradient areas are not considered flood hazard areas.

Another potential type of flood occurrence in the City (other than river flooding) can result from extremely high groundwater levels. The runoff generated from these events can exceed the conveyance capacity of manmade drainage systems. This typically occurs with moderate-to high-intensity storms that can last for several days or occur in succession over a period of weeks and are characterized as rainfall of 3 inches or more in a 24-hour period (Gray & Osborne 2012). This type of flooding generally occurs gradually but can result in widespread flooding along conveyance corridors like streets, streams, ditches, culvert systems, and storm drains.

Flooding hazards can impact WHPAs because flood water can carry and transport dirt, oil, animal waste, and lawn, farm and industrial chemicals. Potentially these contaminants can infiltrate into groundwater as floodwaters subside. Another concern is that improper well construction, or very high flood events can short circuit flood water into wells and wellheads.

4.3.10 Landfills

A landfill is a disposal facility in which solid waste is permanently placed. Minimum functional standards for solid waste hauling are regulated by Ecology under WAC 173-304. These regulations set siting and closure criteria, performance standards, and operating requirements for landfills. Abandoned and improperly maintained landfills and dump sites are often a major source of groundwater contamination. Leachate from landfills poses a threat to groundwater quality should it migrate to the water table. Ecology is responsible for mitigating dump site cleanup when potentially hazardous leachates are present. There are no active landfills within the WHPAs of the City’s sources.

4.3.11 Pesticide and Fertilizer Use

Fertilizers and pesticide use within the WHPAs may include pesticides applied by USDA-certified pesticide applicators (e.g., by landscape services) and homeowner use for yard maintenance and home pest control. The City may occasionally apply fertilizers and/or herbicides to the ballfields at Si View Park or Torguson Park (vicinity of NB-1). Fertilizers may also be applied to the lawns at the domestic residences and the small cemetery up-gradient of the NB-3. Fertilizers contain nitrogen in the form of ammonia or nitrate. Nitrate is highly mobile in groundwater, and fertilizer applications that exceed plant uptake can result in surplus nitrate migrating to and being transported in groundwater. Fertilizers typically contain other chemicals that could migrate to groundwater, including potassium, sulfate and phosphorus, but their impact on water quality is generally not at the same magnitude as the impact from nitrate.

Not all pesticides are mobile in groundwater, and not all pesticides are stable or persistent in the environment. Consequently, the potential for pesticides to migrate to groundwater, degrade or transform into other chemical compounds, or persist long enough to contaminate groundwater, varies between individual pesticides and classes of pesticides.

Fertilizer and pesticide use is regulated through State law (RCWs 15.54 and 17.21) and City Code (e.g., 14.04, 14.05 and 14.07). To date, there has been no evidence that fertilizer and/or pesticide applications have impacted water quality at the Centennial Well (Section 2.2). The potential risk of fertilizer and pesticide use by homeowners within WHPAs may be addressed through landowner communication and public education efforts (Section 6.3).
4.3.12 Cemeteries

The risk of groundwater contamination from cemeteries has not been widely studied in the United States but some research has shown increased levels of nutrients, bacteria and metals in groundwater that is associated with leachate from cemeteries (Brennan et al. 2018; Zychowski et al. 2015). The most significant impacts have been measured in wet, tropical climates or in areas where the water table is within 10 feet or less of ground surface. Neither condition is applicable to North Bend. There is a small cemetery, occupying approximately 2 acres, located on North Bend Way approximately 2,000 feet east (up-gradient) of the Centennial Well. Groundwater quality in the Centennial Well has been excellent to date (Section 2.2) and the potential for impact from the cemetery appears to be low. However, the cemetery should be evaluated as a potential source if increased concentrations of nutrients, metals, bacteria, or other applicable contaminants are measured at the Centennial Well in the future.

4.4 Summary of Risk Assessment

Both of the City’s current water supply sources, the Centennial Well and Mount Si Springs, have high susceptibility ratings by DOH. The Centennial Well is at a higher risk, with respect to wellhead protection, because the Centennial Well’s WHPAs encompass more developed areas (commercial and residential) than Mount Si Springs. Additionally, the Centennial Well is completed in a highly transmissive, unconfined aquifer with a shallow water table. High-permeability material at ground surface and in the shallow-subsurface can result in rapid infiltration and is a potential conduit for contaminants to groundwater.

There are existing, known contaminant sources within the Centennial Well WHPAs. Based on the qualitative rating system described in Section 4.2, the sources are inferred to represent a low to moderate hazard to the Centennial Well, although detailed, site-specific evaluations were not completed as part of this study. In some instances, the actual impacts to groundwater associated with these (or other) sites are unknown. The septic drain fields at the La Forest Drive development (Section 4.3.4) are within the Centennial Well’s 1-Year WHPA and could represent a moderate to high risk to the Centennial Well. There are also potential risks associated with untreated stormwater infiltration to groundwater. The risks associated with stormwater are being mitigated through the City’s stormwater management program, which complies with King County’s guidelines (Section 4.3.8).

The WHPA for Mount Si Springs is located in a mostly undeveloped area that is protected from future development. As a result, the risks associated with wellhead protection at Mount Si Springs are low.

The City’s future groundwater sources (NB-1 and NB-2) appear to have higher risks than the Centennial Well (or Mount Si Springs) because both sources are located closer to the more developed portions of the City and closer to known contaminant sources that are inferred to have moderate to high hazard ratings (Section 4.2).

5.0 RESPONSE PLANS

The City published a Comprehensive Emergency Response Plan (Plan) in December 2015. The Plan was submitted to the state and conforms to the State of Washington Emergency Plan and the National Incident Management System (City of North Bend 2015). The Plan provides the framework for coordination and full mobilization of internal and external resources and communication protocols. Portions of the plan are applicable to wellhead protection are summarized below.
5.1 Hazardous Materials and Spill Response
Hazardous materials response planning, or spill response planning, is detailed in Emergency Support Function (ESF) #10 (City of North Bend 2015). This ESF details the appropriate responses and recovery actions to prepare for, prevent, minimize, or mitigate a threat to public health, welfare, and the environment caused by an actual or potential release of oil or other hazardous substances, pollutants, or contaminants. Eastside Fire and Rescue (ESF&R) is listed as the lead agency for the coordination of activities within the City’s jurisdiction and for its facilities. Public Works is listed as a support agency and will assume command after the incident is stabilized and ESF&R is ready to transfer Command. Public Works will provide a critical role for evaluating the potential impacts to the City’s water supply, including:

- Identifying if the release of hazardous material has occurred in WHPAs, and/or proximity to enter sewers, drains, and waterways.
- Assessing the potential impact of the release and risk to the City’s water supply.

The WHPP can provide assistance for determining the types of spill response measures that may be necessary for the protection of drinking water sources. The City should develop specific response procedures for WHPAs to supplement the ESF with specific response procedures (Section 6.3).

5.2 Flooding
The City’s emergency response to flooding and other natural disasters is detailed in ESF #3: Public Works and Engineering (City of North Bend 2015). This ESF details the coordination and organization of capabilities and resources to support the City’s response to natural and human-made disasters. Public Works is the lead agency for this ESF. Potential impacts to wellheads and WHPAs due to flooding should be evaluated by Public Works on a case-by-case basis because the flood risks to the City’s current water source areas (Centennial Wells and Mount Si Springs) is relatively low.

5.3 Fire
The City’s emergency response to fire is detailed in ESF #4: Fire Services (City of North Bend 2015). This ESF is focused on emergency response to fire but it does recognize the importance, and potential environmental impacts related to hazardous substances. The City should be cognizant of the potential impacts of fire on groundwater quality in WHPAs, through the mobilization of contaminants and the potential impacts of some fire-fighting foams on water quality.

5.4 Contingency Planning
Contingency planning for water supply is part of the City’s Water System Plan (Gray & Osborne 2020). Contingency planning is an important component of a wellhead protection program. If one or both sources must be taken offline due to contamination, a contingency plan would provide immediate mitigation. A properly prepared and updated contingency plan helps ensure the water system, and local officials, are prepared to respond to emergency situations. Contingency planning also includes provision of alternative sources of drinking water. The following steps are necessary for the development of an effective contingency plan:

1) Identify maximum capacities of the existing system as to source, distribution system, and water rights restrictions. Assume loss of source and re-evaluate.

2) Identify existing or potential interties with other water systems.
The City’s two sources provide redundancy. Both the City’s spring and well source have sufficient instantaneous physical and water right capacity to supply the entire system during a temporary outage of the other source. The City currently also has an emergency intertie agreement with the Sallal Water Association to provide water in the event of an emergency (Gray & Osborne 2020).

6.0 WELLHEAD PROTECTION MEASURES

In Washington, land-use planning occurs at the local government level, so most of the responsibility for implementing wellhead protection lies with the City. Public water systems and the communities dependent on their water supplies have a strong interest in protecting the drinking water resource. This may be accomplished by strong educational programs, use of best management practices and other non-regulatory approaches.

In some settings, it may be necessary to adopt zoning ordinances or codes that limit activities around the water supply, set design or operating standards for facilities in the WHPA, or other regulatory approaches. Local officials with land-use authorities will select and implement the necessary steps to protect the community’s water supply. The DOH WHPP guidance document provides general guidelines for WHPAs, as follows:

- **Sanitary Control Area:** The Sanitary Control Area (SCA) is defined as a 100-foot radius from the well (or 200-foot radius from spring source) and is the protective area required by WAC 246-290-135. Public water systems should tightly control this area to minimize any direct contamination at the wellhead. It should be managed to reduce the possibility of surface flows reaching the wellhead and traveling down the casing. All public water systems are encouraged to have a well house or a fenced area around each wellhead. This helps protect individual wells from any direct introduction of contaminants.

- **Zone 1 serves as a buffer and identifies the area needing a quick response time.** Chemicals capable of contaminating groundwater must not be stored or used in Zone 1. A serious chemical release in Zone 1 may provide very limited time for a water system or community to identify the spill, implement emergency actions, and prevent the contamination from reaching the distribution system. Most management plans for Zone 1 include strong elements for the identification of potential contaminant sources and risk management.

- **Zone 2 should be actively managed to eliminate or reduce chemical contaminants.** A release in Zone 2 presents a less acute crisis than a release in Zone 1. All potential contaminant sources must be identified and controlled, with an emphasis on pollution prevention and risk reduction management. Many state and local agencies use the 1-and 5-year zones to prioritize their technical assistance or outreach programs and target their inspections and enforcement actions.

- **In Zone 3, high-risk operations and facilities must be identified, and steps must be taken to reduce contaminant loading.** A primary purpose of Zone 3 is to encourage decision makers and planners to recognize the long-term source of the drinking water supplying community water systems. This allows the community to plan and site future high risk and medium risk contamination sources outside WHPAs. Zone 3 is also an educational tool for industry, the public, and others to understand the source of their drinking water and how their actions may affect drinking water quality.

- **Buffer Zone:** A buffer zone may be used to provide information to planners on activities or facilities outside Zone 3 that could release contaminants into the WHPAs. Analysis may show the need for contingency plans to respond to uncontrolled surface discharges that may travel overland to enter a stream located in or adjacent to the WHPA. It may also identify other non-contiguous critical aquifer recharge areas requiring protection.
6.1 Ordinances and Land-Use Zoning
The City manages groundwater quality and quantity through the designation of Critical Aquifer Recharge Areas (CARAs) under City Code 14.07. The code defines CARAs as “areas with a critical recharging effect on aquifers used for potable water.” CARAs are areas where an aquifer that is a source of drinking water is vulnerable to contamination that would affect the potability of the water, as defined by WAC 365-190-030(3)."

Two categories of CARAs are defined in the code, as follows:

- Category I critical aquifer recharge areas include those areas designated as highly susceptible to groundwater contamination and that are located within a sole source aquifer or WHPA.
- Category II critical aquifer recharge areas include those mapped areas designated that:
  - Have a medium susceptibility to groundwater contamination and are located in a sole source aquifer or WHPA.
  - Are highly susceptible to groundwater contamination and are not located in a sole source aquifer or WHPA.

The following new uses or activities are not allowed in Category I and/or Category II critical aquifer recharge areas, as specified below:

- Hazardous liquid transmission pipelines (Category 1 only).
- Sand, gravel, and hard rock mining on land that is not zoned for mining (Category 1 only).
- Mining of any type below the groundwater table (Category 1 or 2).
- Processing, storage, and disposal of radioactive wastes (Category 1 or 2).
- Hydrocarbon extraction (unless part of an approved decommissioning plan) (Category 1 or 2).
- Commercial wood treatment facilities on permeable surfaces (Category 1 or 2).
- Wrecking yards (Category 1 or 2).
- Landfills for hazardous waste, municipal solid waste, or special waste, except Class A biosolids when applied pursuant to Ecology standards (Category 1 or 2).

The code also stipulates performance standards for hazardous substance storage, agriculture, sewage, golf courses, and commercial vehicle repair and servicing. Applicable state and federal regulations can be enforced as necessary to protect critical aquifer recharge areas.

Portions of the WHPAs that are located in unincorporated King County may be designated as CARAs by King County under King County Title Code 21A.24.312.

6.2 Recommended Groundwater Monitoring
The City currently monitors groundwater quality directly at the Centennial Well and Mount Si Springs. The water quality results have consistently shown that the City groundwater is of excellent quality. However, continued development in the City and potential impacts from contaminant sources may necessitate a more robust groundwater monitoring program, to include monitoring groundwater in monitoring wells at various locations within...
the WHPAs. The primary focus should be Centennial Well WHPA because up-gradient monitoring of Mount Si Springs is not feasible and NB-1 and NB-2 are not currently in use.

The highest priority is to begin monitoring groundwater quality down-gradient of the septic drain fields at the La Forest Drive development (Section 4.3.4). The drain fields are within the Centennial Well’s 1-Year WHPA and could represent a moderate to high risk to the Centennial Well. Monitoring is needed to identify if nitrates (or other contaminants) from the drain fields are infiltrating to groundwater and being transported towards the Centennial Well. It is recommended that the City install a new monitoring well between the drain fields and the Centennial Well for this purpose. The well could be located along the Cedar Falls Way right-of-way but the exact location and design of the monitoring well (i.e., depth and screen interval) should be determined based on the layout of the drain fields and site access constraints.

Additional monitoring in other portions of the Centennial Well’s WHPA may also be warranted. The City could utilize existing City-owned wells for wellhead protection water quality monitoring, including MW-6 (on Public Works property) and the test well on Tanner Road (TW-5). The City could potentially also utilize public/residential wells that were part of an earlier EKCRWA monitoring network but additional verification is needed to determine if these sites are accessible. Additional monitoring wells may be needed. The following is recommended for the monitoring program:

- Conduct the sampling semi-annually (twice per year) during the summer and winter months to coincide with seasonal high and low water conditions.
- Utilize field parameter and field test kit measurements to make screening level determinations and recommendations.
- After well locations and preliminary screening has been completed, develop a Sampling and Analysis Plan that details the well locations, analytical parameters, test methods, etc.
- Additionally, the City should collect a groundwater quality sample from the NB-1 and NB-2 wells in order to document current water quality conditions at these locations.

### 6.3 Other Recommendations

- The WHPAs presented in this report should be incorporated into the City’s Water System Plan. To continue to protect the valuable groundwater resource, the City should adopt the newly defined WHPAs and designate them as critical aquifer recharge areas under City Code 14.07. Areas within the 5-Year WHPA should be considered a Category 1 CARA and areas within the 10-year WHPA (but outside of the 5-Year WHPA) should be considered a Category 2 CARA. The City should enact these designations for the Centennial Well but could defer on the designations for the NB-1 and NB-2 WHPAs, depending on the planned future use of those withdrawal points. The entire WHPA for Mount Si Springs should be designated as a Category 1 CARA.
- Update the contaminant source inventory every two years, as stipulated in WAC 246-290-135.
- With the use of on-site sewage disposal systems within the WHPAs, the City should remain aware of nitrate levels and trends of increased nitrate levels over a period of time. Increasing nitrate levels could be an indication of source contamination. The City should communicate with landowners using septic systems within the WHPAs to document drain field location and provide information and education to landowners.
The City should engage in discussions with operators and owners of potential point and nonpoint source contaminants within the WHPAs to establish and apply best management practices to reduce the risk of impacting the source waters.

The City should inspect the maintenance shop area and applicable storage areas at the Public Works complex to ensure that all chemicals and hazardous materials are stored properly, and secondary containment devices are utilized. Similarly, the City should coordinate with the local businesses adjacent to the Public Works complex (Napa Auto Parts and adjacent auto repair shop on North Bend Way), as well as, the Fire Department and the Forest Service property on North Bend Way to ensure that similar protection measures are in place. The City should consider amending the CARA ordinance to require annual review/inspections at select locations within the WHPAs.

All commercial businesses, hazardous waste generators, and septic system owners should be notified of their presence within the City’s WHPA upon completion of this report and as the contaminant source inventories are updated. A copy of this letter and a list of recipients should be provided to comply with WA DOH requirements. An example notification letter is included in Appendix D.

The City should periodically conduct trend assessments of groundwater quality from the Centennial Well and Mount Si Springs (and other available sources with WHPAs) to identify any long-term changes in groundwater quality. Depending on results, further action may be warranted, including the development of a more extensive groundwater network with the WHPAs.

The City should periodically check the flush mount well monument of monitoring well (MW-6) located on the Public Works property for leakage to ensure that stormwater is not infiltrating into the well. A similar review could be performed on other flush mount monitoring wells identified within the Centennial Well WPHA.

Ensure that owners of the Registered UIC wells within the WHPAs are complying with the new UIC well regulations enacted in 2019 (Section 4.3.8), including verification that UIC maintenance and monitoring programs are in place. The City should consider amending the CARA ordinance to require UIC monitoring and maintenance documentation.

Regularly evaluate effectiveness of stormwater management within the Centennial Well WHPAs to ensure best-management practices are followed for stormwater.

The City should develop a list of procedures to follow in order to respond to potential transportation spills along Interstate 90 that occur within the WHPAs. These procedures would be used to supplement the City’s Comprehensive Emergency Response Plan.
7.0 REFERENCES


Gray & Osborne, Inc. (Gray & Osborne). 2010. City of North Bend, King County, WA Water System Plan. October 2010.


<table>
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<th>No.</th>
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<th>Address</th>
<th>Database(s)</th>
<th>Database Codes</th>
<th>DEPMA Designation</th>
<th>Land Use Designation</th>
<th>Hazard Rating</th>
<th>Note</th>
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<td>A2026</td>
<td>A2026</td>
<td>RESIDENCE 15</td>
<td>201 E 2ND ST</td>
<td>OR, LUST</td>
<td>L, E, H, L</td>
<td>5-Year</td>
<td>UR (Residential)</td>
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<td>Spills detected. Petroleum contamination, met NFA. Rating reduced to low.</td>
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<td>RESIDENCE 16</td>
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<td>A2028</td>
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<td>A2029</td>
<td>RESIDENCE 18</td>
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<td>5-Year</td>
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<td>A2032</td>
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Table 3A: Contaminant Source Inventory for Centennial Ward (NB-3)
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<tr>
<th>Facility Name</th>
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<th>Database Codes</th>
<th>WHPA Designation</th>
<th>Land Use Designation</th>
<th>Hazard Rating</th>
<th>Note</th>
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<tr>
<td>BORGER, Inc.</td>
<td>500 MAIN AVE S.</td>
<td>CSCSL, UST, LUST</td>
<td>5-Year</td>
<td>RCRA-VSQG</td>
<td>H, L</td>
<td>UST has been removed, voluntary cleanup program initiated. Rating reduced to low.</td>
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<tr>
<td>CITY OF NORTH BEND</td>
<td>NE 3RD ST</td>
<td>UST</td>
<td>5-Year</td>
<td>Not Designated</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>EASTSIDE I P A AND LAGER BREWING COMPANY</td>
<td>13739 436TH AVE SE</td>
<td>CSCSL, UST, LUST</td>
<td>5-Year</td>
<td>HC, L</td>
<td>Moderate</td>
<td>LUST removed. Groundwater concentration confirmed above cleanup levels.</td>
</tr>
<tr>
<td>QUARRY HILL COOKIES</td>
<td>10 landscape Rd</td>
<td>CSCSL, UST, LUST</td>
<td>5-Year</td>
<td>B, E, H, L</td>
<td>Moderate</td>
<td>No additional information provided.</td>
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<td>RIVER RUN</td>
<td>330 &amp; 354 E NORTH BEND WAY</td>
<td>CSCSL, UST, LUST</td>
<td>5-Year</td>
<td>Not Listed</td>
<td>Moderate</td>
<td>No additional information provided.</td>
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<tr>
<td>SOO LINE</td>
<td>200 E MAIN ST</td>
<td>CSCSL, UST, LUST</td>
<td>5-Year</td>
<td>B, E, H, L</td>
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<td>No additional information provided.</td>
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<tr>
<td>SQ010</td>
<td>400 E MAIN ST</td>
<td>CSCSL, UST, LUST</td>
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<td>A, B, C, H, I, L, K, L</td>
<td>Moderate</td>
<td>No additional information provided.</td>
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<td>VIRGINIA MASON CLINIC</td>
<td>44429 SE TANNER ROAD</td>
<td>CSCSL, UST, LUST</td>
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<td>A, B, D, E, H, L</td>
<td>Moderate</td>
<td>No additional information provided.</td>
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<td>WASHINGTON NORTH BEND, CENTURYTEL NORTH BEND</td>
<td>44139 SE 136TH ST</td>
<td>CSCSL, UST, LUST</td>
<td>5-Year</td>
<td>A, B, H, L</td>
<td>Moderate</td>
<td>No additional information provided.</td>
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<tr>
<td>Weyerhauser Pulp and Paper Company</td>
<td>44499 SE 136TH STREET</td>
<td>CSCSL, UST, LUST</td>
<td>5-Year</td>
<td>A, B, C, H, I, L</td>
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<td>No additional information provided.</td>
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**Note:** Multiple listings, NFA given for LUST.
<table>
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<tr>
<th>Order</th>
<th>Golder Fig ID</th>
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<th>Facility Name</th>
<th>Address</th>
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<th>Database Codes</th>
<th>WPHA Designation</th>
<th>Land Use Designation</th>
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<th>Note</th>
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<tr>
<td>45</td>
<td>BT504</td>
<td>M.C. ANDERSON TRUCKING</td>
<td>44700 NORTH BEND WAY</td>
<td>ICR</td>
<td>E</td>
<td>5-Year</td>
<td>EP-1 (Industrial)</td>
<td>Moderate</td>
<td>Mentor品在EPA提出的联邦风险评估报告中。进一步行动已暂停。评级降低至低。</td>
<td></td>
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<tr>
<td>46</td>
<td>BG280</td>
<td>WA DOT NORTH BEND</td>
<td>45000 SE 140TH ST</td>
<td>VCP, SPILLS</td>
<td>J, L</td>
<td>5-Year</td>
<td>EP-1 (Industrial)</td>
<td>Low</td>
<td>无进一步行动。评级降低至低。</td>
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<td>ICR, UST</td>
<td>B, H, L</td>
<td>5-Year</td>
<td>EP-1 (Industrial)</td>
<td>Low</td>
<td>被识别为被污染的土地。污染已经得到治理。</td>
<td></td>
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</table>
| 48    | B3E18        | ESTATE OF DANIEL H CAHILL | 45120 SE NORTH BEND WAY | CSCS, HSL | A, D, L | 5-Year | EP-1 (Industrial) | Moderate | 被包括在危险地点列表中，等待清理。
| 50    | BV318        | ESTATE OF DANIEL H CAHILL | 44711 SE NORTHBEND WAY | CSCS, HSL | B, D, L | 5-Year | EP-1 (Industrial) | Moderate | 被包括在危险地点列表中，等待清理。
| 51    | BV320        | TANNER ELECTRIC COOPERATIVE | 45710 SE NORTH BEND WAY PO BOX 1426 | UST | H, L | 5-Year | EP-1 (Industrial) | Moderate | 未报告的化学物质泄漏。
| 52    | BV336, BV337 | RESIDENT (also listed as Felon) | 45710 SE NORTH BEND WAY | SPILLS | J, L | 5-Year | EP-2 (Industrial) | Moderate | 化学物质泄漏。未报告的化学物质泄漏。

*No Sites in 10-Year WHPA*
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<th>Facility Name</th>
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<th>Land Use Designation</th>
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<td>CSCSL, UST, LUST, SPILLS</td>
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<td>IC (Commercial)</td>
<td>Low</td>
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Figures
1. CITY OF NORTH BEND (CITY LIMITS)
2. GOLDER (SPRINGS, WELLS)
3. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FEET

LEGEND
- Potential Future Groundwater Sources
- Centennial Well
- Mt Si Springs
- North Bend City Limits

WATER SOURCE LOCATIONS

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<th>Figure</th>
<th>Description</th>
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<td>NB-1</td>
<td>Centennial Well (NB-3)</td>
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<td>NB-2</td>
<td>Mt Si Springs</td>
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<tr>
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<td>0 feet = 2,250 feet</td>
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*This map represents potential future groundwater sources within the City of North Bend's project area, with specific landmark locations such as Centennial Well and Mt Si Springs marked for reference.*
1. SURFICIAL GEOLOGY ILLUSTRATED AT 1:100,000 RESOLUTION.

1. CITY OF NORTH BEND (CITY LIMITS)
2. GOLDER (SPRINGS, WELLS)
3. KING COUNTY (LIDAR, CONTOURS, HILLSHADE)
4. WASHINGTON DEPARTMENT OF NATURAL RESOURCES (GEOLOGIC UNITS)
5. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FEET

NOTE(S)

REFERENCE(S)
130021817
004
02

LEGEND
Potential Future Groundwater Sources
- Centennial Well
- Mt Si Springs
- North Bend City Limits

Glacial/Alluvial Deposits
- Qa/Qva (Alluvium and Advance Outwash)
- Qgo (Glacial Drift)
- Qvt (Glacial Till)

Tertiary Bedrock
- Eva
- MOigd

Mesozoic Bedrock
- KJmm
- KJmv
- MOigd
- Jigb

Water
- Water

CONSULTANT
PROJECT NO.
PHASE
REV.
FIGURE

2020-04-17
EP
TL
JP
JP

GOLDEN
CONSULTANT

PROJECT NO.
TITLE

130021817
WELLHEAD PROTECTION PLAN

SUFRICIAL GEOLOGY
1. The Sanitary Control Area (100-foot radius around the well) is approximately the same size as the symbol used to identify the Centennial Well on this map.

2. Golden (Sanitary Control Area, 6-Month Travel Time, Wellhead Protection Zones, Wells)


Map Service Layer Credits: Source: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEROGRID, IGN, and the GIS User Community

NOTES:
1. The sanitary control area (100-foot radius around the well) is approximately the same size as the symbol used to identify the Centennial Well on this map.

REFERENCE:
1. GOLDER (SANITARY CONTROL AREA, 6-MONTH TRAVEL TIME, WELLHEAD PROTECTION ZONES, WELLS)
2. GOLDEN AND THE STATE OF WASHINGTON DEPARTMENT OF HEALTH
3. MAP SERVICE LAYER CREDITS: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSSTAR GEOGRAFICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CITY OF NORTH BEND

WELLHEAD PROTECTION PLAN

TITLE
CENTENNIAL WELL (NB-3) DELINEATED WELLHEAD PROTECTION AREA

CONSULTANT
GOLDER

PROJECT NO.
130021817

REV.
PHASE
FIGURE

REV.
PREPARED
APPROVED

2020-04-17
PP
0

CONSULTANT
GOLDER

REV.
APPROVED
PREPARED
REV.

2020-04-17
PP
0

CONSULTANT
GOLDER

REV.
APPROVED
PREPARED
REV.

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CONSULTANT
GOLD
1. NB-1 is a potential future withdrawal point. For this analysis we assume the withdrawal location is where the current NB-1 well (aka Torgeson Park well) is located.

2. The sanitary control area (100-foot radius around the well) is approximately the same size as the symbol used to identify the Centennial well on the map.

REFERENCE:
1. GOLDER (sanitary control area, 6-month travel time, wellhead protection zones, wells)

NOTE(S):
1 " = 2,250 feet
2,250
4,500

FEET
1. NB-2 is a potential future withdrawal point. For this analysis we assume the withdrawal location is where the current test well (aka Gardner Weeks Park well) is located.

2. The sanitary control area (100 foot radius around the well) is approximately the same size as the symbol used to identify the Centennial Well on this map.

GOLDER (SANITARY CONTROL AREA, 6-MONTH TRAVEL TIME, WELLHEAD PROTECTION ZONES, WELLS)

SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, ONDA/AEROSPACE, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

NOTE(S)

REFERENCE(S)

1 " = 2,700 FEET

0 2,700 5,400 FEET
1. THE PUMPING WELL MODELED CONE OF DEPRESSIONS REACH STEADY STATE BEFORE THE 6-MONTH TRAVEL TIME BOUNDARY. SO ZONES 1 TO 3 HAVE THE SAME BOUNDARY.
2. THE SANITARY CONTROL AREA (100 FOOT RADIUS AROUND THE WELL) IS APPROXIMATELY THE SAME SIZE AS THE SYMBOL USED TO IDENTIFY THE CENTENNIAL WELL ON THIS FIGURE.
KING COUNTY ZONING DISTRICTS ARE PROVIDED IN AREA OUTSIDE OF NORTH BEND CITY LIMITS AND URBAN GROWTH AREAS. KING COUNTY RA-5 AND RA-10 ZONING DISTRICTS HAVE PRIMARILY RESIDENTIAL USES, BUT MAY CONTAIN BUSINESSES AND OTHER FACILITIES.

1. CITY OF NORTH BEND (CITY LIMITS, LANDUSE)
2. GOLDER (SPRINGS, WELLS)
3. KING COUNTY (LANDUSE ZONES)
4. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FEET
5. MAP SERVICE LAYER CREDITS: SOURCE: ESRI, DIGITALGLOBE, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

NOTE(S)

REFERENCE(S)

CONSULTANT

PROJECT NO.

PHASE

REV.

FIGURE

LAND USE IN NORTH BEND

WELLHEAD PROTECTION PLAN

LEGEND

Centennial Well
Potential Future Groundwater Sources
Mt Si Springs
North Bend City Limits
North Bend Urban Growth Area

Land Use
Residential
- CLDR (Constrained Low Density Residential)
- LDR (Low Density Residential)
- HDR (High Density Residential)
- HDR1 (High Density Residential with Density Restrictions)

Industrial
- EP-1 (Employment Park 1)
- EP-2 (Employment Park 2)

Commercial
- DC (Downtown Commercial)
- NB (Neighborhood Business)
- IC (Interchange Commercial)
- IMU (Interchange Mixed-Use)

Other
- CR (Cottage Residential)
- RA-2.5 (Rural, one DU per 2.5 Acre)
- RA-5 (Rural, one DU per 5 Acre)
- RA-10 (Rural, one DU per 10 Acre)
- A-35 (Agricultural, one DU per 35 Acre)
- POSPF (Park, Open Space, and Public Facilities District)
- F (Forest)
1. SOME CONTAMINANT SOURCE INVENTORY (CSI) LOCATIONS UPDATED BY GOLDER FROM SOURCE. SOURCE CSI ORIGNATED FROM ENVIRONMENTAL DATA RESOURCES (EDR).

2. SEE REPORT TEXT FOR DETAILS ON HOW THE HAZARD RATING SYSTEM WAS DEVELOPED.

1. CITY OF NORTH BEND (LANDUSE)
2. EDR (CONTAMINANT SOURCE INVENTORY)
3. GOLDER (WELLHEAD PROTECTION ZONES, WELLS)
4. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FEET
5. MAP SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

CONSULTANT
LaForest Drive Development
(Septic Drain Fields)

INSET MAP

0 2,250 4,500
1 = 2,250 FEET

INSET EXTENT

DATAFILE ID CODE Database Name Description
A CSCSL State Confirmed and Suspected Contaminated Sites List
B LUST State Leaking Underground Storage Tanks Site
C ERNS Federal Emergency Response Notification System
D HSL State Hazardous Sites List
E ICR State Independent Cleanup Reports
F RCRA-VSQG Federal RCRA generators List
G SWWLP State Solid Waste Facilities Database
H UST State Underground Storage Tanks Site
I VCP State Voluntary Cleanup Program Site
J SPILLS State Emergency Release Reports
K UIC State Underground Injection Wells Listing
L -- Listed in other EDR Databases

LEGEND
Contaminant Source Inventory
!A Centennial Well
MOD Low Potential Hazard Rating
!E Moderate Potential Hazard Rating
!J 6-Month Travel Time
!L 1-Year Wellhead Protection Area
!M 5-Year Wellhead Protection Area
!N 10-Year Wellhead Protection Area

Land Use within City Limits and Urban Growth Area

Residential
\[ \text{CDLR (Constrained Low Density Residential)} \]
\[ \text{LDR (Low Density Residential)} \]
\[ \text{HDR (High Density Residential)} \]
\[ \text{HDR1 (High Density Residential with Density Restrictions)} \]

Industrial
\[ \text{EP-1 (Employment Park 1)} \]
\[ \text{EP-2 (Employment Park 2)} \]

Commercial
\[ \text{DC (Downtown Commercial)} \]
\[ \text{NB (Neighborhood Business)} \]
\[ \text{IC (Interchange Commercial)} \]
\[ \text{IMU (Interchange Mixed-Use)} \]

Other
\[ \text{CR (Cottage Residential)} \]
\[ \text{POSPF (Park, Open Space, and Public Facilities District)} \]

INSET GREEN

1 " = 2,250 FEET

18 (B, E, H, L)
19 (E, I, L)
20 (A, B, H, L)
21 (J)
22 (H, L)
24 (H, L)
25 (H, L)
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27 (C, J)
28 (K)
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30 (K, L)
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45 (I, J, L)
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54 (A, B, H, I, L)
55 (H, L)
1. SOME CONTAMINANT SOURCE INVENTORY (CSI) LOCATIONS UPDATED BY GOLDER FROM SOURCE. SOURCE CSI ORIGINATED FROM ENVIRONMENTAL DATA RESOURCES (EDR).

2. SEE REPORT TEXT FOR DETAILS ON HOW THE HAZARD RATING SYSTEM WAS DEVELOPED.

1. CITY OF NORTH BEND (LANDUSE)
2. EDR (CONTAMINANT SOURCE INVENTORY)
3. GOLDER (WELLHEAD PROTECTION ZONES, WELLS)
4. COORDINATE SYSTEM: NAD 1983 STATEPLANE WASHINGTON NORTH FIPS 4601 FEET
5. MAP SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRID, IGN, AND THE GIS USER COMMUNITY

NOTE(S)

REFERENCE(S)

130021817 004 10 2020-08-12
Some Contaminant Source Inventory (CSI) locations updated by Golder from source. Source CSI originated from Environmental Data Resources (EDR).

See report text for details on how the hazard rating system was developed.

<table>
<thead>
<tr>
<th>City of North Bend (Landuse)</th>
<th>EDR (Contaminant Source Inventory)</th>
<th>Golder (Wellhead Protection Zones, Wells)</th>
</tr>
</thead>
</table>

Nota(s)

Reference(s)

Database ID Code  Database Name Description
A CSCSL State Confirmed and Suspicion Contaminated Sites List
B LUST State Leaking Underground Storage Tanks Site
C ERNS Federal Emergency Response Notification System
D HSL State Hazardous Sites List
E ICR State Independent Cleanup Reports
F RCRA-VQSG Federal RCRA Generators List
G SWF/LF State Solid Waste Facility Database
H UST State Underground Storage Tanks Site
I VCP State Voluntary Cleanup Program Site
J SPILLS State Emergency Release Reports
K UIC State Underground Injection Wells Listing
L -- Listed in other EDR Databases

Legend

- A
- B, G, H, J, L

6-Month Travel Time
- 1-Year Wellhead Protection Area
- 5-Year Wellhead Protection Area
- 10-Year Wellhead Protection Area

Land Use within City Limits and Urban Growth Area

Residential
- CLDR (Constrained Low Density Residential)
- LDR (Low Density Residential)
- HDR (High Density Residential)
- HDR1 (High Density Residential with Density Restrictions)

Industrial
- EP-1 (Employment Park 1)
- EP-2 (Employment Park 2)

Commercial
- DC (Downtown Commercial)
- NB (Neighborhood Business)
- IC (Interchange Commercial)
- IMU (Interchange Mixed-Use)

Other
- CR (Cottage Residential)
- POSPF (Park, Open Space, and Public Facilities District)
1. Stormwater infrastructure shown is not comprehensive of all stormwater infrastructure in City.

1. City of North Bend (City Limits)
2. EDR (UIC Wells)
3. Gray and Osborne (Bioretention Swales, conveyance lines/pipe, rain gardens, stormwater ponds)
4. Golder (Springs, wellhead protection zones, wells)

Coordinate system: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Map service layer credits: Source: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEROGRID, IGN, and the GIS user community

City of North Bend

Wellhead Protection Plan

Stormwater Facilities

Legend
- Centennial Well
- Potential Future Groundwater Sources
- Mt Si Springs
- UIC Wells
- 1-Year Wellhead Protection Area
- 5-Year Wellhead Protection Area
- 10-Year Wellhead Protection Area
- Bioretention Swales and Rain Gardens
- Stormwater Detention Ponds
- Conveyance Lines (including ditches)
- Conveyance Pipes
- North Bend City Limits

Legend:
- Centennial Well
- Potential Future Groundwater Sources
- Mt Si Springs
- UIC Wells
- 1-Year Wellhead Protection Area
- 5-Year Wellhead Protection Area
- 10-Year Wellhead Protection Area
- Bioretention Swales and Rain Gardens
- Stormwater Detention Ponds
- Conveyance Lines (including ditches)
- Conveyance Pipes
- North Bend City Limits

Legend:
- Centennial Well
- Potential Future Groundwater Sources
- Mt Si Springs
- UIC Wells
- 1-Year Wellhead Protection Area
- 5-Year Wellhead Protection Area
- 10-Year Wellhead Protection Area
- Bioretention Swales and Rain Gardens
- Stormwater Detention Ponds
- Conveyance Lines (including ditches)
- Conveyance Pipes
- North Bend City Limits
Title: Flood Hazard Map

Legend:
- Centennial Well
- Potential Future Groundwater Sources
- Mt Si Springs
- 1-Year Wellhead Protection Area
- 5-Year Wellhead Protection Area
- 10-Year Wellhead Protection Area
- Flood Zone
  - 500-Year Floodplain
  - AE - 100-Year Floodplain
  - AH - 100-Yr Floodplain (Shallow Flooding Area)
  - AH - 100-Yr Floodplain (Shallow Ponding Area)
  - X - Outside of Flood Hazard Area
  - X - Protected by Levee

References:
1. City of North Bend (City Limits, Landuse)
2. FEMA (Flood Zones)
3. Golder (Springs, Wellhead Protection Zone, Wells)
5. Map Service Layer Credits: Source: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEROGRAF, IGN, and the GIS User Community

City of North Bend

Wellhead Protection Plan

2020-04-17

CONSULTANT

LEGEND

1. City of North Bend (City Limits, Landuse)
2. FEMA (Flood Zones)
3. Golder (Springs, Wellhead Protection Zone, Wells)
5. Map Service Layer Credits: Source: ESRI, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEROGRAF, IGN, and the GIS User Community

City of North Bend

Wellhead Protection Plan

2020-04-17
Susceptibility Assessments
Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager: Les Saberniak

Water system name: City of North Bend

County: King

Water system number: 60100-A Source number: S01

Well depth: _______________ (ft.) (From WFI form)

Source name: Mt. Si Spring

WA well identification tag number: __ __ __ __ __

_____ well not tagged

Number of connections: 1211 Population served: 2790

Township: 24N Range: 08E

Section: 35 1/4 Section: /

Latitude/longitude (if available): 47 30Min.57Sec. / 121 45Min. 28Sec.

How was lat./long. determined?

_____ global positioning device _____ survey X topographic map

_____ other: ______________________________________

* Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: ___ / ___ / ___ month/day/year

last reconstruction: ___ / ___ / ___ month/day/year

_____ information unavailable

Survey Form Ver. 2.2
page 1

RECEIVED
MAR 9 1995
NW DRINKING WATER
2) Well driller: ______________________________________

__ well driller unknown

3) Type of well:

__ Drilled: ___ rotary ___ bored ___ cable (percussion) ___ Dug

__ Other: ___ spring(s) ___ lateral collector (Ranney)

___ driven ___ jetted ___ other: __________

Additional comments: ______________________________________

4) Well report available? ___ YES (attach copy to form) ___ NO

If no well log is available, please attach any other records documenting well construction; e.g. boring logs, "as built" sheets, engineering reports, well reconstruction logs.

5) Average pumping rate: ____________________________ (gallons/min)

Source of information: ______________________________________

If not documented, how was pumping rate determined? ____________________________

__ Pumping rate unknown

6) Is this source treated? ___X YES ___ NO

If so, what type of treatment:

___X disinfection ___ filtration ___ carbon filter ___ air stripper ___ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

___ Coliform Bacteria

7) If source is chlorinated, is a chlorine residual maintained? ___X YES ___ NO

Residual level: ___ .40 ___ (At the point closest to the source.)
PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]

- (less than) 20 ft  ____ 20–50 ft  ____ 50–10 ft  ____ 100–200 ft  ____ (greater than) 200 ft
- information unavailable

2) Depth to ground water (static water level):

- (less than) 20 ft  ____ 20–50 ft  ____ 50–100 ft  ____ (greater than) 100 ft
- flowing well/spring (artesian)

How was water level determined?

- well log  ____ other: __________________________________________________________
- depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:

0 psi (pounds per square inch)
or

____ feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source:  ____ YES  ____ NO

5) Wellhead elevation (height above mean sea level):  ____ (ft)

How was elevation determined?

- topographic map  ____ Drilling/Well Log  ____ altimeter

- other: __________________________________________________________

- information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)

- evidence of a confining layer in well log

- no evidence of a confining layer in well log

If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the bottom of the lowest confining layer?

- YES

- information unavailable
7) Sanitary setback:

___ (less than) 100 ft* ___ 100-120 ft  X 120-200 ft ___ (greater than) 200 ft
* if less than 100 ft describe the site conditions:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

8) Wellhead construction:

___ wellhead enclosed in a wellhouse

___ controlled access (describe):

________________________________________________________________________
________________________________________________________________________

___ other uses for wellhouse (describe):

________________________________________________________________________

___ no wellhead control

9) Surface seal:

___ 18 ft

___ (less than) 18 ft (no Department of Ecology approval)

___ (less than) 18 ft (Approved by Ecology, include documentation)

___ (greater than) 18 ft

___ depth of seal unknown

X no surface seal

10) Annual rainfall (inches per year):

___ (less than) 10 in/yr   ___ 10-25 in/yr    X (greater than) 25 in/yr
PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: __________ 158.7 Million ______ (gallons)
   How was this determined? ______ X meter
   _____ estimated: ____ pumping rate (______________)
   ____________________________
   _____ pump capacity (______________)
   ____________________________
   _____ other: ________________________________

2) "Calculated Fixed Radius" estimate of ground water movement:
   (see Instruction Packet)
   6 month ground water travel time: _______ 1550 ______ (ft)
   1 year ground water travel time: _______ 2200 ______ (ft)
   5 year ground water travel time: _______ 4920 ______ (ft)
   10 year ground water travel time: _______ 6950 ______ (ft)

   Information available on length of screened/open interval?
   _____ YES    _____ NO

   Length of screened/open interval: ______ 10 Ft. Est. ______ (ft)

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6 month time of travel boundary?
   _____ YES    _____ NO (mark and identify on map).

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6 month time of travel boundary?
   _____ YES    _____ NO (mark and identify on map).

   Comments: __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
   __________________________________________________________________________
PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five year ground water travel time:

<table>
<thead>
<tr>
<th>Source</th>
<th>6 month</th>
<th>1 year</th>
<th>5 year</th>
<th>unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>likely pesticide application</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stormwater injection wells</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>other injection wells</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>abandoned ground water well</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>landfills, dumps, disposal areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>known hazardous materials clean-up site</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>water system(s) with known quality problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>population density (greater than) 1 house/acre</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>residences commonly have septic tanks</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Wastewater treatment lagoons</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sites used for land application of waste</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mark and identify on map any of the risks listed above which are located within the 6 month time of travel boundary? (Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)

If other recorded or potential sources of ground water contamination exist within the ten year time of travel circular zone around your water supply, please describe:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
2) Source specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions:
(Unless listed on assessment, MCLs are listed in assistance package.)

A. Nitrate: (Nitrate MCL = 10 mg/l )
   Results greater than MCL  
   (less than) 2 mg/liter nitrate
   2–5 mg/liter nitrate
   (greater than) 5 mg/liter nitrate
   Nitrate sampling records unavailable

B. VOCs: (VOC detection level 0.5 ug/l or 0.0005 mg/l.)
   Results greater than MCL or SAL
   VOCs detected at least once
   VOC test performed but never detected
   VOC sampling records unavailable

C. EDB/DBCP:
   (EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)
   EDB/DBCP detected below MCL at least once
   EDB/DBCP detected above MCL at least once
   EDB/DBCP never detected
   EDB/DBCP tests required but not yet completed
   EDB/DBCP tests not required

D. Other SOCs (pesticides and other synthetic organic chemicals):
   Other SOCs detected
   Other SOC tests performed but none detected *
   Other SOC tests not performed

*If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here:


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page 7
E. Bacterial contamination:

Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records).

Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source.

Source sampling records for bacteria unavailable

Part VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for these sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10 year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

   ✔ YES  ☐ NO

   Describe with references to map produced in Part IV:

   Mt. Si to the East of Spring site – Middle Fork of the Snoqualmie River to the West

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

   ☐ YES  ✔ NO

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

   ☐ YES  ✔ NO
3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

_X YES  ___ NO

4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

   a) Presence of ground water extraction wells removing more than approximately 500 gal/min within...


   b) Presence of ground water recharge wells (dry wells) or heavy irrigation within...


Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

Mt. Si Spring flows from Mt. Si, this creates a natural boundary to the East. Land development is limited to 5 acre minimum size parcels.
Suggestions and Comments

Did you attend one of the susceptibility workshops?    # YES    X  NO
Did you find it useful?    # YES    # NO
Did you seek outside assistance to complete the assessment?    # YES    # NO

This form and instruction packet are still in the process of development. Your comments, suggestions and questions will help us upgrade and improve this assessment form. If you found particular sections confusing or problematic please let us know. How could this susceptibility assessment be improved or made clearer? Did the instruction package help you find the information needed to complete the assessment? How much time did it take you to complete the form? Were you able to complete the assessment without additional/outside expertise? Do you feel the assessment was valuable as a learning experience? Any other comments or constructive criticisms you have would be appreciated.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Survey Form Ver. 2.2
page 10
Ground Water Contamination
Susceptibility Assessment Survey Form
Version 2.2

IMPORTANT! Please complete one form for each ground water source (well, wellfield, spring) used in your water system. Photocopy as necessary.

PART I: System Information

Well owner/manager: Mr. Ron Garrow, Public Works Director

Water system name: City of North Bend

County: King

Water system number: 60100A Source number: S03

Well depth: 216 feet (From WFI form)

Source name:

WA well identification tag number: A P N - 0 6 1

☐ Well not tagged

Number of connections: ~1,700 Population served: ~4,660

Township: 23 Range: 8E

Section: 10 ¼ ¼ Section: SE, SW

Latitude/longitude (if available): 47d 29m 10s N / 121d 46m 14s W

How was latitude/longitude determined?

☐ Global positioning device ☑ survey ☐ topographical map
☐ other: 

*Please refer to Assistance Packet for details and explanations of all questions in Parts II through V.

PART II: Well Construction and Source Information

1) Date well originally constructed: 9 / 14 / 06 month/day/year

last reconstruction: 10 / 06 / 09 month/day/year

☐ Information unavailable
2) Well driller: Ross Otto, Boart Longyear

☐ Well driller unknown

3) Type of well:

☐ Drilled: ☑ rotary ☐ bored ☐ cable (percussion) ☐ Dug
☐ __ other: ☐ spring(s) ☐ lateral collector (Ranney)
☐ driven ☐ jetted ☐ other: ________________________________

4) Well report available ☑ Yes (attach copy to form) ☐ No

5) Average pumping rate: ☑ 2,500 (gallons/min)

Source of information: Hydrogeological Report

If not documented, how was pumping rate determined? ________________________________

☐ Pumping rate unknown

6) Is this source treated?

If so, what type of treatment:

☑ disinfection ☐ filtration ☐ carbon filter ☐ air stripper ☐ other

Purpose of treatment (describe materials to be removed or controlled by treatment):

__________________________________________________________

7) If source is chlorinated, is a chlorine residual maintained: ☑ Yes ☐ No

Residual level: 0.4 mg/L (At the point closest to the source.)
PART III: Hydrogeologic Information

1) Depth to top of open interval: [check one]
   - ☐ <20 ft
   - ☐ 20-50 ft
   - ☐ 50-100 ft
   - ☒ 100-200 ft
   - ☐ >200 ft
   - ☐ information unavailable

2) Depth to ground water (static water level):
   - ☒ <20 ft
   - ☐ 20-50 ft
   - ☐ 50-100 ft
   - ☐ >100 ft
   - ☐ flowing well/spring (artesian)
   - How was water level determined?
     - ☒ well log
     - ☐ other
     - ☐ depth to ground water unknown

3) If source is a flowing well or spring, what is the confining pressure:
   - ☐ N/A psi (pounds per square inch)
   - ☐ N/A feet above wellhead

4) If source is a flowing well or spring, is there a surface impoundment, reservoir, or catchment associated with this source:
   - ☐ Yes
   - ☐ No

5) Wellhead elevation (height above mean sea level): 465 feet
   - How was elevation determined?
     - ☒ topographic map
     - ☐ Drilling/Well Log
     - ☐ altimeter
     - ☐ other:
     - ☐ information unavailable

6) Confining layers: (This can be completed only for those sources with a drilling log, well log or geologic report describing subsurface conditions. Please refer to assistance package for example.)
   - ☐ evidence of a confining layer in well log
   - ☒ no evidence of a confining layer in well log
   - If there is evidence of a confining layer, is the depth to ground water more than 20 feet above the bottom of the lowest confining layer?
     - ☐ Yes
     - ☐ No
   - ☐ information unavailable
7) Sanitary setback:

☐ < 100 ft  ☒ 100-120 ft  ☐ 120-200 ft  ☐ >200 ft

* If less than 100 ft, describe the site conditions:

__________________________________________________________________________________

__________________________________________________________________________________

__________________________________________________________________________________

8) Wellhead construction:

☒ wellhead enclosed in a wellhouse

☐ controlled access (describe): ______________________________________________________

__________________________________________________________________________________

☐ other uses for wellhouse (describe): ________________________________

__________________________________________________________________________________

☐ no wellhead control

9) Surface seal:

☐ 18 ft

☒ >18 ft (no Department of Ecology approval)

☐ <18 ft (Approved by Ecology, include documentation)

☐ depth of seal unknown

☐ no surface seal

10) Annual rainfall (inches per year):

☐ <10 in/yr  ☐ 10-25 in/yr  ☒ >25 in/yr
PART IV: Mapping Your Ground Water Resource

1) Annual volume of water pumped: \(355,000,000\) (gallons)

   How was this determined?
   
   ☐ meter
   ☑ estimated: ☐ pumping rate \(\text{__________}\)
   ☐ pump capacity \(\text{__________}\)
   ☑ other: Three-fourths of 20-year system demand

2) “Calculated Fixed Radius” estimate of ground water movement:
   (see Instruction Packet)
   - 6-month ground water travel time: \(829\) feet
   - 1-year ground water travel time: \(1,172\) feet
   - 5-year ground water travel time: \(2,620\) feet
   - 10-year ground water travel time: \(3,706\) feet

   Information available on length of screened/open interval?
   ☑ Yes ☐ No

   Length of screened/open interval: \(50\) feet

3) Is there a river, lake, pond, stream, or other obvious surface water body within the 6-month time of travel boundary?
   ☐ Yes ☑ No (mark and identify on map)

4) Is there a stormwater and/or wastewater facility, treatment lagoon, or holding pond located within the 6-month time of travel boundary?
   ☐ Yes ☑ No (mark and identify on map)

   Comments: Stormwater detention pond on Public works site approximately 400 feet from production well.
PART V: Assessment of Water Quality

1) Regional sources of risk to ground water:

Please indicate if any of the following are present within a circular area around your water source having a radius up to and including the five-year ground water travel time:

- likely pesticide application
- stormwater injection wells
- other injection wells
- abandoned ground water well
- landfills, dumps, disposal areas
- known hazardous materials clean-up site
- water system(s) with known quality problems
- population density >1 house/acre
- residences commonly have septic tanks
- Wastewater treatment lagoons
- sites used for land application of waste

Mark and identify on map any of the risks listed above which are located within the 6-month time of travel boundary. (Please include a map of the wellhead and time of travel areas with this form. Please locate and mark any of the following.)

If other recorded or potential sources of ground water contamination exist within the ten-year time of travel circular zone around your water supply, please describe:

N/A

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

2) Source-specific water quality records:

Please indicate the occurrence of any test results since 1986 that meet the following conditions:

(Unless listed on assessment, MCLs are listed in assistance package.)
A. **Nitrate:** (Nitrate MCL = 10 mg/l)  
   Results greater than MCL  
   <2 mg/liter nitrate  
   2-5 mg/liter nitrate  
   <5 mg/liter nitrate  
   Nitrate sampling records unavailable

B. **VOCs:** (VOC detection level 0.5 ug/l or 0.0005 mg/l)  
   Results greater than MCL or SAL  
   VOCs detected at least once  
   VOCs never detected  
   VOC sampling records unavailable

C. **EDB/DBCP:**  
   (EDB MCL = 0.05 ug/l or 0.00005 mg/l. DBCP MCL = 0.2 ug/l or 0.0002 mg/l.)  
   EDB/DBCP detected below MCL at least once  
   EDB/DBCP detected above MCL at least once  
   EDB/DBCP never detected  
   EDB/DBCP tests required but not yet completed  
   EDB/DBCP tests not required

D. **Other SOCs (Pesticides):**  
   Other SOCs detected  
   (pesticides and other synthetic organic chemicals)  
   Other SOC tests performed but none detected  
   (list test methods in comments)  
   Other SOC tests not performed

If any SOCs in addition to EDB/DBCP were detected, please identify and date. If other SOC tests were performed, but no SOCs detected, list test methods here: ________________

EPA Methods 515.1, 525.2, 508.1, 531.2 for State Drinking Water Compliance were used for SOC tests

E. **Bacterial contamination:**  
   Any bacterial detection(s) in the past 3 years in samples taken from the source (not distribution sampling records)?  
   X
Has source (in past 3 years) had a bacteriological contamination problem found in distribution samples that was attributed to the source? ____

Source sampling records for bacteria unavailable ____

PART VI: Geographic or Hydrologic Factors Contributing to a Non-Circular Zone of Contribution

The following questions will help identify those ground water systems which may not be accurately represented by the calculated fixed radius (CFR) method described in Part IV. For these sources, the CFR areas should be used as a preliminary delineation of the critical time of travel zones for that source. As a system develops its Wellhead Protection Plan for these sources, a more detailed delineation method should be considered.

1) Is there evidence of obvious hydrologic boundaries within the 10-year time of travel zone of the CFR? (Does the largest circle extend over a stream, river, lake, up a steep hillside, and/or over a mountain or ridge?)

☒ Yes ☐ No

Describe with references to map produced in Part IV:

The Middle Fork Snoqualmie River is within the NE boundary of the 10-year time of travel zone

2) Aquifer Material:

A) Does the drilling log, well log or other geologic/engineering reports identify that the well is located in an area where the underground conditions are identified as fractured rock and/or basalt terrain?

☐ Yes ☒ No

B) Does the drilling log, well log or other geologic/engineering reports indicate that the well is located in an area where the underground conditions are primarily identified as coarse sand and gravel?

☒ Yes ☐ No

3) Is the source located in an aquifer with a high horizontal flow rate? (These can include sources located on flood plains of large rivers, artesian wells with high water pressure, and/or shallow flowing wells and springs.)

☐ Yes ☒ No
4) Are there other high capacity wells (agricultural, municipal and/or industrial) located within the CFRs?

   a) Presence of ground water extraction wells removing more than approximately 500 gal/min within…

<table>
<thead>
<tr>
<th>Travel Time</th>
<th>YES</th>
<th>NO</th>
<th>unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;6-month</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6 month—1 year</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1—5 year</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>5—10 year</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

   b) Presence of ground water recharge wells (dry wells) or heavy irrigation within…

<table>
<thead>
<tr>
<th>Travel Time</th>
<th>YES</th>
<th>NO</th>
<th>unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1-year</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>1—5 year</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5—10 year</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

Please identify or describe additional hydrologic or geographic conditions that you believe may affect the shape of the zone of contribution for this source. Where possible, reference them to locations on the map produced in Part IV.

N/A
APPENDIX B

Contaminant Source Data Inventory (EDR Report)
City of North Bend Well Head Protection Plan
North Bend, WA 98045

Inquiry Number: 5992688.2s
March 05, 2020
Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA’s Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

SUBJECT PROPERTY INFORMATION

ADDRESS

CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA 98045

TARGET PROPERTY SEARCH RESULTS

The Target Property was identified in the following databases.

Page Numbers and Map Identifications refer to the EDR Area/Corridor Report where detailed data on individual sites can be reviewed.

Sites listed in **bold italics** are in multiple databases.

STANDARD ENVIRONMENTAL RECORDS

**Federal RCRA generators list**

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

A review of the RCRA-VSQG list, as provided by EDR, and dated 12/16/2019 has revealed that there are 2 RCRA-VSQG sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH BEND AUTO PART</td>
<td>1120 E NORTH BEND WA</td>
<td>AS179 / 13</td>
<td>287</td>
</tr>
<tr>
<td>EPA ID:: WAH000010827</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAFEWAY STORE 1528</td>
<td>460 SW MT SI BLVD</td>
<td>AV196 / 12</td>
<td>330</td>
</tr>
<tr>
<td>EPA ID:: WAH000044838</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Federal ERNS list**

ERNS: Emergency Response Notification System

A review of the ERNS list, as provided by EDR, and dated 09/09/2019 has revealed that there are 2 ERNS sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not reported</td>
<td>312 E. PARK ST.</td>
<td>AB108 / 12</td>
<td>211</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Incident Date Time: 2013-10-16 07:00:00
NRC Report #: 1063259
Not reported

Incident Date Time: 2014-04-25 03:56:00
NRC Report #: 1080814

State- and tribal - equivalent NPL
WA HSL: Hazardous Sites List

A review of the WA HSL list, as provided by EDR, and dated 08/28/2019 has revealed that there are 3 WA HSL sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRYANS ONE STOP</td>
<td>302 W NORTH BEND WAY</td>
<td>I38 / 12</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Facility Type: Hazardous Sites List</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSID Number: 77989332</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facility Status: Cleanup Started</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NORTH BEND SHELL</td>
<td>225 E NORTH BEND WAY</td>
<td>X95 / 12</td>
<td>179</td>
</tr>
<tr>
<td></td>
<td>Facility Type: Hazardous Sites List</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSID Number: 82682276</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facility Status: Cleanup Started</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESTATE OF DANIEL H C</td>
<td>45120 SE NORTH BEND</td>
<td>BV318 / 19</td>
<td>468</td>
</tr>
<tr>
<td></td>
<td>Facility Type: Hazardous Sites List</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>FSID Number: 11385314</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facility Status: Awaiting Cleanup</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

State- and tribal - equivalent CERCLIS
WA CSCSL: Confirmed and Suspected Contaminated Sites List

A review of the WA CSCSL list, as provided by EDR, and dated 10/15/2019 has revealed that there are 8 WA CSCSL sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH BEND COMMUNITY</td>
<td>126 E 4TH</td>
<td>E24 / 12</td>
<td>101</td>
</tr>
<tr>
<td></td>
<td>Site Status: Cleanup Started</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clean Up Siteid: 2389</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facility ID: 7437936</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Soil: Confirmed Above Cleanup Levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contaminant Name: Petroleum Products-Unspecified</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRYANS ONE STOP</td>
<td>302 W NORTH BEND WAY</td>
<td>I38 / 12</td>
<td>109</td>
</tr>
<tr>
<td></td>
<td>Site Status: Cleanup Started</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Clean Up Siteid: 10507</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Facility ID: 77989332</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Soil: Confirmed Above Cleanup Levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ground Water: Confirmed Above Cleanup Levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Contaminant Name: Benzene</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Contaminant Name: Petroleum-Diesel
Contaminant Name: Petroleum-Gasoline
Contaminant Name: Petroleum-Other

NORTH BEND SHELL  225 E NORTH BEND WAY  X95 / 12  179
Site Status: Cleanup Started
Clean Up Siteid: 10655
Facility ID: 82682276
Soil: Confirmed Above Cleanup Levels
Ground Water: Confirmed Above Cleanup Levels
Contaminant Name: Petroleum-Other

UNOCAL SERVICE STN 2  330 & 354 E NORTH BE  Y107 / 12  204
Site Status: Cleanup Started
Clean Up Siteid: 6630
Facility ID: 75685473
Soil: Confirmed Above Cleanup Levels
Soil: Below Cleanup Levels
Ground Water: Confirmed Above Cleanup Levels
Ground Water: Below Cleanup Levels
Contaminant Name: Benzene
Contaminant Name: Lead
Contaminant Name: Methyl tertiary-butyl ether
Contaminant Name: Petroleum-Diesel
Contaminant Name: Petroleum-Gasoline
*Additional key fields are available in the Map Findings section

NORTH BEND 76  520 E NORTH BEND WAY  AH141 / 12  246
Site Status: Cleanup Started
Clean Up Siteid: 5336
Facility ID: 4364196
Soil: Confirmed Above Cleanup Levels
Ground Water: Confirmed Above Cleanup Levels
Contaminant Name: Benzene
Contaminant Name: Non-Halogenated Solvents
Contaminant Name: Petroleum-Gasoline

FRANK PADAVICH  1130 E NORTH BEND WA  AS183 / 13  314
Site Status: Cleanup Started
Clean Up Siteid: 5983
Facility ID: 37779318
Soil: Confirmed Above Cleanup Levels
Contaminant Name: Petroleum-Other

SAFEWAY FUEL 1528  715 SW MT SI BLVD  AU198 / 17  333
Site Status: Cleanup Started
Clean Up Siteid: 11075
Facility ID: 92656149
Soil: Remediated-Below
Ground Water: Confirmed Above Cleanup Levels
Ground Water: Suspected
Contaminant Name: Benzene
Contaminant Name: Petroleum-Diesel
Contaminant Name: Petroleum-Gasoline

ESTATE OF DANIEL H C  45120 SE NORTH BEND  BV318 / 19  468
Site Status: Awaiting Cleanup
Clean Up Siteid: 3888
EXECUTIVE SUMMARY

Facility ID: 11385314
Soil: Suspected
Soil: Confirmed Above Cleanup Levels
Ground Water: Suspected
Contaminant Name: Corrosive Wastes
Contaminant Name: Halogenated Organics
Contaminant Name: Metals Priority Pollutants
Contaminant Name: Non-Halogenated Solvents

State and tribal landfill and/or solid waste disposal site lists
WA SWF/LF: Solid Waste Facility Database
A review of the WA SWF/LF list, as provided by EDR, has revealed that there is 1 WA SWF/LF site within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH BEND WASTEWATE</td>
<td>400 BENDIGO BLVD N</td>
<td>C13 / 12</td>
<td>85</td>
</tr>
</tbody>
</table>

State and tribal leaking storage tank lists
WA LUST: Leaking Underground Storage Tanks Site List
A review of the WA LUST list, as provided by EDR, has revealed that there are 12 WA LUST sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRYANS ONE STOP</td>
<td>302 W NORTH BEND WAY</td>
<td>I38 / 12</td>
<td>109</td>
</tr>
<tr>
<td>CENTURYTEL NORTH BEN</td>
<td>131 2ND AVE E</td>
<td>M63 / 12</td>
<td>154</td>
</tr>
<tr>
<td>DNR NORTH BEND</td>
<td>223 E 2ND ST</td>
<td>T75 / 12</td>
<td>166</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Release Date: 04/16/1991
LUST Date: 02/15/2018
Facility Status: LUST - NFA
Ground Water: Remediated-Below
Cleanup Site ID: 8714
Soil: Remediated-Below
Facility ID: 32541339

VIRGINIA MASON MED C 248 MAIN AVE S V81 / 12 170
Database: LUST, Date of Government Version: 11/11/2019
Release Date: 02/11/1999
LUST Date: 11/03/1999
Facility Status: LUST - NFA
Ground Water: Confirmed Above Cleanup Levels
Cleanup Site ID: 6677
Soil: Confirmed Above Cleanup Levels
Facility ID: 78819135

NORTH BEND SHELL 225 E NORTH BEND WAY X95 / 12 179
Database: LUST, Date of Government Version: 11/11/2019
Release Date: 06/10/1996
LUST Date: 02/06/2013
Facility Status: LUST - Cleanup Started
Ground Water: Confirmed Above Cleanup Levels
Cleanup Site ID: 10655
Soil: Confirmed Above Cleanup Levels
Facility ID: 82682276

UNOCAL SERVICE STN 2 330 & 354 E NORTH BE Y107 / 12 204
Database: LUST, Date of Government Version: 11/11/2019
Release Date: 11/12/1999
LUST Date: 12/04/2001
Facility Status: LUST - Cleanup Started
Ground Water: Confirmed Above Cleanup Levels
Ground Water: Below Cleanup Levels
Cleanup Site ID: 6630
Soil: Confirmed Above Cleanup Levels
Soil: Below Cleanup Levels
Facility ID: 75665473

NORTH BEND STP 400 NORTH BEND BLVD 114 / 12 214
Database: LUST, Date of Government Version: 11/11/2019
Release Date: 12/21/1998
LUST Date: 10/03/2011
Facility Status: LUST - NFA
Cleanup Site ID: 8964
Soil: Remediated-Below
Facility ID: 38121329

NORTH BEND 76 520 E NORTH BEND WAY AH141 / 12 246
Database: LUST, Date of Government Version: 11/11/2019
Release Date: 10/02/2007
LUST Date: 10/02/2007
Facility Status: LUST - Awaiting Cleanup
Ground Water: Confirmed Above Cleanup Levels
Cleanup Site ID: 5336
Soil: Confirmed Above Cleanup Levels
Facility ID: 4364196

FRANK PADAVICH 1130 E NORTH BEND WA AS183 / 13 314
Database: LUST, Date of Government Version: 11/11/2019
State and tribal registered storage tank lists
WA UST: Underground Storage Tank Database

A review of the WA UST list, as provided by EDR, and dated 11/11/2019 has revealed that there are 23 WA UST sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>NORTH BEND CITY OF</td>
<td>400 NORTHBEND BLVD N</td>
<td>14 / 12</td>
<td>86</td>
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<tr>
<td>Facility ID: 38121329</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Status: Removed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Id: 10583</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BRYANS ONE STOP</td>
<td>302 W NORTH BEND WAY</td>
<td>I38 / 12</td>
<td>109</td>
</tr>
<tr>
<td>Facility ID: 77989332</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Status: Removed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Closure Date: 07/12/2010</td>
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</tr>
<tr>
<td>Site Id: 8310</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>TELEPHONE UTILITIES</td>
<td>131 2ND ST EAST</td>
<td>M49 / 12</td>
<td>130</td>
</tr>
<tr>
<td>Site ID</td>
<td>Facility Name</td>
<td>Address</td>
<td>Tank Status</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------</td>
<td>--------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>22472173</td>
<td>CHAPLINS NORTH BEND</td>
<td>106 MAIN AVE N</td>
<td>Removed</td>
</tr>
<tr>
<td>87445666</td>
<td>FLOYDS COMPLETE SERV</td>
<td>106 E NORTH BEND WAY</td>
<td>Removed</td>
</tr>
<tr>
<td>19924895</td>
<td>WA DNR NORTH BEND</td>
<td>205 BALLARET</td>
<td>Removed</td>
</tr>
<tr>
<td>32541339</td>
<td>VIRGINIA MASON CLINI</td>
<td>248 MAIN AVE S</td>
<td>Removed</td>
</tr>
<tr>
<td>82682276</td>
<td>NORTH BEND SHELL</td>
<td>225 E NORTH BEND WAY</td>
<td>Operational</td>
</tr>
<tr>
<td>43918675</td>
<td>BUSY BEE STATION &amp; C</td>
<td>352 E NORTH BEND WAY</td>
<td>Removed</td>
</tr>
<tr>
<td>75685473</td>
<td>UNOCAL SERVICE STN 2</td>
<td>330 &amp; 354 E NORTH BE</td>
<td>Removed</td>
</tr>
<tr>
<td>95994624</td>
<td>QFC SHOPPING CENTER</td>
<td>470 E NORTH BEND WAY</td>
<td>Removed</td>
</tr>
<tr>
<td>11551752</td>
<td>NORTH BEND</td>
<td>215 E PARK</td>
<td>Removed</td>
</tr>
<tr>
<td>4364196</td>
<td>NORTH BEND 76</td>
<td>520 E NORTH BEND WAY</td>
<td>Removed</td>
</tr>
<tr>
<td>12657451</td>
<td>MT SI SHELL</td>
<td>742 SW MT SI BLVD</td>
<td>Removed</td>
</tr>
</tbody>
</table>

TC5992688.2s  EXECUTIVE SUMMARY 7
State and tribal voluntary cleanup sites

WA VCP: Voluntary Cleanup Program Sites

A review of the WA VCP list, as provided by EDR, and dated 10/15/2019 has revealed that there are 6 WA VCP sites within the requested target property.
EXECUTIVE SUMMARY

Facility ID: 7437936
Cleanup Siteid: 2389

RESIDENCE GREW 349 E 3RD ST S72 / 12 161
Date NFA: 2000-03-17
VCP: NFA
Facility ID: 86393988
Date NFA: 2000-03-17
VCP: NFA
Cleanup Siteid: 608

VIRGINIA MASON MED C 248 MAIN AVE S V83 / 12 173
Date NFA: 1999-11-03
VCP: NFA
Facility ID: 78819135
Date NFA: 1999-11-03
VCP: NFA
Cleanup Siteid: 6677

NORTH BEND 76 520 E NORTH BEND WAY AH139 / 12 243
VCP: TRUE
Facility ID: 4364196
VCP: TRUE
Cleanup Siteid: 5336

FRANK PADAVICH 1130 E NORTH BEND WA AS184 / 13 319
Facility ID: 37779318
Cleanup Siteid: 5983

WA DOT NORTH BEND 45000 SE 140TH ST BQ293 / 19 447
Date NFA: 2005-03-08
VCP: NFA
Facility ID: 26445399
Date NFA: 2005-03-08
VCP: NFA
Cleanup Siteid: 3496

WA ICR: Independent Cleanup Reports

A review of the WA ICR list, as provided by EDR, and dated 12/01/2002 has revealed that there are 10 WA ICR sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
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<tbody>
<tr>
<td>NORTH BEND COMMUNITY</td>
<td>126 E. 4TH</td>
<td>E28 / 12</td>
<td>103</td>
</tr>
<tr>
<td>Contaminants Found at Site: 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Report Ecology Received: I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date Ecology Received Report: 02/09/99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date Ecology Received Report: 05/10/00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media Contaminated: S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Media Contaminated: GW,S</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEVRON - NORTH BEND</td>
<td>302 NORTH BEND WAY</td>
<td>41 / 12</td>
<td>117</td>
</tr>
<tr>
<td>Contaminants Found at Site: 6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of Report Ecology Received: I</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date Ecology Received Report: 03/20/92</td>
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<td></td>
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</tr>
<tr>
<td>Media Contaminated: S</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>PACIFIC TELECOM</td>
<td>131 2ND ST. E.</td>
<td>M50 / 12</td>
<td>131</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Contaminants Found at Site: 6
Type of Report Ecology Received: I
Date Ecology Received Report: 09/12/94
Media Contaminated: S

RESIDENCE 349 E. 3RD ST. S71 / 12 161
Contaminants Found at Site: 6
Type of Report Ecology Received: I
Date Ecology Received Report: 11/21/97
Media Contaminated: GW,S

DEPARTMENT OF NATURA 223 E. 2ND ST. T76 / 12 168
Contaminants Found at Site: 6
Type of Report Ecology Received: I
Date Ecology Received Report: 12/04/91
Media Contaminated: S

VIRGINIA MASON CLINI 248 MAIN AVE S V82 / 12 171
Contaminants Found at Site: 6
Type of Report Ecology Received: F
Date Ecology Received Report: 09/30/99
Date Ecology Received Report: 11/03/99
Media Contaminated: GW,S

TEXACO 225 E. NORTH BEND WA X93 / 12 177
Contaminants Found at Site: 6
Type of Report Ecology Received: I
Date Ecology Received Report: 09/10/98
Date Ecology Received Report: 11/12/96
Media Contaminated: GW,S

ROWLEY ENTERPRISE/ M 43321 MT. SI ROAD SE BB222 / 18 376
Contaminants Found at Site: 6
Type of Report Ecology Received: I
Date Ecology Received Report: 11/19/90
Media Contaminated: SED,GW

PUGET SOUND POWER & 44429 SE TANNER RD BL279 / 18 427
Contaminants Found at Site: 6
Type of Report Ecology Received: F
Date Ecology Received Report: 10/28/02
Media Contaminated: S

M.C. ANDERSON TRUCKI 44700 NORTH BEND WAY BT304 / 19 454
Contaminants Found at Site: 6
Type of Report Ecology Received: I
Date Ecology Received Report: 02/21/91
Date Ecology Received Report: 09/30/91
Media Contaminated: S

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists
US BROWNFIELDS: A Listing of Brownfields Sites

A review of the US BROWNFIELDS list, as provided by EDR, and dated 06/03/2019 has revealed that there
are 2 US BROWNFIELDS sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>DINGFORD CREEK TRAIL</td>
<td>NEAR DINGFORD CREEK</td>
<td>Y100 / 12</td>
<td>195</td>
</tr>
<tr>
<td>ACRES property ID: 16059</td>
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</tr>
<tr>
<td>NEAR 11.7 MILE OF E</td>
<td>NEAR 11.7 MILE OF E</td>
<td>228 / 17</td>
<td>380</td>
</tr>
<tr>
<td>ACRES property ID: 20541</td>
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</tr>
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</table>

**Local Lists of Landfill / Solid Waste Disposal Sites**

WA SWRCY: Recycling Facility List

A review of the WA SWRCY list, as provided by EDR, and dated 07/23/2019 has revealed that there are 3 WA SWRCY sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIGHTRECYCLE WASHING</td>
<td>248 BENDIGO BOULEVAR</td>
<td>W88 / 12</td>
<td>175</td>
</tr>
<tr>
<td>KING COUNTY SECURE M</td>
<td>460 E NORTH BEND WAY</td>
<td>102 / 12</td>
<td>198</td>
</tr>
<tr>
<td>LIGHTRECYCLE WASHING</td>
<td>330 MAIN AVE. S</td>
<td>116 / 12</td>
<td>221</td>
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</tbody>
</table>

**Local Lists of Hazardous waste / Contaminated Sites**

WA ALLSITES: Facility/Site Identification System Listing

A review of the WA ALLSITES list, as provided by EDR, and dated 10/29/2019 has revealed that there are 97 WA ALLSITES sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHAKE MILL LEFT BANK</td>
<td>8716 428TH AVE SE</td>
<td>B3 / 8</td>
<td>74</td>
</tr>
<tr>
<td>Facility Id: 90753</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>KING CNTY NORTH FORK</td>
<td>T24N R83 S34</td>
<td>B4 / 8</td>
<td>74</td>
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<td>Facility Id: 63635197</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NORTH BEND WASTEWATE</td>
<td>400 BENDIGO BLVD N</td>
<td>C13 / 12</td>
<td>85</td>
</tr>
<tr>
<td>Facility Id: 56772</td>
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<td></td>
</tr>
<tr>
<td>NORTH BEND WWTP</td>
<td>400 BENDIGO</td>
<td>15 / 12</td>
<td>88</td>
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<tr>
<td>Facility Id: 21911</td>
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<td></td>
</tr>
<tr>
<td>ULID NO 6 PUMP STATI</td>
<td>356 BENDIGO BLVD N</td>
<td>D18 / 12</td>
<td>89</td>
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<tr>
<td>Facility Id: 18666</td>
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<td>NORTH BEND COMMUNITY</td>
<td>126 E 4TH</td>
<td>E24 / 12</td>
<td>101</td>
</tr>
<tr>
<td>Facility Id: 7437936</td>
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<td></td>
</tr>
<tr>
<td>OLYMPUS JOB 91 3593</td>
<td>S SIDE 101ST ST 1 BL</td>
<td>H32 / 12</td>
<td>106</td>
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<tr>
<td>Facility Id: 13322851</td>
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<tr>
<td>BRYANS ONE STOP</td>
<td>302 W NORTH BEND WAY</td>
<td>I38 / 12</td>
<td>109</td>
</tr>
<tr>
<td>Facility Id: 77989332</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>KING CNTY DOT 428TH</td>
<td>428TH AVE SE CROSSIN</td>
<td>J42 / 12</td>
<td>117</td>
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<tr>
<td>Facility Id: 8942198</td>
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</tr>
<tr>
<td>WA DOT BRG 202/066</td>
<td>MP 29.50-29.59</td>
<td>L48 / 12</td>
<td>128</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Facility Id: 4130071
PLAT OF RIVER GLEN  PICKETT AVE  N51 / 13  131
Facility Id: 17798
TOLLGATE FARM PARK  N BEND WAY & BENDIGO  OS3 / 12  132
Facility Id: 15915
CHAPLINS NORTH BEND  106 MAIN AVE N  P61 / 12  148
Facility Id: 6719324
Facility Id: 87445666
CENTURYTEL NORTH BEN  131 2ND AVE E  M63 / 12  154
Facility Id: 22472173
Facility Id: 31962197
FLOYDS COMPLETE SERV  106 E NORTH BEND WAY  Q64 / 12  156
Facility Id: 19924895
RESIDENCE GREW  349 E 3RD ST  S70 / 12  160
Facility Id: 86393988
WA DNR NORTH BEND  205 BALLARET  T74 / 12  163
Facility Id: 32541339
VIRGINIA MASON MED C  248 MAIN AVE S  V81 / 12  170
Facility Id: 78819135
LIGHTRECYCLE WASHING  248 BENDIGO BOULEVAR  W88 / 12  175
Facility Id: 4754
NORTH BEND SHELL  225 E NORTH BEND WAY  X95 / 12  179
Facility Id: 82682276
BUSY BEE STATION & C  352 E NORTH BEND WAY  Y99 / 12  191
Facility Id: 43918675
KING CNTY DEEP CREEK  FURY LAKE RD 7.5 MI  Z101 / 12  198
Facility Id: 72714486
RIVER GLEN  814 NE 3RD STREET  AA105 / 13  203
Facility Id: 20499
UNOCAL SERVICE STN 2  330 & 354 E NORTH BE  Y107 / 12  204
Facility Id: 75685473
NORTH BEND DRY CLEAN  400 E NORTH BEND WAY  AC110 / 12  212
Facility Id: 19591
NORTH BEND STP  400 NORTH BEND BLVD  114 / 12  214
Facility Id: 38121329
QFC SHOPPING CENTER  470 E NORTH BEND WAY  AH124 / 12  235
Facility Id: 95994624
NORTH BEND  215 E PARK  AE127 / 12  238
Facility Id: 11551752
CITY OF NORTH BEND N  NE 3RD ST  AI130 / 13  240
Facility Id: 945
NORTH BEND 76  520 E NORTH BEND WAY  AH141 / 12  246
Facility Id: 4364196
PHOENIX PLAZA  530 E NORTH BEND WAY  AJ144 / 12  254
Facility Id: 88757
RANGER STATION COTTA  SEC 424TH AVE SE & S  148 / 12  257
Facility Id: 14309
ORCHARD PLACE APARTM  240 SE ORCHARD DR  AK151 / 12  259
<table>
<thead>
<tr>
<th>Facility Id</th>
<th>Name</th>
<th>Address</th>
<th>Code / Year</th>
<th>Page</th>
</tr>
</thead>
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## EXECUTIVE SUMMARY

Facility Id: 32441422
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Facility Id: 4987
710 MALONEY GROVE AV  BA220 / 17  373

Facility Id: 4987
**ROWLEY ENTERPRISES M**
Facility Id: 2305
43321 MT SI RD SE  BB223 / 18  376

Facility Id: 9844
**CEDAR FALLS DEVELOP**
Facility Id: 9844
INTER OF 424TH AVE S  BC230 / 17  383

Facility Id: 9011069
**LEVEL 3 COMMUNICAT**
Facility Id: 9011069
43411 SE NORTH BEND  231 / 18  384

Facility Id: 15772
**APPLIED PROFESSIONAL**
Facility Id: 15772
43530 SE NORTH BEND  BD236 / 18  390

Facility Id: 15681
**NORTH BEND COTTAGES**
Facility Id: 15681
BE237 / 18  390

Facility Id: 12463
**DUMP SITE**
Facility Id: 12463
444TH AVE SE  239 / 18  391

Facility Id: 9188
**CEDAR FALLS SOUTH**
Facility Id: 9188
13303 427TH AVE SE  240 / 18  392

Facility Id: 23996
**BPA NORTH BEND RADIO**
Facility Id: 23996
END OF RATTLESNAKE M  BG247 / 18  401

Facility Id: 49247823
**PSE RATTLESNAKE MT M**
Facility Id: 49247823
1441 389TH AVE SE  BG248 / 18  402

Facility Id: 33971595
**AT&T WA0330 RTGWAQ35**
Facility Id: 33971595
RATTLESNAKE LEDGE RR  BG249 / 18  402

Facility Id: 44895196
**AT&T NORTHBEND WA524**
Facility Id: 44895196
53000 SE FROUSE RIDG  BG250 / 18  403

Facility Id: 7047
**TANNER ROAD SUBDIVIS**
Facility Id: 7047
251 / 19  404

Facility Id: 72303
**SUN RISE VIEW**
Facility Id: 72303
42621 SE 134TH PL  BI259 / 18  409

Facility Id: 17491
**CHINOOK LUMBER**
Facility Id: 17491
436TH AVE SE CEDAR F  261 / 18  410

Facility Id: 69013
**CEDAR RIVER PARTNERS**
Facility Id: 69013
44124 SE NORTH BEND  265 / 18  417

Facility Id: 30375
**RIVER RUN**
Facility Id: 30375
43600 SE 136TH STREE  BK268 / 18  422

Facility Id: 65553121
**PUGET SOUND POWER &**
Facility Id: 65553121
44429 SE TANNER RD  BL279 / 18  427

Facility Id: 8083
**MINERS RIDGE 24 LOT**
Facility Id: 8083
13607 461ST AVE SE  BM281 / 19  434

Facility Id: 20099
**CEDAR LANDING PHASES**
Facility Id: 20099
BP291 / 19  445

Facility Id: 7507
**MAS RESOURCES INC JO**
Facility Id: 7507
TANNER RD  BP291 / 19  445
EXECUTIVE SUMMARY

Facility Id: 759689
TANNER FALLS RECLAMA  SE 140TH ST WEST OF  292 / 19 446
Facility Id: 13623
WA DOT NORTH BEND  45000 SE 140TH ST  BQ294 / 19 447
Facility Id: 26445399
AT&T WIRELESS TANNER  16550 487TH AVE SE  296 / 18 449
Facility Id: 8479624
TANNERWOOD A  SE 140TH ST AND 453N  BR297 / 19 450
Facility Id: 8564
CHAMPION INTERNATIONAL  200 FT S OF MIDDLE F  BT305 / 19 454
Facility Id: 79177226
IRON HORSE PARK  I90 EXIT 32  BU313 / 18 461
Facility Id: 17443974
MC ANDERSON TRUCKING  44711 SE NORTHBEND W  315 / 19 462
Facility Id: 14722754
ESTATE OF DANIEL H C  45120 SE NORTH BEND  BV318 / 19 468
Facility Id: 11385314
TANNER HEADQUARTERS  321 / 19 475
Facility Id: 94293
I90 CORPORATE PARK  46501 & 46511 SE NOR  322 / 20 475
Facility Id: 8801624
SNOQUALMIE VALLEY SC  46837 SE MIDDLE FORK  323 / 20 476
Facility Id: 88692836
CASCADE GOLF COURSE  14303 436 AVE SE  BW326 / 18 480
Facility Id: 12124286
EM MATSON JR CO INC  45620 SE NORTH BEND  BX328 / 19 481
Facility Id: 798308
TANNER ELECTRIC COOP  45710 SE NORTH BEND  CA340 / 19 519
Facility Id: 97225144
PETROCARD INC NORTH  14220 468TH PL SE  CB347 / 20 526
Facility Id: 16943
EASTBOUND INTERSTATE  EB I90 MP 33  349 / 19 527
Facility Id: 8343
CASCADE DIESEL TRUCK  45830 SE NORTH BEND  CC351 / 19 527
Facility Id: 24812
I90 NORTH BEND CORPO  SE NORTH BEND WAY  CD354 / 20 530
Facility Id: 12617

WA HIST CDL: List of Sites Contaminated by Clandestine Drug Labs

A review of the WA HIST CDL list, as provided by EDR, and dated 02/08/2007 has revealed that there is 1 WA HIST CDL site within the requested target property.

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A review of the WA CSCSL NFA list, as provided by EDR, and dated 10/15/2019 has revealed that there are 10 WA CSCSL NFA sites within the requested target property.

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Records of Emergency Release Reports

WA SPILLS: Reported Spills

A review of the WA SPILLS list, as provided by EDR, and dated 12/05/2019 has revealed that there are 33 WA SPILLS sites within the requested target property.

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EXECUTIVE SUMMARY

Facility ID: 91696
PSE
Facility ID: 613789
PSE
Facility ID: 616707
RESIDENT
Facility ID: 531461
FELON
Facility ID: 500748

Other Ascertainable Records
RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/16/2019 has revealed that there are 13 RCRA NonGen / NLR sites within the requested target property.

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EXECUTIVE SUMMARY

SSTS: Section 7 Tracking Systems

A review of the SSTS list, as provided by EDR, and dated 05/01/2019 has revealed that there are 4 SSTS sites within the requested target property.

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ICIS: Integrated Compliance Information System

A review of the ICIS list, as provided by EDR, and dated 11/18/2016 has revealed that there is 1 ICIS site within the requested target property.

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FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A review of the FTTS list, as provided by EDR, has revealed that there are 5 FTTS sites within the requested target property.

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EXECUTIVE SUMMARY

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A review of the HIST FTTS list, as provided by EDR, has revealed that there are 5 HIST FTTS sites within the requested target property.

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Database: HIST FTTS INSP, Date of Government Version: 10/19/2006
Close Date: / /
Docket Number:: 1088-08-28-2615

US MINES: Mines Master Index File

A review of the US MINES list, as provided by EDR, has revealed that there are 2 US MINES sites within the requested target property.

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<td>FURY SITE WORKS INC</td>
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Database: MINES VIOLATIONS, Date of Government Version: 12/03/2019
Mine ID:: 4503732

ABANDONED MINES: Abandoned Mines

A review of the ABANDONED MINES list, as provided by EDR, and dated 12/09/2019 has revealed that there are 2 ABANDONED MINES sites within the requested target property.

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FINDS: Facility Index System/Facility Registry System

A review of the FINDS list, as provided by EDR, and dated 11/22/2019 has revealed that there are 86 FINDS sites within the requested target property.

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Registry ID:: 110008227846

**EXECUTIVE SUMMARY**

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EXECUTIVE SUMMARY

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<td>227 / 18</td>
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## EXECUTIVE SUMMARY

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A review of the ECHO list, as provided by EDR, and dated 10/06/2019 has revealed that there are 39 ECHO sites within the requested target property.
Registry ID: 110017939506
WA DOT BRG 202/066
Registry ID: 1100354434179
CHAPLINS NORTH BEND
Registry ID: 110054937404
J.O. BORGEN PLAZA
Registry ID: 110005366460
KING CNTY DEEP CREEK
Registry ID: 110000827258
RIVER GLEN
Registry ID: 1100035489638
RANGER STATION COTTA
Registry ID: 1100006684868
PHOENIX PLAZA
Registry ID: 110070229416
ORCHARD PLACE APARTM
Registry ID: 1100007237111
SI VIEW PARK AND POO
Registry ID: 1100015439140
WA DOT CAMP MASON US
Registry ID: 1100006138928
FIRE STATION 87
Registry ID: 110046591540
SI VIEW ESTATES 28 L
Registry ID: 110055371119
NORTH BEND AUTO PART
Registry ID: 110003597070
KING CNTY DOT MOUNT
Registry ID: 110037223000
SAFEWAY STORE 1528
Registry ID: 11005582296670
NORTH BEND CITY
Registry ID: 110070226846
Registry ID: 110064679879
MALONEY GROVE 9 LOT
Registry ID: 1100553711146
MALONEY GROVE 13
Registry ID: 110064653888
CEDAR FALLS DEVELOPM
Registry ID: 110054911533
APPLIED PROFESSIONAL
Registry ID: 110069632712
NORTH BEND COTTAGES
Registry ID: 110061783559
CEDAR RIVER PARTNERS
Registry ID: 1100700554524
SUN RISE VIEW
Registry ID: 110070226846

MP 29.50-29.59  J47 / 12  128
J47 / 12  148
J47 / 12  174
J47 / 12  202
J47 / 12  203
J47 / 12  240
J47 / 12  257
J47 / 12  260
J47 / 12  262
J47 / 12  279
J47 / 12  283
J47 / 12  285
J47 / 12  287
J47 / 12  307
J47 / 12  330
J47 / 18  355
J47 / 17  366
J47 / 17  375
J47 / 17  383
J47 / 18  389
J47 / 18  391
J47 / 18  396
J47 / 18  406
WA ASBESTOS: ASBESTOS

A review of the WA ASBESTOS list, as provided by EDR, and dated 12/05/2019 has revealed that there are 29 WA ASBESTOS sites within the requested target property.

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<td>AE118 / 12</td>
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### EXECUTIVE SUMMARY

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<td>BF245 / 18</td>
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<td>BI258 / 18</td>
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<td><strong>CEDAR RIVER PARTNERS</strong></td>
<td><strong>44124 SE NORTH BEND</strong></td>
<td><strong>265 / 18</strong></td>
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**WA Financial Assurance: Financial Assurance Information Listing**

A review of the WA Financial Assurance list, as provided by EDR, has revealed that there are 5 WA Financial Assurance sites within the requested target property.

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<td><strong>MT SI CHEVRON</strong></td>
<td><strong>745 SW MT SI BLVD</strong></td>
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**CA HAZNET: Facility and Manifest Data**

A review of the CA HAZNET list, as provided by EDR, and dated 12/31/2017 has revealed that there is 1 CA HAZNET site within the requested target property.

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**WA MANIFEST: Hazardous Waste Manifest Data**

A review of the WA MANIFEST list, as provided by EDR, and dated 03/29/2019 has revealed that there are 8 WA MANIFEST sites within the requested target property.

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EXECUTIVE SUMMARY

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Gen Status CD: SQG
EPA ID: WAH000031408

**NORTH BEND AUTO PART**
Facility Site ID Number: 25439352
Gen Status CD: SQG
EPA ID: WAH000010827

**KING CNTY DOT MOUNT**
Facility Site ID Number: 7159756
Gen Status CD: LQG
Gen Status CD: XQG
EPA ID: WAH000033348

**SAFEWAY STORE 1528**
Facility Site ID Number: 3485
Gen Status CD: SQG
EPA ID: WAH000044838

**NORTH BEND CITY**
Facility Site ID Number: 5666768
Gen Status CD: SQG
EPA ID: WAH000022826

**APPLIED PROFESSIONAL**
Facility Site ID Number: 15772
Gen Status CD: XQG
EPA ID: WAH000051652

**ESTATE OF DANIEL H C**
Facility Site ID Number: 11385314
Gen Status CD: LQG
EPA ID: WAR000008474

**EM MATSON JR CO INC**
Facility Site ID Number: 798308
Gen Status CD: LOG
EPA ID: WAH000044444

WA NPDES: Water Quality Permit System Data

A review of the WA NPDES list, as provided by EDR, and dated 10/15/2019 has revealed that there are 14 WA NPDES sites within the requested target property.

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TC5992688.2s EXECUTIVE SUMMARY 29
EXECUTIVE SUMMARY

-) Permit ID: WAR303471
- ORCHARD PLACE APARTM 240 SE ORCHARD DR AK151 / 12 259
- MT SI BRIDGE 2550A 204 / 18 344
- NORTH BEND CITY 1155 E NORTH BEND WA 207 / 18 355
- I-90 NORTH BEND CORP 468TH AVE SE BW SE 1 232 / 19 384
- CEDAR FALLS SOUTH 13303 427TH AVE SE 240 / 18 392
- SUN RISE VIEW 42621 SE 134TH PL BI259 / 18 409
- CEDAR RIVER PARTNERS 44124 SE NORTH BEND 265 / 18 417
- RIVER RUN 43600 SE 136TH STREE BK268 / 18 422
- TANNER FALLS RECLAMA SE 140TH ST WEST OF 292 / 19 446

WA UIC: Underground Injection Wells Listing

A review of the WA UIC list, as provided by EDR, and dated 10/15/2019 has revealed that there are 27 WA UIC sites within the requested target property.

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<td>AD113 / 13</td>
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<td>AH135 / 12</td>
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<td>BF244 / 18</td>
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<td>252 / 18</td>
<td>404</td>
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<td>BH253 / 18</td>
<td>405</td>
</tr>
</tbody>
</table>
MINES MRDS: Mineral Resources Data System

A review of the MINES MRDS list, as provided by EDR, and dated 04/06/2018 has revealed that there are 6 MINES MRDS sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCHLOCK PIT</td>
<td>8 / 8</td>
<td></td>
<td>81</td>
</tr>
<tr>
<td>ANNIE</td>
<td>9 / 9</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>CAMP BROWN QUARRY</td>
<td>G30 / 12</td>
<td></td>
<td>104</td>
</tr>
<tr>
<td>MAINLINE 100 PIT</td>
<td>F31 / 12</td>
<td></td>
<td>105</td>
</tr>
<tr>
<td>NORTH BEND PIT - DIV</td>
<td>158 / 12</td>
<td></td>
<td>264</td>
</tr>
<tr>
<td>DAVID PIT</td>
<td>BP288 / 19</td>
<td></td>
<td>443</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: EDR Exclusive Historical Auto Stations

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 20 EDR Hist Auto sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH BEND TESORO</td>
<td>302 BENDIGO BLVD N</td>
<td>F29 / 12</td>
<td>104</td>
</tr>
<tr>
<td>G &amp; S SERVICES INC</td>
<td>225 BENDIGO BLVD N</td>
<td>G34 / 12</td>
<td>107</td>
</tr>
<tr>
<td>MOFFAT DISTRIBUTING</td>
<td>107 SIDNEY ST N</td>
<td>I36 / 12</td>
<td>109</td>
</tr>
<tr>
<td>NORTH BEND CHEVRON</td>
<td>201 W NORTH BEND WAY</td>
<td>O55 / 12</td>
<td>138</td>
</tr>
<tr>
<td>CLARKE FLOYD M</td>
<td>FIRST AVE E &amp; MAIN</td>
<td>Q66 / 12</td>
<td>159</td>
</tr>
<tr>
<td>ARCO SELF SERVICE</td>
<td>201 N BEND BLVD N</td>
<td>R67 / 12</td>
<td>159</td>
</tr>
<tr>
<td>CLARKE FLOYD M</td>
<td>104 1ST AVE</td>
<td>Q68 / 12</td>
<td>159</td>
</tr>
<tr>
<td>G &amp; S SERVICES INC</td>
<td>225 N BEND BLVD N</td>
<td>R77 / 12</td>
<td>168</td>
</tr>
<tr>
<td>WALLACE WARREN A</td>
<td>FIRST &amp; BALLARD</td>
<td>79 / 12</td>
<td>169</td>
</tr>
<tr>
<td>WYRSCH GEORGE A JR</td>
<td>221 1ST AVE E</td>
<td>X89 / 12</td>
<td>176</td>
</tr>
<tr>
<td>WYRSCH GEORGE G</td>
<td>225 1ST AVE E</td>
<td>X90 / 12</td>
<td>176</td>
</tr>
<tr>
<td>WYRSCH GEORGE G</td>
<td>225 EAST NORTH BEND</td>
<td>X94 / 12</td>
<td>178</td>
</tr>
<tr>
<td>NORTH BEND CHEVRON</td>
<td>302 N BEND BLVD N</td>
<td>W97 / 12</td>
<td>191</td>
</tr>
<tr>
<td>GRINA DONALD D</td>
<td>417 1ST AVE E</td>
<td>AC117 / 12</td>
<td>222</td>
</tr>
<tr>
<td>STANDARD SERVICES &amp;</td>
<td>520 E NORTH BAND WAY</td>
<td>AH136 / 12</td>
<td>242</td>
</tr>
<tr>
<td>MOUNT SI TEXACO</td>
<td>742 SW MT SI BLVD</td>
<td>AM162 / 12</td>
<td>269</td>
</tr>
<tr>
<td>G &amp; S SERVICES INC</td>
<td>745 SW MT SI BLVD</td>
<td>AN166 / 12</td>
<td>278</td>
</tr>
<tr>
<td>TRANSMISSIONS PLUS I</td>
<td>1130 E NORTH BEND WA</td>
<td>AS185 / 13</td>
<td>319</td>
</tr>
<tr>
<td>NORTH BEND 76</td>
<td>721 SW MT SI BLVD</td>
<td>AU190 / 12</td>
<td>321</td>
</tr>
<tr>
<td>RONS AUTO SERVICE</td>
<td>42620 SE NORTH BEND</td>
<td>AZ217 / 18</td>
<td>370</td>
</tr>
</tbody>
</table>

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there are 4 EDR Hist Cleaner sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>FALLS LAUNDRY INC</td>
<td>125 E NORTH BEND WAY</td>
<td>U78 / 12</td>
<td>168</td>
</tr>
<tr>
<td>NORTH BEND CLEANERS</td>
<td>400 E NORTH BEND WAY</td>
<td>AC111 / 12</td>
<td>213</td>
</tr>
<tr>
<td>MOUNTSIDE DRY CLEANE</td>
<td>412 MAIN AVE S</td>
<td>AF128 / 12</td>
<td>238</td>
</tr>
<tr>
<td>ANDRES DRYCLEANER</td>
<td>458 SW MT SI BLVD</td>
<td>AR173 / 12</td>
<td>284</td>
</tr>
</tbody>
</table>

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

WA RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

A review of the WA RGA HWS list, as provided by EDR, has revealed that there are 7 WA RGA HWS sites.
within the requested target property.

### WA RGA LF: Recovered Government Archive Solid Waste Facilities List

A review of the WA RGA LF list, as provided by EDR, has revealed that there is 1 WA RGA LF site within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH BEND WWTP</td>
<td>400 BENDIGO BOULEVAR</td>
<td>C11 / 12</td>
<td>84</td>
</tr>
</tbody>
</table>

### WA RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

A review of the WA RGA LUST list, as provided by EDR, has revealed that there are 19 WA RGA LUST sites within the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTH BEND COMMUNITY</td>
<td>126 E 4TH</td>
<td>E26 / 12</td>
<td>103</td>
</tr>
<tr>
<td>NORTH BEND COMMUNITY</td>
<td>126 E 4TH</td>
<td>E27 / 12</td>
<td>103</td>
</tr>
<tr>
<td>BRYANS ONE STOP</td>
<td>302 W NORTH BEND WAY</td>
<td>I37 / 12</td>
<td>109</td>
</tr>
<tr>
<td>BRYAN'S ONE STOP</td>
<td>302 W NORTH BEND WAY</td>
<td>I39 / 12</td>
<td>116</td>
</tr>
<tr>
<td>NORTH BEND TESORO</td>
<td>302 W NORTH BEND WAY</td>
<td>I40 / 12</td>
<td>117</td>
</tr>
<tr>
<td>RESIDENCE E 3RD ST</td>
<td>349 E 3RD ST</td>
<td>S69 / 12</td>
<td>160</td>
</tr>
<tr>
<td>VIRGINIA MASON CLINI</td>
<td>248 MAIN AVE S</td>
<td>V85 / 12</td>
<td>173</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Page Numbers and Map Identifications refer to the EDR Area/Corridor Report where detailed data on individual sites can be reviewed.

Sites listed in bold italics are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.
STANDARD ENVIRONMENTAL RECORDS

**Federal RCRA generators list**
RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

A review of the RCRA-VSQG list, as provided by EDR, and dated 12/16/2019 has revealed that there is 1 RCRA-VSQG site within approximately 0.25 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENIE INDUSTRIES NOR</td>
<td>47020 SE 144TH ST</td>
<td>E 1/8 - 1/4 (0.174 mi.)</td>
<td>CM384 / 20</td>
<td>596</td>
</tr>
</tbody>
</table>

**State- and tribal - equivalent CERCLIS**
WA CSCSL: Confirmed and Suspected Contaminated Sites List

A review of the WA CSCSL list, as provided by EDR, and dated 10/15/2019 has revealed that there is 1 WA CSCSL site within approximately 1 mile of the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHULTZ DISTRIBUTING</td>
<td>9120 BOALCH AVE SE</td>
<td>W 1/2 - 1 (0.738 mi.)</td>
<td>398 / 7</td>
<td>624</td>
</tr>
<tr>
<td>Site Status: Awaiting Cleanup</td>
<td>Clean Up Siteid: 3277</td>
<td>Clean Up Siteid: 11908</td>
<td>Facility ID: 2449</td>
<td>Facility ID: 51367681</td>
</tr>
<tr>
<td>Soil: Suspected</td>
<td>Soil: Confirmed Above Cleanup Levels</td>
<td>Ground Water: Confirmed Above Cleanup Levels</td>
<td>Contaminant Name: Petroleum Products-Unspecified</td>
<td>Contaminant Name: Petroleum-Diesel</td>
</tr>
<tr>
<td>Surface Water: Suspected</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**State and tribal landfill and/or solid waste disposal site lists**
WA SWF/LF: Solid Waste Facility Database

A review of the WA SWF/LF list, as provided by EDR, has revealed that there are 2 WA SWF/LF sites within approximately 0.5 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORTHFORK ENTERPRISE</td>
<td>7830 NORTHFORK RD</td>
<td>N 1/4 - 1/2 (0.330 mi.)</td>
<td>391 / 3</td>
<td>618</td>
</tr>
<tr>
<td>Database: SWF/LF, Date of Government Version: 12/04/2019</td>
<td>Facility Type: Pile of Inert Waste (exempt)</td>
<td>Facility Type: Recycling (non-regulated)</td>
<td>Facility ID: 2129</td>
<td></td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Facility ID: 2130
Permit Status: Exempt
Permit Status: Permit Not Required

**CADMAN INC NORTH BEN** 47320 SE GROUSE RIDGE
Database: SWF/LF, Date of Government Version: 12/04/2019
Facility Type: Material Recovery Facility (exempt)
Facility ID: 3499

**State and tribal leaking storage tank lists**
WA LUST: Leaking Underground Storage Tanks Site List

A review of the WA LUST list, as provided by EDR, has revealed that there are 2 WA LUST sites within approximately 0.5 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CASCADE AUTOVON COMP</strong></td>
<td>12727 412TH AVE SE</td>
<td>S 0 - 1/8 (0.060 mi.)</td>
<td>CF364 / 17</td>
<td>542</td>
</tr>
<tr>
<td>Database: LUST, Date of Government Version: 11/11/2019</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Release Date: 06/20/1991</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LUST Date: 08/09/2018</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility Status: LUST - NFA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ground Water: Below Cleanup Levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanup Site ID: 8879</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil: Remediated-Below</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility ID: 36296841</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>KENS TRUCK STOP</strong></th>
<th>46630 SE NORTH BEND</th>
<th>S 1/8 - 1/4 (0.132 mi.)</th>
<th>CK377 / 25</th>
<th>583</th>
</tr>
</thead>
<tbody>
<tr>
<td>Database: LUST, Date of Government Version: 11/11/2019</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Release Date: 01/08/1999</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LUST Date: 10/03/2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility Status: LUST - NFA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cleanup Site ID: 5117</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soil: Confirmed Above Cleanup Levels</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility ID: 2484</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**State and tribal registered storage tank lists**
WA UST: Underground Storage Tank Database

A review of the WA UST list, as provided by EDR, and dated 11/11/2019 has revealed that there are 6 WA UST sites within approximately 0.25 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PETROCARD INC</strong></td>
<td>14420 468TH AVE SE</td>
<td>ESE 0 - 1/8 (0.030 mi.)</td>
<td>CE360 / 20</td>
<td>537</td>
</tr>
<tr>
<td>Facility ID: 60598662</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tank Status: Operational</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site Id: 101515</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>CASCADE AUTOVON COMP</strong></th>
<th>12727 412TH AVE SE</th>
<th>S 0 - 1/8 (0.060 mi.)</th>
<th>CF364 / 17</th>
<th>542</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility ID: 36296841</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TC5992688.2s EXECUTIVE SUMMARY 36
## Executive Summary

Tank Status: Removed  
Tank Closure Date: 01/04/2007  
Site Id: 97430

**WARRIOR’S QUICK STOP**  
Facility ID: 2698893  
Tank Status: Operational  
Site Id: 394525

**NORTH BEND B530350/N**  
Facility ID: 32493584  
Tank Status: Removed  
Site Id: 10117

**HPT TA PROPERTIES TR**  
Facility ID: 2484  
Tank Status: Operational  
Site Id: 2885

**HPT TA PROPERTIES TR**  
Facility ID: 3771329  
Tank Status: Operational  
Site Id: 2885

### State and tribal voluntary cleanup sites

#### WA VCP: Voluntary Cleanup Program Sites

A review of the WA VCP list, as provided by EDR, and dated 10/15/2019 has revealed that there is 1 WA VCP site within approximately 0.5 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASCADE AUTOVON CO 12727 412TH AVE SE SSE 0 - 1/8 (0.067 mi.) CF365 / 17 547</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### WA ICR: Independent Cleanup Reports

A review of the WA ICR list, as provided by EDR, and dated 12/01/2002 has revealed that there is 1 WA ICR site within approximately 0.5 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CASCADE AUTOVON COMP 12727 412TH AVE SE SSE 0 - 1/8 (0.060 mi.) CF364 / 17 542</td>
<td>6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY

Date Ecology Received Report: 10/02/92
Date Ecology Received Report: 01/28/93
*Additional key fields are available in the Map Findings section
Media Contaminated: GW,S
Media Contaminated: GW
Media Contaminated: S

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites
WA ALLSITES: Facility/Site Identification System Listing

A review of the WA ALLSITES list, as provided by EDR, and dated 10/29/2019 has revealed that there are 29 WA ALLSITES sites within approximately 0.5 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMITTYS TOWING AUTO</td>
<td>42998 SE NORTH BEND</td>
<td>0 - 1/8 (0.001 mi.)</td>
<td>356 / 18</td>
<td>531</td>
</tr>
<tr>
<td>SYSTEM TRANSPORT DIE</td>
<td>NWC 468TH AVE SE &amp; S</td>
<td>E 0 - 1/8 (0.003 mi.)</td>
<td>357 / 20</td>
<td>531</td>
</tr>
<tr>
<td>KING CNTY DOT 468TH</td>
<td>468TH AVE SE CROSSIN</td>
<td>N 0 - 1/8 (0.005 mi.)</td>
<td>358 / 20</td>
<td>532</td>
</tr>
<tr>
<td>NEW SKY LLC</td>
<td>12700 412TH AVE SE</td>
<td>S 0 - 1/8 (0.024 mi.)</td>
<td>359 / 17</td>
<td>536</td>
</tr>
<tr>
<td>PETROCARD INC</td>
<td>14420 468TH AVE SE</td>
<td>ESE 0 - 1/8 (0.030 mi.)</td>
<td>CE362 / 20</td>
<td>540</td>
</tr>
<tr>
<td>CASCADE AUTOVON COMP</td>
<td>12727 412TH AVE SE</td>
<td>S 0 - 1/8 (0.060 mi.)</td>
<td>CF364 / 17</td>
<td>542</td>
</tr>
<tr>
<td>KEN ROGERS</td>
<td>14500 468TH AVE SE</td>
<td>SSE 0 - 1/8 (0.067 mi.)</td>
<td>CG367 / 25</td>
<td>550</td>
</tr>
<tr>
<td>GENIE TEREX STORAGE</td>
<td>46925 SE MIDDLE FORK</td>
<td>E 0 - 1/8 (0.089 mi.)</td>
<td>CH368 / 20</td>
<td>552</td>
</tr>
<tr>
<td>NORTH BEND CITYRIBAR</td>
<td>E RIBARY WAY</td>
<td>S 0 - 1/8 (0.094 mi.)</td>
<td>370 / 17</td>
<td>570</td>
</tr>
<tr>
<td>NORTH BEND B530350/N</td>
<td>12805 412TH AVE SE</td>
<td>S 0 - 1/8 (0.095 mi.)</td>
<td>CI372 / 17</td>
<td>574</td>
</tr>
<tr>
<td>LOOP VEHICLE MAINTEN</td>
<td></td>
<td>ESE 0 - 1/8 (0.115 mi.)</td>
<td>373 / 20</td>
<td>577</td>
</tr>
<tr>
<td>SI VIEW METROPOLITAN</td>
<td>901 BENDIGO BLVD N</td>
<td>N 0 - 1/8 (0.117 mi.)</td>
<td>CJ375 / 12</td>
<td>579</td>
</tr>
<tr>
<td>TOLLGATE FARM PARK T</td>
<td></td>
<td>N 1/8 - 1/4 (0.128 mi.)</td>
<td>376 / 12</td>
<td>583</td>
</tr>
<tr>
<td>TRAVEL CENTERS OF AM</td>
<td>46630 NORTH BEND WAY</td>
<td>S 1/8 - 1/4 (0.132 mi.)</td>
<td>CK378 / 25</td>
<td>584</td>
</tr>
</tbody>
</table>
WA CSCSL NFA: Confirmed & Contaminated Sites - No Further Action

A review of the WA CSCSL NFA list, as provided by EDR, and dated 10/15/2019 has revealed that there are 3 WA CSCSL NFA sites within approximately 0.5 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Direction / Distance</th>
<th>Map ID / Focus Map(s)</th>
<th>Page</th>
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<tbody>
<tr>
<td>SYSTEM TRANSPORT DIE</td>
<td>NWC 468TH AVE SE &amp; S</td>
<td>E 0 - 1/8 (0.003 mi.)</td>
<td>357 / 20</td>
<td>531</td>
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<td>CS Id: 11833</td>
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<tr>
<td>Facility/Site Id: 13893</td>
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<td>Soil: Remediated-Below</td>
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<td>NFA Date: 03/30/2012</td>
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<td>Contaminant Name: Petroleum-Diesel</td>
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<td>CASCADE AUTOVON COMP</td>
<td>12727 412TH AVE SE</td>
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<td>CF364 / 17</td>
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<td>CS Id: 8879</td>
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EXECUTIVE SUMMARY

Facility/Site Id: 36296841
Soil: Remediated-Below
NFA Date: 08/09/2018
Groundwater: Below Cleanup Levels
Contaminant Name: Petroleum-Diesel

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/16/2019 has revealed that there are 3 RCRA NonGen / NLR sites within approximately 0.25 miles of the requested target property.

<table>
<thead>
<tr>
<th>Site</th>
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<th>Direction / Distance</th>
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<tr>
<td>KING CNTY DOT 468TH</td>
<td>468TH AVE SE CROSSIN</td>
<td>N 0 - 1/8 (0.005 mi.)</td>
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<tr>
<td>AT&amp;T CORP 412TH</td>
<td>12805 412TH AVE SE</td>
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<td>901 BENDIGO BLVD N</td>
<td>N 0 - 1/8 (0.117 mi.)</td>
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WA MANIFEST: Hazardous Waste Manifest Data

A review of the WA MANIFEST list, as provided by EDR, and dated 03/29/2019 has revealed that there are 3 WA MANIFEST sites within approximately 0.25 miles of the requested target property.

<table>
<thead>
<tr>
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<td>N 0 - 1/8 (0.005 mi.)</td>
<td>358 / 20</td>
<td>532</td>
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<tr>
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<td>GENIE INDUSTRIES NOR</td>
<td>47020 SE 144TH ST</td>
<td>E 1/8 - 1/4 (0.174 mi.)</td>
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EDR HIGH RISK HISTORICAL RECORDS

*EDR Exclusive Records*

EDR Hist Auto: EDR Exclusive Historical Auto Stations

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there are 3 EDR Hist Auto sites within approximately 0.125 miles of the requested target property.

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<tr>
<td>EDGEWICK VLG TEXACO</td>
<td>14420 468TH AVE SE</td>
<td>ESE 0 - 1/8 (0.030 mi.)</td>
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# MAPPED SITES SUMMARY

**Target Property:**

**CITY OF NORTH BEND WELL HEAD PROTECTION PLAN**

**NORTH BEND, WA 98045**

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<th>DATABASE ACRONYMS</th>
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<td>SCHLOCK PIT</td>
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</tbody>
</table>
## MAPPED SITES SUMMARY

**Target Property:**

CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA  98045

<table>
<thead>
<tr>
<th>MAP ID / FOCUS MAP</th>
<th>SITE NAME</th>
<th>ADDRESS</th>
<th>DATABASE ACRONYMS</th>
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### MAPPED SITES SUMMARY

**Target Property:**
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA 98045

<table>
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<th>MAP ID / FOCUS MAP</th>
<th>SITE NAME</th>
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## MAPPED SITES SUMMARY

### Target Property:
**CITY OF NORTH BEND WELL HEAD PROTECTION PLAN**
**NORTH BEND, WA 98045**

<table>
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<tr>
<th>MAP ID / FOCUS MAP</th>
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# Mapped Sites Summary

**Target Property:**

CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA 98045

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### Mapped Sites Summary

**Target Property:**
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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## MAPPED SITES SUMMARY

**Target Property:**
**CITY OF NORTH BEND WELL HEAD PROTECTION PLAN**
**NORTH BEND, WA 98045**

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# Mapped Sites Summary

**Target Property:**
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA  98045

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**State and tribal registered storage tank lists**

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**State and tribal voluntary cleanup sites**

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**Local Land Records**

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**Records of Emergency Release Reports**

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### EDR HIGH RISK HISTORICAL RECORDS

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#### Exclusive Recovered Govt. Archives

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- Totals --

|                  | 511                     | 29              | 13    | 12        | 1         | 0       | 566 |

### NOTES:

- TP = Target Property
- NR = Not Requested at this Search Distance
- Sites may be listed in more than one database
Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA 98045

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NO MAPPED SITES FOUND
Target Property:  
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA  98045

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NO MAPPED SITES FOUND
Target Property:  
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA  98045

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NORTH BEND, WA  98045

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NORTH BEND, WA  98045

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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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NO MAPPED SITES FOUND
Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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NORTH BEND, WA  98045

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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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Target Property:  
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA  98045

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NO MAPPED SITES FOUND
### MAPPED SITES SUMMARY - FOCUS MAP 11

**Target Property:**
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA 98045

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### MAPPED SITES SUMMARY - FOCUS MAP 12

**Target Property:**
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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### Mapped Sites Summary - Focus Map 12

**Target Property:**
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA 98045

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## MAPPED SITES SUMMARY - FOCUS MAP 12

**Target Property:**
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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### Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA  98045

### MAPPED SITES SUMMARY - FOCUS MAP 12

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Target Property:  
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA  98045

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## Target Property:
**CITY OF NORTH BEND WELL HEAD PROTECTION PLAN**  
NORTH BEND, WA  98045

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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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NO MAPPED SITES FOUND
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NO MAPPED SITES FOUND
### MAPPED SITES SUMMARY - FOCUS MAP 17

**Target Property:**
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA 98045

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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA 98045
# MAPPED SITES SUMMARY - FOCUS MAP 18

## Target Property:
**CITY OF NORTH BEND WELL HEAD PROTECTION PLAN**  
NORTH BEND, WA  98045

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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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### MAPPED SITES SUMMARY - FOCUS MAP 19

**Target Property:**  
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN  
NORTH BEND, WA 98045

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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA  98045

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NO MAPPED SITES FOUND
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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA 98045

MAP ID / FOCUS MAP  SITE NAME  ADDRESS  DATABASE ACRONYMS  DIST (ft. & mi.)  DIRECTION
387 / 24  PEARCE INFILTRATION  14744 447TH AVE SE  WA ALLSITES  1405  0.266  South
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<td>KENS TRUCK STOP</td>
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<td>WA SWF/LF, WA ALLSITES, WA NPDES</td>
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Target Property:
CITY OF NORTH BEND WELL HEAD PROTECTION PLAN
NORTH BEND, WA 98045
### Site 1 of 2 in cluster A

**Actual:**
- **434 ft.**

**Focus Map:**
- **8**

**Target**
- 8621 436TH PL SE - SITTING IN FRONT OF T

**Property**
- NORTH BEND, WA

**SPILLS:**
- **Name:** UNKNOWN
- **Address:** 8621 436TH PL SE - SITTING IN FRONT OF T
- **City, State, Zip:** NORTH BEND, WA
- **Facility ID:** 520698
- **Medium:** Not reported
- **Material Desc:** CHEMICAL
- **Material Qty:** 1
- **Material Units:** CYLINDER
- **Date Received:** 08/28/2001
- **Contact Name:** Not reported
- **Incident Date:** Not reported
- **Incident Category Type:** Not reported
- **Incident Category:** Not reported
- **Latitude:** Not reported
- **Longitude:** Not reported
- **Source Type:** Not reported
- **Source:** Not reported
- **Vessel Facility Name2:** Not reported
- **Recovered Quantity:** Not reported
- **Resp Party Contact:** Not reported
- **Cause:** Not reported
- **Cause Type:** Not reported
- **Resp Party Name:** Not reported

### Site 2 of 2 in cluster A

**Actual:**
- **434 ft.**

**Focus Map:**
- **8**

**Target**
- 8621 436TH PL SE - SITTING IN FRONT OF T

**Property**
- NORTH BEND, WA

**HIST CDL:**
- **Facility ID:** 21076
- **Tax ID Number:** 35240890270
- **Contamination Date:** Not reported
- **Remediation Date:** 2/27/2002

**SPILLS:**
- **Name:** UNKNOWN
- **Address:** 8621 436TH PL SE
- **City, State, Zip:** NORTH BEND, WA
- **Facility ID:** 516273
- **Medium:** Not reported
- **Material Desc:** CHEMICAL
- **Material Qty:** Not reported
- **Material Units:** Not reported
- **Date Received:** 02/13/2001
- **Contact Name:** Not reported
- **Incident Date:** Not reported
- **Incident Category Type:** Not reported
- **Incident Category:** Not reported
- **Latitude:** Not reported
- **Longitude:** Not reported
- **Source Type:** Not reported
- **Source:** Not reported
- **Vessel Facility Name2:** Not reported
- **Recovered Quantity:** Not reported
- **Resp Party Contact:** Not reported
- **Cause:** Not reported
- **Cause Type:** Not reported
- **Resp Party Name:** Not reported
UNKNOWN (Continued)  
Source Type:  Not reported
Source:  Not reported
Vessel Facility Name2:  Not reported
Recovered Quantity:  Not reported
Resp Party Contact:  Not reported
Cause:  Not reported
Cause Type:  Not reported
Resp Party Name:  Not reported

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| Site 1 of 3 in cluster B

Actual:  424 ft.
Focus Map:  8

NPDES:
Name:  SHAKE MILL LEFT BANK REVETMENT
Address:  8716 428TH AVE SE
City, State, Zip:  NORTH BEND, WA 98045
Facility Status:  Not reported
Facility Type:  Construction SW GP
Admin Region:  Headquarters
Date Issued:  11/18/2015
Latitude:  Not reported
Longitude:  Not reported
Permit ID:  WAR307879
Permit Version:  Not reported
Permit Status:  Active
Permit SubStatus:  Not reported
Ecology Contact:  Not reported
WRIA:  Not reported
Permit Expiration Date:  12/31/2020
Effective Date:  05/08/2019
Days to Expiration:  -443

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<tr>
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</table>
| Site 2 of 3 in cluster B

Actual:  424 ft.
Focus Map:  8

Interaction:  55957
Interaction 1:  I
Interaction 2:  HWG
Ecology Program:  HAZWASTE
Program Data:  TURBOWASTE
Facility Alt.:  Not reported
Program ID:  WAR000008532
KING CNTY NORTH FORK BRG 122I (Continued) 1001092199

Date Interaction: 1996-03-20 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.521474325
Longitude: -121.769405218

RCRA NonGen / NLR:
Date form received by agency: 1998-03-05 00:00:00.0
Facility name: KING CNTY NORTH FORK BRG 122I
Facility address: T24N R83 S34
EPA ID: WAR000008532
Mailing address: 400 YESLER WAY RM 400
Contact: JERRY DAHL
Contact address: 400 YESLER WAY RM 400
Contact telephone: 206-296-6575
EPA Region: 10
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: KING CNTY
Owner/operator address: 400 YESLER WAY RM 400
Owner/operator telephone: 206-296-6575
Owner/operator country: US
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KING CNTY
Owner/operator address: 400 YESLER WAY RM 400
Owner/operator telephone: 206-296-6575
Owner/operator country: US
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KING CNTY
Owner/operator address: 400 YESLER WAY RM 400
Owner/operator telephone: 206-296-6575
Owner/operator country: US
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported
KING CNTY NORTH FORK BRG 122I (Continued) 1001092199

Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 1997-01-13 00:00:00.
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 1998-03-05 00:00:00.0
Site name: KING CNTY NORTH FORK BRG 122I
Classification: Not a generator, verified

Date form received by agency: 1998-03-04 00:00:00.0
Site name: KING CNTY NORTH FORK BRG 122I
Classification: Not a generator, verified

Date form received by agency: 1998-03-03 00:00:00.0
Site name: KING CNTY NORTH FORK BRG 122I
Classification: Not a generator, verified

Date form received by agency: 1996-03-20 00:00:00.0
Site name: KING CNTY NORTH FORK BRG 122I
Classification: Not a generator, verified

Violation Status: No violations found
Site 3 of 3 in cluster B

Actual: 424 ft.
Focus Map: 8

Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
EnvId: 1016262452
Registry ID: 110008227846
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110008227846

PREVIOUS OWNER

Target: 43404 SE 92ND ST.
Property: NORTH BEND, WA

SPILLS:
Name: PREVIOUS OWNER
Address: 43404 SE 92ND ST.
City, State, Zip: NORTH BEND, WA
Facility ID: 425909
Medium: Not reported
Material Desc: PETROLEUM - OIL OTHER
Material Qty: 84
Date Received: 01/14/1997
Contact Name: STRANIK
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Resp Party Name: Not reported
7
Target Property
9027 428TH AVENUE SE DINING ROOM (#5)
NORTH BEND, WA

ASBESTOS:
Name: Not reported
Address: 9027 428TH AVENUE SE DINING ROOM (#5)
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 70432##1359InHou363506
Notice Date: 04/15/2013
Start Date: 05/09/2013
Completion Date: 05/09/2013
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: Not reported
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported

MAP FINDINGS

Mapping

7

WA ASBESTOS
S125607393
N/A
(Continued)

Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: Not reported
Notice type: Initial
Project Type: Other Square Footage, Vinyl Asbestos Tile
Supervisor: Katea Kinahoi
Supervisor Phone: Not reported
Certificate Status: Not reported

Name: Not reported
Address: 9027 428TH AVENUE SE DINING ROOM (#5)
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 71309#1359InHou094730
Notice Date: 05/09/2013
Start Date: 05/06/2013
Completion Date: 05/08/2013
Initial: Not reported
Amended: Not reported
On Hold: Not reported
(Continued)

Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: Not reported
Notice type: Initial
Project Type: Other Square Footage, Vinyl Asbestos Tile
Supervisor: Katea Kinahoi ()
Supervisor Phone: Not reported
Certificate Status: Not reported

8 SCHLOCK PIT MINES MRDS 1025660943 N/A

TARGET PROPERTY NORTH BEND, WA 98045

MINES MRDS:
Name: SCHLOCK PIT
Address: Not reported
Deposit identification Number: 10179932
City,State,Zip: NORTH BEND, WASHINGTON 98045
URL: https://mrdata.usgs.gov/mrds/show-mrds.php?dep_id=10179932
MRDS Identification Number: Not reported
MAS/MILS Identification Number: 053030294
Region: NA
Country: United States
Primary Commodities: Sand and Gravel, Construction
Secondary Commodities: Not reported
Tertiary Commodities: Not reported
Operation Type: Surface
Deposit Type: Not reported
Production Size: Not reported
Development Status: Past Producer
Ore Minerals or Materials: Not reported
Gangue Minerals or Materials: Not reported
Other Minerals or Materials: Not reported
Ore Body Form: Not reported
Working Type: Not reported
Mineral Deposit Model: Not reported
Alteration Processes: Not reported
SCHLOCK PIT (Continued)

<table>
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<tr>
<td>Previous Names:</td>
<td>Schlock</td>
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<tr>
<td>Ore Controls:</td>
<td>Not reported</td>
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<tr>
<td>Reporter:</td>
<td>Ridenour, James</td>
</tr>
<tr>
<td>Host Rock Unit Name:</td>
<td>Not reported</td>
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<tr>
<td>Host Rock Type:</td>
<td>Not reported</td>
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<tr>
<td>First Production Year:</td>
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<tr>
<td>Began Before/After FPY:</td>
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<tr>
<td>Last Production Year:</td>
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<tr>
<td>Ended Before/After LPY:</td>
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<tr>
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<tr>
<td>Found Before/After YD:</td>
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<tr>
<td>Production History:</td>
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<tr>
<td>Longitude:</td>
<td>-121.77181</td>
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MINES MRDS:

Name: ANNIE

Address: Not reported
Deposit identification Number: 1025660943
City, State, Zip: NORTH BEND, WASHINGTON 98045
URL: https://mrdata.usgs.gov/mrds/show-mrds.php?dep_id=1025660943

MNES MRDS:

Name: ANNIE

Address: Not reported
Deposit identification Number: 1025753185
City, State, Zip: NORTH BEND, WASHINGTON 98045
URL: https://mrdata.usgs.gov/mrds/show-mrds.php?dep_id=1025753185

Country: United States
Primary Commodities: Copper
Secondary Commodities: Gold, Silver
Tertiary Commodities: Not reported
Operation Type: Unknown
Deposit Type: Not reported
Production Size: Not reported
Development Status: Unknown
Ore Minerals or Materials: Not reported
Gangue Minerals or Materials: Not reported
Other Minerals or Materials: Not reported
Ore Body Form: Not reported
Workings Type: Not reported
Mineral Deposit Model: Not reported
Alteration Processes: Not reported
Concentration Processes: Not reported
Previous Names: Not reported
Ore Controls: Not reported
Reporter: Ridenour, James
Host Rock Unit Name: Not reported
Host Rock Type: Not reported
Associated Rock Unit Name: Not reported
Associated Rock Type Code: Not reported
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<tr>
<th>Site 1 of 4 in cluster C</th>
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<tbody>
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<td>Actual: 436 ft.</td>
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<td>Focus Map: 12</td>
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### ANNIE (Continued)

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### C10 Target Property

**NORTH BEND TREATMENT PLANT**

**NORTH BEND, WA**

### WA SPILLS

**EDR ID Number**

**Database(s)**

**EPA ID Number**

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<table>
<thead>
<tr>
<th>Name:</th>
<th>NORTH BEND TREATMENT PLANT</th>
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</thead>
<tbody>
<tr>
<td>City, State, Zip:</td>
<td>NORTH BEND, WA</td>
</tr>
<tr>
<td>Facility ID:</td>
<td>86110</td>
</tr>
<tr>
<td>Medium:</td>
<td>Land</td>
</tr>
<tr>
<td>Material Description:</td>
<td>Sewage/Sludge</td>
</tr>
<tr>
<td>Material Quantity:</td>
<td>1500</td>
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<tr>
<td>Date Received:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Contact Name:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Incident Date:</td>
<td>12/28/2015</td>
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<tr>
<td>Incident Category Type:</td>
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<td>Incident Category:</td>
<td>Other Non-Oil</td>
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<td>Recovered Quantity:</td>
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<td>Resp Party Contact:</td>
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<td>Cause:</td>
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<td>Resp Party Name:</td>
<td>NORTH BEND TREATMENT PLANT</td>
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<table>
<thead>
<tr>
<th>Name:</th>
<th>NORTH BEND TREATMENT PLANT</th>
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<td>Medium:</td>
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<td>Material Description:</td>
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<td>Date Received:</td>
<td>Not reported</td>
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<tr>
<td>Incident Date:</td>
<td>12/28/2015</td>
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<td>Incident Category Type:</td>
<td>Non Oil</td>
</tr>
<tr>
<td>Incident Category:</td>
<td>Other Non-Oil</td>
</tr>
</tbody>
</table>
Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs. US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality. RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and
NORTH BEND STP (Continued)

Corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Env: 1004614125
Registry ID: 110006684882
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110006684882

C13 NORTH BEND WASTEWATER TREATMENT PLANT WA SWF/LF S110336094
Target 400 BENDIGO BLVD N WA ALLSITES N/A
Property NORTH BEND, WA 98045 WA NPDES

Site 4 of 4 in cluster C

Actual: 435 ft.
Focus Map: 12

SWF/LF:
Name: NORTH BEND WWTP
Address: 400 BENDIGO BOULEVARD NORTH
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 325
Region: STATE
Permit Status: Not reported
Contact Organization: Not reported
Contact Address1: PO BOX 896
Contact Address2: Not reported
Contact City: NORTH BEND
Contact State: WA
Contact Postal: 98045
Contact EMail: ddeberg@northbendwa.gov
Contact Phone: Not reported
Contact Phone Ext: Not reported
Permit No: Not reported
Phone: Not reported
Operator Name: Not reported
Operator Organization: Not reported
Operator EMail: Not reported
Operator Title: Not reported
Recycle Survey Code: Not reported
Ownership: PUBLIC
Facility Type: Biosolids Management
Contact Name: Donald DeBerg
Contact Title: Not reported
Year Closed: No
Open to Public Flag: No
Website: Not reported
Latitude: 47.49926
Longitude: -121.78679

ALLSITES:
Name: NORTH BEND WASTEWATER TREATMENT PLANT
Facility Id: 56772

NPDES:
Name: NORTH BEND WASTEWATER TREATMENT PLANT
Address: 400 BENDIGO BLVD N
City, State, Zip: NORTH BEND, WA 98045
NORTH BEND WASTEWATER TREATMENT PLANT (Continued)

Facility Status: Not reported
Facility Type: Construction SW GP
Admin Region: Headquarters
Date Issued: 11/18/2015
Latitude: Not reported
Longitude: Not reported
Permit ID: WAR306843
Permit Version: Not reported
Permit Status: Active
Permit SubStatus: Not reported
Ecology Contact: Not reported
WRIA: Not reported
Permit Expiration Date: 12/31/2020
Effective Date: 08/06/2018
Days to Expiration: -443

14 NORTH BEND CITY OF
Target 400 NORTHBEND BLVD N
Property NORTH BEND, WA 98048

UST:
Name: NORTH BEND CITY OF
Address: 400 NORTHBEND BLVD N
City: NORTH BEND
Zip: 98048
Facility ID: 38121329
Site Id: 10583
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.499021
Decimal Longitude: -121.78533

Tank Name: 1
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Steel
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported
NORTH BEND CITY OF (Continued) U004251551

Name: NORTH BEND CITY OF
Address: 400 NORTHBEND BLVD N
City: NORTH BEND
Zip: 98048

Tank Name: 2
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND CITY OF
Address: 400 NORTHBEND BLVD N
City: NORTH BEND
Zip: 98048

Tank Name: ONE
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 07/17/1979
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Single Wall Tank
Tank Construction: Annual
Tank Tightness Test: None
Tank Corrosion Protection: Not reported
Tank Manifold: Manual Inventory Control (daily)
Tank Release Detection: None
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Single Wall Pipe
NORTH BEND CITY OF (Continued)  U004251551

Pipe Primary Release Detection: Safe Suction (No Leak Detection)
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Sacrificial Anode
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

15  NORTH BEND WWTP  WA ALLSITES  S110276046
Target 400 BENDIGO  N/A
Property NORTH BEND, WA  98045

ALLSITES:
Name: NORTH BEND WWTP
Facility id: 21911

Interaction: 95533
Interaction 1: A
Interaction 2: ENFORFNL
Ecology Program: SOLIDWASTE
Program Data: DMS
Facility Alt.: Not reported
Program ID: Not reported
Date Interaction: 2011-01-21 00:00:00
Date Interaction 3: Enforcement Final
Latitude: 47.498858970000001
Longitude: -121.786729607

16  NORTH BEND, WA  WA SPILLS  S110628152
Target 106 E 6TH ST  N/A
Property NORTH BEND, WA

SPILLS:
Name: Not reported
Address: 106 E 6TH ST
City, State, Zip: NORTH BEND, WA
Facility ID: 621448

Medium: SURFACE WATER-FRESH
Material Desc: OTHER - SEE NOTE
Material Qty: Not reported
Material Units: Not reported
Date Received: 07/27/2010
Contact Name: UNKNOWN
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported
Target: 356 BENDIGO BLVD N  
Property: NORTH BEND, WA  98045

Site 1 of 2 in cluster D

Actual: 437 ft.
Focus Map: 12

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (CIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO: 1012224624
Registry ID: 110040626356
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110040626356

Site 2 of 2 in cluster D

Actual: 437 ft.
Focus Map: 12

Interaction: 91553
Interaction 1: 1
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: U Lid No.6 Pump Station
Program ID: WAR011853
Date Interaction: 2010-10-23 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.498731329000002
Longitude: -121.78581122
Target: 710 MALONEY GROVE 13TH AVE SE LIVING AREA
Property: NORTH BEND, WA 98045

ASBESTOS:
Name: Not reported
Address: 710 MALONEY GROVE 13TH AVE SE LIVING AREA
City, State, Zip: NORTH BEND, WA 98045
Facility Type: SFR
Parent ID: 152627
Form ID: 152879#1427Affor584640
Notice Date: 12/13/2017
Start Date: 12/14/2017
Completion Date: 12/15/2017
Initial: Not reported
Amended: 1
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: 8:00 a.m.
Site Hours End: 2:30 p.m.
Sunday: Not reported
Monday: 1
Tuesday: 1
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: 425-512-8750
Job Site CAS: Anthony Chase
Project Form Email: ci@affenv.net
Property Owner Name: Not reported
Property Owner Agent: Ron Bowen
Property Owner Company: Affordable Environmental, Inc (ABCN00001427)
Property Owner Address: 11624 SE 5th St, Suite 200
Property Owner City: Bellevue
Property Owner State: wa
Property Owner Zip4: 98005
Property Owner Phone: 4257668579
Job Site Room: Living AREa
Facility Age: 1980’s
Facility Size: 230
Facility Remodel: Not reported
Facility Demo: 1
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 230
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: 1
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Not reported Sq Ft Other:
Not reported Sq Ft Other Text:
Not reported Quantity Lin Ft:
Not reported Mag Pipe Insulation:
Not reported Air Cell Pipe Insulation:
Not reported Ducting Insulation:
Not reported Cement Asbestos Pipe:
Not reported Muddied Pipe Insulation:
Not reported Duct Tape:
Not reported Lin Ft Other1:
Not reported Lin Ft Other1 Text:
Not reported Lin Ft Other2:
Not reported Lin Ft Other2 Text:
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: 1
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUAL METHODS: 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: 1
Other Resp Pro: 1
Other Resp Pro Text: PPE As Required
Comments: Not reported
Date Time Submitted: 2017-12-13 15:59:14
Submitter IP Address: 71.227.209.17
Region: 2
UBI: 602577245
Notice type: Initial
Project Type: Sheet Vinyl
Supervisor: Anthony Chase ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 710 MALONEY GROVE W 13TH AVE SE LIVING AREA
City, State, Zip: NORTH BEND, WA 98045
Facility Type: SFR
Parent ID: 0
Form ID: 152627##1427Affor563390
Notice Date: 12/07/2017
Start Date: 12/18/2017
Completion Date: 12/19/2017
Initial: 1
Amended: Not reported
On Hold: Not reported
(Continued)

Off Hold: Not reported
Emergency: Not reported
Site Hours Start: 8:00 a.m.
Site Hours End: 2:30 p.m.
Sunday: Not reported
Monday: 1
Tuesday: 1
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: 425-512-8750
Job Site CAS: Anthony Chase
Project Form Email: ci@affenv.net
Property Owner Name: Not reported
Property Owner Agent: Ron Bowen
Property Owner Company: Affordable Environmental, Inc (ABCN00001427)
Property Owner Address: 11624 SE 5th St, Suite 200
Property Owner City: Bellevue
Property Owner State: wa
Property Owner Zip4: 98005
Job Site Room: Living ARea
Facility Age: 1980’s
Facility Size: 230
Facility Remodel: Not reported
Facility Demo: 1
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 230
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: 1
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
### Map ID

**Direction**

**Distance**

**Elevation**

**Site**

**Database(s)**

**EDR ID Number**

**EPA ID Number**

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**MAP FINDINGS**

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**Continued**

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**20**

**Target Property**

**336 BENDIGO BLVD N**

**NORTH BEND, WA**

---

**ASBESTOS:**

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**Address:**

336 BENDIGO BLVD N

**City, State, Zip:**

NORTH BEND, WA

**Facility Type:**

Not reported

**Parent ID:**

Not reported

**Form ID:**

34313##1338Amer595749

**Notice Date:**

12/16/2009

**Start Date:**

12/15/2009

**Completion Date:**

12/31/2009

**Initial:**

Not reported

**Amended:**

Not reported

**On Hold:**

Not reported

**Off Hold:**

Not reported

**Emergency:**

Not reported

**Site Hours Start:**

Not reported

**Site Hours End:**

Not reported

**Sunday:**

Not reported

**Monday:**

Not reported

**Tuesday:**

Not reported

**Wednesday:**

Not reported

**Thursday:**

Not reported

**Friday:**

Not reported

**Saturday:**

Not reported
MAP FINDINGS

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PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 602131386
Notice type: Initial
Project Type: Roofing
Supervisor: John Asselin
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 336 BENDIGO BLVD N
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 34289#1338Amer182804
Notice Date: 12/15/2009
Start Date: 12/15/2009
Completion Date: 12/31/2009
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: American Environmental Constr (ABCN00001338)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported

MAP FINDINGS
Map ID
Direction
Distance
Elevation
Site
Database(s)
EDR ID Number
EPA ID Number

(Continued)
S125599344
(Continued)

Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
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Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
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Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
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Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 602131386
Notice type: Initial
Project Type: Roofing
(Continued)

Supervisor: John Asselin
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 336 BENDIGO BLVD N
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 34051#1338Ameri970185
Notice Date: 12/04/2009
Start Date: 12/15/2009
Completion Date: 12/31/2009
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
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Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: American Environmental Constru (ABCN00001338)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported

S125599344
Target NORTH BEND WAY SYDNEY AVE N
Property NORTH BEND, WA 98045

FINDS:
Registry ID: 110043825509
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110043825509

Actual: 443 ft.

Focus Map: 12

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a
means to query and display data maintained by the Washington
PARK AND RIDE & STREET IMPROV PROJECT (Continued) 1025806660

Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

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<th>Property</th>
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Actual: 450 ft.

Focus Map: 13

ASBESTOS:

Name: Not reported
Address: 709 NE 6TH ST
City, State, Zip: NORTH BEND, WA 98045
Facility Type: House
Parent ID: 0
Form ID: 150639#1386Super635014
Notice Date: 10/19/2017
Start Date: 11/13/2017
Completion Date: 11/14/2017
Initial: 1
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: 8am
Site Hours End: 4pm
Sunday: Not reported
Monday: 1
Tuesday: 1
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: 4254815391
Phone: 254815391
Job Site CAS: Robert Escamilla
Project Form Email: hank.shubin@coit.com
Property Owner Name: Geoff Trowbridge
Property Owner Agent: Not reported
Property Owner Company: Superior Cleaning & Restoration (ABCN00001386)
Property Owner Address: 6207 Island Crest Way
Property Owner City: Mercer Island
Property Owner State: WA
Property Owner Zip: 98040
Property Owner Phone: 206-276-8256
Job Site Room: Not reported
Facility Age: 1957
Facility Size: 1590
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 1000
Fireproofing: Not reported
Popcorn Ceiling: 1
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
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Duct Tape: Not reported
Lin Ft Other1: Not reported
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Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: 1
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: 1
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUALMETHODS: 1
Other CM1: Not reported
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Other CM2: Not reported
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Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: 1
Other Resp Pro: Not reported
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Comments: Not reported
Date Time Submitted: 2017-10-19 10:50:47
Submitter IP Address: 40.138.95.180
Region: 2
UBI: 602293355
Notice type: Initial
Project Type: Popcorn Ceiling
Supervisor: Robert Escamilla
Supervisor Phone: Not reported
Certificate Status: ACTIVE
Target: NORTH BEND COMMUNITY CENTER

Property: 126 E 4TH ST

Site 1 of 6 in cluster E

Actual: 444 ft.

Focus Map: 12

VCP:
  Name: NORTH BEND COMMUNITY CENTER
  Address: 126 E 4TH ST
  City, State, Zip: NORTH BEND, WA 98045
  edr_fstat: WA
  edr_fzip: 98045
  edr_fcnty: KING
  edr_zip: Not reported
  Facility ID: 7437936
  VCP Status: Not reported
  VCP: Not reported
  Ecology Status: Not reported
  NFA Type: Not reported
  Date NFA: Not reported
  Rank: Not reported
  Clean Up Siteid: 2389
  Contaminant Name: Petroleum Products-Unspecified
  Soil: Confirmed Above Cleanup Levels

E24 NORTH BEND COMMUNITY CENTER

Site 2 of 6 in cluster E

Actual: 444 ft.

Focus Map: 12

CSCSL:
  Name: NORTH BEND COMMUNITY CENTER
  Address: 126 E 4TH ST
  Facility ID: 7437936
  Region: Northwest
  Lat/Long: 47.497138243336 / -121.7827072154
  Clean Up Siteid: 2389
  Site Status: Cleanup Started
  Contaminant Name: Petroleum Products-Unspecified
  Alternate Site Names: Not reported
  Site Rank: Not reported
  Has Institutional Control: Not reported
  Past VCP: True
  Current VCP: Not reported
  Ground Water: Not reported
  Surface Water: Not reported
  Soil: Confirmed Above Cleanup Levels
  Sediment: Not reported
  Air: Not reported
  Bedrock: Not reported
  Responsible Unit: Northwest

ALLSITES:
  Name: NORTH BEND COMMUNITY CENTER
  Facility Id: 7437936
  Interaction: 20739
### NORTH BEND COMMUNITY CENTER (Continued)

**Interaction 1:** A  
**Interaction 2:** SCS  
**Ecology Program:** TOXICS  
**Program Data:** ISIS  
**Facility Alt.:** NORTH BEND COMMUNITY CENTER  
**Program ID:** Not reported  
**Date Interaction:** 2004-06-14 00:00:00  
**Date Interaction 3:** State Cleanup Site  
**Latitude:** 47.49713268  
**Longitude:** -121.782685242

**Interaction:** 20738  
**Interaction 1:** I  
**Interaction 2:** VOLCLNST  
**Ecology Program:** TOXICS  
**Program Data:** ISIS  
**Facility Alt.:** NORTH BEND COMMUNITY CENTER  
**Program ID:** NW0485  
**Date Interaction:** 2000-05-31 00:00:00  
**Date Interaction 3:** Voluntary Cleanup Sites  
**Latitude:** 47.49713268  
**Longitude:** -121.782685242

### FINDS:

**Registry ID:** 110015539522  
**Facility URL:** [http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015539522](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015539522)

**Environmental Interest/Information System:** Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015539522) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

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**Actual:** 444 ft.

**Focus Map:** 12

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<tr>
<td>2011</td>
<td>NORTH BEND COMMUNITY CENTER</td>
<td>126 E 4TH</td>
<td></td>
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</tr>
<tr>
<td>2010</td>
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<td>2006</td>
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<td>126 E 4TH</td>
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<tr>
<td>2005</td>
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<td>126 E 4TH</td>
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TC5992688.2s Page 102
<table>
<thead>
<tr>
<th>E26</th>
<th>NORTH BEND COMMUNITY CENTER (EXEMPT)</th>
<th>WA RGA LUST</th>
<th>S115439776</th>
<th>N/A</th>
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<tbody>
<tr>
<td>Target</td>
<td>126 E 4TH</td>
<td>N/A</td>
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</tr>
<tr>
<td>Property</td>
<td>NORTH BEND, WA</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Site 4 of 6 in cluster E

**Actual:**

- **444 ft.**

**Focus Map:**

- 12

**RGA LUST:**

- 2003 NORTH BEND COMMUNITY CENTER (EXEMPT) 126 E 4TH
- 2002 NORTH BEND COMMUNITY CENTER (EXEMPT) 126 E 4TH

<table>
<thead>
<tr>
<th>E27</th>
<th>NORTH BEND COMMUNITY CENTER</th>
<th>WA RGA LUST</th>
<th>S115439777</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target</td>
<td>126 E 4TH</td>
<td>N/A</td>
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<td></td>
</tr>
<tr>
<td>Property</td>
<td>NORTH BEND, WA</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Site 5 of 6 in cluster E

**Actual:**

- **444 ft.**

**Focus Map:**

- 12

**RGA LUST:**

- 2001 NORTH BEND COMMUNITY CENTER 126 E 4TH
- 2000 NORTH BEND COMMUNITY CENTER 126 E 4TH
- 1999 NORTH BEND COMMUNITY CENTER 126 E 4TH

<table>
<thead>
<tr>
<th>E28</th>
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<tr>
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Site 6 of 6 in cluster E

**ICR:**

- Date Ecology Received Report: 02/09/99
- Contaminants Found at Site: Petroleum products
- Media Contaminated: Soil
- Waste Management: Tank
- Region: North Western
- Type of Report Ecology Received: Interim cleanup report
- Site Register Issue: 98-13
- County Code: 17
- Contact: Not reported
- Report Title: Not reported

Date Ecology Received Report: 05/10/00
- Contaminants Found at Site: Petroleum products
- Media Contaminated: Groundwater, Soil
- Waste Management: Tank
- Region: North Western
- Type of Report Ecology Received: Interim cleanup report
- Site Register Issue: 98-28
- County Code: 17
- Contact: Not reported
- Report Title: First Quarter 2000 Ground Water Monitoring
### Site 1 of 2 in cluster F

**Target:** F29  
**Property:** NORTH BEND TESORO  
**Address:** 302 BENDIGO BLVD N  
**City, State, Zip:** NORTH BEND, WA 98045

**Actual:** 441 ft.  
**Focus Map:** 12

**Year:** 2000  
**Name:** NORTH BEND TESORO  
**Type:** Gasoline Service Stations

---

### Site 1 of 2 in cluster G

**Target:** G30  
**Property:** CAMP BROWN QUARRY  
**Address:** NORTH BEND, WA 98045

**Actual:** 439 ft.  
**Focus Map:** 12

**Name:** CAMP BROWN QUARRY  
**Address:**  
**Deposit Identification Number:** 10155843  
**City, State, Zip:** NORTH BEND, WASHINGTON 98045  
**URL:** https://mrdata.usgs.gov/mrds/show-mrds.php?dep_id=10155843

**Region:** United States  
**Country:** Stone, Dimension  
**Primary Commodities:** Not reported  
**Secondary Commodities:** Not reported  
**Tertiary Commodities:** Not reported  
**Operation Type:** Surface  
**Deposit Type:** Not reported  
**Production Size:** Past Producer  
**Development Status:** Not reported  
**Ore Minerals or Materials:** Not reported  
**Gangue Minerals or Materials:** Not reported  
**Other Minerals or Materials:** Not reported  
**Ore Body Form:** Not reported  
**Workings Type:** Not reported  
**Mineral Deposit Model:** Not reported  
**Alteration Processes:** Not reported  
**Concentration Processes:** Not reported  
**Previous Names:** Not reported  
**Ore Controls:** Not reported  
**Reporters:** Western Field Operations Center (WFOC)  
**Host Rock Unit Name:** Not reported  
**Host Rock Type:** Not reported  
**Associated Rock Unit Name:** Not reported  
**Associated Rock Type Code:** Not reported  
**Structural Characteristics:** Not reported  
**Tectonic Setting:** Not reported  
**References:** Not reported  
**First Production Year:** Not reported  
**Began Before/After FPY:** Not reported  
**Last Production Year:** Not reported  
**Ended Before/After LPY:** Not reported  
**Year Discovered:** Not reported  
**Found Before/After YD:** Not reported  
**Production History:** Not reported  
**Discovery Information:** Not reported
### CAMP BROWN QUARRY (Continued)

Latitude: 47.49701  
Longitude: -121.78591  

---

**F31 MAINLINE 100 PIT**  
**Property**: NORTH BEND, WA 98045  
**Site 2 of 2 in cluster F**

**Actual**: 441 ft.  
**Focus Map**: 12  
**MINES MRDS**: 
- **Name**: MAINLINE 100 PIT  
- **Deposit Identification Number**: 10277406  
- **City, State, Zip**: NORTH BEND, WASHINGTON 98045  
- **MAS/MILS Identification Number**: 0530331106  
- **Region**: NA  
- **Country**: United States  
- **Primary Commodities**: Stone, Dimension  
- **Secondary Commodities**: Not reported  
- **Tertiary Commodities**: Not reported  
- **Operation Type**: Surface  
- **Deposit Type**: Not reported  
- **Production Size**: Not reported  
- **Development Status**: Past Producer  
- **Ore Minerals or Materials**: Not reported  
- **Gangue Minerals or Materials**: Not reported  
- **Other Minerals or Materials**: Not reported  
- **Ore Body Form**: Not reported  
- **Workings Type**: Not reported  
- **Mineral Deposit Model**: Not reported  
- **Alteration Processes**: Not reported  
- **Concentration Processes**: Not reported  
- **Previous Names**: Not reported  
- **Ore Controls**: Not reported  
- **Host Rock Unit Name**: Not reported  
- **Host Rock Type**: Not reported  
- **Associated Rock Unit Name**: Not reported  
- **Associated Rock Type Code**: Not reported  
- **Structural Characteristics**: Not reported  
- **Tectonic Setting**: Not reported  
- **References**: Not reported  
- **First Production Year**: Not reported  
- **Began Before/After FPY**: Not reported  
- **Last Production Year**: Not reported  
- **Ended Before/After LPY**: Not reported  
- **Year Discovered**: Not reported  
- **Found Before/After YD**: Not reported  
- **Production History**: Not reported  
- **Discovery Information**: Not reported  
- **Latitude**: 47.49701  
- **Longitude**: -121.78451
H32  OLYMPUS JOB 91 3593                          WA ALLSITES  S109553770
Target  S SIDE 101ST ST 1 BLK E OF
Property  NORTH BEND, WA  98045

Site 1 of 2 in cluster H

Actual:  437 ft.
Focus Map:  12

<table>
<thead>
<tr>
<th>Interaction</th>
<th>Facility ID</th>
</tr>
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<tbody>
<tr>
<td>Interaction 1</td>
<td>27433</td>
</tr>
<tr>
<td>Interaction 2</td>
<td>HWG</td>
</tr>
<tr>
<td>Ecology Program</td>
<td>HAZWASTE</td>
</tr>
<tr>
<td>Program Data</td>
<td>TURBOWASTE</td>
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<tr>
<td>Facility Alt</td>
<td>Not reported</td>
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<tr>
<td>Program ID</td>
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<tr>
<td>Date Interaction</td>
<td>1991-08-22 00:00:00</td>
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<tr>
<td>Date Interaction 3</td>
<td>Hazardous Waste Generator</td>
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<tr>
<td>Latitude</td>
<td>47.496734551999999</td>
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<tr>
<td>Longitude</td>
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<table>
<thead>
<tr>
<th>Interaction</th>
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</thead>
<tbody>
<tr>
<td>Interaction 1</td>
<td>126179</td>
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<td>Interaction 2</td>
<td>HWOTHER</td>
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<td>47.496734551999999</td>
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<td>Longitude</td>
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H33  OLYMPUS JOB 91 3593                          FINDS  1016262152
Target  S SIDE 101ST ST 1 BLK E OF 353
Property  NORTH BEND, WA  98045

Site 2 of 2 in cluster H

Actual:  437 ft.
Focus Map:  12

<table>
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<th>Registry ID</th>
<th>Facility URL</th>
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<tbody>
<tr>
<td>110008223617</td>
<td><a href="http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110008223617">http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110008223617</a></td>
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Environmental Interest/Information System:

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS detail in the EDR Site Report.

ECHO:

Envid:  1016262152
Registry ID:  110008223617
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EDR ID Number</th>
<th>EPA ID Number</th>
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</thead>
<tbody>
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</table>

**OLYMPUS JOB 91 3593 (Continued)**

DFR URL: [http://echo.epa.gov/detailed-facility-report?fid=110008223617](http://echo.epa.gov/detailed-facility-report?fid=110008223617)

<table>
<thead>
<tr>
<th>G34</th>
<th>G &amp; S SERVICES INC</th>
<th>EDR Hist Auto</th>
<th>1021478299</th>
<th>N/A</th>
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<td>Target</td>
<td>225 BENDIGO BLVD N</td>
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<td>Property</td>
<td>NORTH BEND, WA 98045</td>
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Site 2 of 2 in cluster G

**ASBESTOS:**

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<td>Name: G &amp; S SERVICES INC</td>
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<td>Type: Gasoline Service Stations, NEC</td>
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<td>Property</td>
<td>NORTH BEND, WA 98045</td>
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**ASBESTOS:**

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<td>Address: 212 W SECOND ST THROUGHOUT</td>
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<tr>
<td>City, State, Zip: NORTH BEND, WA 98045</td>
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<tr>
<td>Facility Type: House</td>
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<tr>
<td>Parent ID: 0</td>
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<tr>
<td>Form ID: 131902#1427Affor553115</td>
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<tr>
<td>Notice Date: 09/06/2016</td>
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<td>Start Date: 09/19/2016</td>
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<td>Off Hold: Not reported</td>
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<td>Site Hours End: 3:00 PM</td>
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<td>Sunday: Not reported</td>
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<td>Monday: 1</td>
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<td>Tuesday: 1</td>
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<tr>
<td>Saturday: Not reported</td>
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<tr>
<td>Contractor ID: Not reported</td>
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</tr>
<tr>
<td>Phone: 425-512-8750</td>
<td></td>
</tr>
<tr>
<td>Job Site CAS: Anthony Chase</td>
<td></td>
</tr>
<tr>
<td>Project Form Email: <a href="mailto:js@affenv.net">js@affenv.net</a></td>
<td></td>
</tr>
<tr>
<td>Property Owner Name: Tim Shoultz</td>
<td></td>
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<tr>
<td>Property Owner Agent: Not reported</td>
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<tr>
<td>Property Owner Company: Affordable Environmental, Inc (ABCN00001427)</td>
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<tr>
<td>Property Owner Address: 8201 164th Ave NE</td>
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<td>Property Owner City: Redmond</td>
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<td>Property Owner State: WA</td>
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<td>Property Owner Zip4: 98052</td>
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<td>Property Owner Phone: 425-285-4334</td>
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<tr>
<td>Job Site Room: throughout</td>
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<td>Facility Size: 2500</td>
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Facility Demo: 1
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 1658
Fireproofing: Not reported
Popcorn Ceiling: 1
CAB: Not reported
Sheet Vinyl: 1
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
Sq Ft Other Text: Drywall
Quantity Lin Ft: 240
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Muddied Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: 1
Lin Ft Other1 Text: window ACM Caulking
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: 1
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: 1
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUALMETHODS : 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: 1
PAPR: Not reported
Type C Continuous: 1
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: 2016-09-06 06:12:54
Submitter IP Address: 73.193.81.219
Region: 2
UBI: 602577245
Notice type: Initial
Project Type: Other linear footage, Other Square Footage, Popcorn Ceiling, Sheet
### Site 1 of 5 in cluster I

**Target:** CHEVRON STATION NORTH BEND  
**Address:** NORTH BEND, WA 98045  
**Actual:** 441 ft.

#### Focus Map:

<table>
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<th>Type</th>
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<tbody>
<tr>
<td>1969</td>
<td>MOFFAT DISTRIBUTING CO INC</td>
<td>Toys And Hobby Goods And Supplies</td>
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<tr>
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<td>MOFFAT DISTRIBUTING CO INC</td>
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</tr>
<tr>
<td>1971</td>
<td>MOFFAT DISTRIBUTING CO INC</td>
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<td>1972</td>
<td>MOFFAT DISTRIBUTING CO INC</td>
<td>Toys And Hobby Goods And Supplies</td>
</tr>
<tr>
<td>1973</td>
<td>MOFFAT DISTRIBUTING CO INC</td>
<td>Gasoline Service Stations</td>
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<tr>
<td>1974</td>
<td>MOFFAT DISTRIBUTING COMPANY*</td>
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<tr>
<td>1983</td>
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### Site 2 of 5 in cluster I

**Target:** BRYANS ONE STOP  
**Address:** 302 W NORTH BEND WAY  
**Actual:** 441 ft.

#### Focus Map:

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Type</th>
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<tbody>
<tr>
<td>2009</td>
<td>BRYANS ONE STOP</td>
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</tr>
<tr>
<td>2010</td>
<td>BRYANS ONE STOP</td>
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</table>

### Site 3 of 5 in cluster I

**Target:** CHEVRON STATION NORTH BEND  
**Address:** NORTH BEND, WA  
**Actual:** 441 ft.
**BRYANS ONE STOP (Continued)**

**Facility Type:** Hazardous Sites List

- **edr_fzip:** Not reported
- **edr_fcnty:** KING
- **edr_zip:** Not reported

- **Facility Status:** Cleanup Started
- **FSID Number:** 77989332
- **Rank:** 1
- **Region:** NW
- **EDR Link ID:** 77989332
- **Region Decode:** NORTHWEST REGIONAL OFFICE

**CSCSL:**

- **Name:** CHEVRON STATION NORTH BEND
- **Address:** 302 W NORTH BEND WAY
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility ID:** 77989332
- **Region:** Northwest
- **Lat/Long:** 47.496397924746 / -121.7881133912
- **Clean Up Siteid:** 10507
- **Site Status:** Cleanup Started
- **Contaminant Name:** Benzene
- **Alternate Site Names:** BROWN P:ETROLEUM LLC, BRYANS ONE STOP, NICHOLAS IMPORT SERVICES INC
- **Site Rank:** 1 - Highest Assessed Risk
- **Has Institutional Control:** Not reported
- **Past VCP:** Not reported
- **Current VCP:** Not reported
- **Ground Water:** Confirmed Above Cleanup Levels
- **Surface Water:** Not reported
- **Soil:** Confirmed Above Cleanup Levels
- **Sediment:** Not reported
- **Air:** Not reported
- **Bedrock:** Not reported
- **Responsible Unit:** Northwest

- **Name:** CHEVRON STATION NORTH BEND
- **Address:** 302 W NORTH BEND WAY
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility ID:** 77989332
- **Region:** Northwest
- **Lat/Long:** 47.496397924746 / -121.7881133912
- **Clean Up Siteid:** 10507
- **Site Status:** Cleanup Started
- **Contaminant Name:** Petroleum-Diesel
- **Alternate Site Names:** BROWN P:ETROLEUM LLC, BRYANS ONE STOP, NICHOLAS IMPORT SERVICES INC
- **Site Rank:** 1 - Highest Assessed Risk
- **Has Institutional Control:** Not reported
- **Past VCP:** Not reported
- **Current VCP:** Not reported
- **Ground Water:** Confirmed Above Cleanup Levels
- **Surface Water:** Not reported
- **Soil:** Confirmed Above Cleanup Levels
- **Sediment:** Not reported
- **Air:** Not reported
- **Bedrock:** Not reported
- **Responsible Unit:** Northwestern
BRYANS ONE STOP (Continued)

Address: 302 W NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 77989332
Region: Northwest
Lat/Long: 47.496397924746 / -121.7881133912
Clean Up Site ID: 10507
Site Status: Cleanup Started
Contaminant Name: Petroleum-Gasoline
Alternate Site Names: BROWN PETROLEUM LLC, BRYANS ONE STOP, NICHOLAS IMPORT SERVICES INC
Site Rank: 1 - Highest Assessed Risk
Has Institutional Control: Not reported
Past VCP: Not reported
Current VCP: Not reported
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

Name: CHEVRON STATION NORTH BEND
Address: 302 W NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 77989332
Region: Northwest
Lat/Long: 47.496397924746 / -121.7881133912
Clean Up Site ID: 10507
Site Status: Cleanup Started
Contaminant Name: Petroleum-Other
Alternate Site Names: BROWN PETROLEUM LLC, BRYANS ONE STOP, NICHOLAS IMPORT SERVICES INC
Site Rank: 1 - Highest Assessed Risk
Has Institutional Control: Not reported
Past VCP: Not reported
Current VCP: Not reported
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

LUST:
Name: CHEVRON STATION NORTH BEND
Address: 302 W NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 77989332
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 10507
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: BROWN PETROLEUM LLC, BRYANS ONE STOP, NICHOLAS IMPORT SERVICES INC
Response Section: Northwest
Release Date: 02/28/1992
Lust Date: 10/24/2007
Region: Northwest
BRYANS ONE STOP (Continued)

Lust ID: 1592
UST ID: 8310
Contaminant Name: Petroleum-Other
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4963979 / -121.788111

Name: CHEVRON STATION NORTH BEND
Address: 302 W NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 77989332
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 10507
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: BROWN PETROLEUM LLC,BRYANS ONE STOP,NICHOLAS IMPORT SERVICES INC
Response Section: Northwest
Release Date: 02/28/1992
Lust Date: 10/24/2007
Region: Northwest
Lust ID: 1592
UST ID: 8310
Contaminant Name: Petroleum-Gasoline
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4963979 / -121.788111

Name: CHEVRON STATION NORTH BEND
Address: 302 W NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 77989332
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 10507
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: BROWN PETROLEUM LLC,BRYANS ONE STOP,NICHOLAS IMPORT SERVICES INC
Response Section: Northwest
Release Date: 02/28/1992
Lust Date: 10/24/2007
Region: Northwest
Lust ID: 1592
UST ID: 8310
Contaminant Name: Benzene
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
BRYANS ONE STOP (Continued)

Lat/Long: 47.4963979 / -121.78811

Name: CHEVRON STATION NORTH BEND
Address: 302 W NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 77989332
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 10507
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: BROWN P; PETROLEUM LLC, BRYANS ONE STOP, NICHOLAS IMPORT SERVICES INC
Response Section: Northwest
Release Date: 02/28/1992
Lust Date: 10/24/2007
Region: Northwest
Lust ID: 1592
UST ID: 8310
Contaminant Name: Petroleum-Diesel
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4963979 / -121.78811

UST:

Name: BRYANS ONE STOP
Address: 302 W NORTH BEND WAY
City: NORTH BEND
Zip: 98045
Facility ID: 77989332
Site Id: 8310
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.4963979247464
Decimal Longitude: -121.7881113391297

Tank Name: 1
Tag Number: A8114
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1972
Tank Closure Date: 07/12/2010
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: 12/17/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Impressed Current and Interior Lining
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Fiberglass
BRYANS ONE STOP (Continued)

Pipeline Construction: Single Wall Pipe
Pipeline Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipeline Second Release Detection: Not reported
Pipeline Corrosion Protection: Corrosion Resistant
Pipeline Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: BRYANS ONE STOP
Address: 302 W NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 2
Tag Number: A8114
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1972
Tank Closure Date: 07/12/2010
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: 12/17/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Impressed Current and Interior Lining
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Fiberglass
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: BRYANS ONE STOP
Address: 302 W NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 3
Tag Number: A8114
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1972
Tank Closure Date: 07/12/2010
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: 12/17/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel
BRYANS ONE STOP (Continued)

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<td>Tank Release Detection:</td>
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<td>Pipe Pumping System:</td>
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<td>Responsible Unit:</td>
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<td>Dispenser/Pump SFC Type:</td>
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Name: BRYANS ONE STOP
Address: 302 W NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 4
Tag Number: A8114
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1972
Tank Closure Date: 07/12/2010
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: 12/17/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Impressed Current and Interior Lining
Tank Maneuver: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Fiberglass
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Secondary Release Detection: Not reported
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALLSITES:
Name: BRYANS ONE STOP
Facility Id: 77989332

Interaction: 64411
Interaction 1: A
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
BRYANS ONE STOP (Continued)

Program ID: 8310
Date Interaction: 1972-01-01 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.49639304699998
Longitude: -121.788088554

Interaction: 64412
Interaction 1: A
Interaction 2: LUST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: Not reported
Program ID: 8310
Date Interaction: 1992-02-28 00:00:00
Date Interaction 3: LUST Facility
Latitude: 47.49639304699998
Longitude: -121.788088554

FINDS:
Registry ID: 110015417912
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015417912

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

I39

BRYAN'S ONE STOP
WA RGA LUST S115431318
Target
302 W NORTH BEND WAY
Property NORTH BEND, WA

Site 4 of 5 in cluster I

Actual:
441 ft.

Focus Map:
RGA LUST:
2008 BRYAN'S ONE STOP 302 W NORTH BEND WAY
2007 BRYAN'S ONE STOP 302 W NORTH BEND WAY
2006 BRYAN'S ONE STOP 302 W NORTH BEND WAY
Site 5 of 5 in cluster I

Actual: 443 ft.
Focus Map: 12

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<td>2001</td>
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<td>302 W NORTH BEND WAY</td>
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</table>

ICR:
- Date Ecology Received Report: 03/20/92
- Contaminants Found at Site: Petroleum products
- Media Contaminated: Soil
- Waste Management: Tank
- Region: North Western
- Type of Report Ecology Received: Interim cleanup report
- Site Register Issue: 92-21
- County Code: 17
- Contact: Not reported
- Report Title: Not reported

Site 1 of 3 in cluster J

Actual: 443 ft.
Focus Map: 12

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<tr>
<th>Interaction</th>
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RCRA NonGen / NLR:
- Date form received by agency: 2005-03-11 00:00:00.0
- Facility name: KING CNTY DOT 428TH
- Facility address: 428TH AVE SE CROSSING
- EPA ID: WAH000024120

I40
Target: 302 W NORTH BEND WAY
Property: NORTH BEND, WA

41
Target: 302 NORTH BEND WAY
Property: NORTH BEND, WA 98045

J42
Target: 428TH AVE SE CROSSING
Property: NORTH BEND, WA 98045
KING CNTY DOT ROAD SERVICES DIV (Continued)

Mailing address: 201 S JACKSON ST
MS KSC TR 0231
SEATTLE, WA 98104

Contact: ERICK THOMPSON
Contact address: 201 S JACKSON ST MS KSC TR 0231
SEATTLE, WA 98104

Contact country: US
Contact telephone: 206-296-8747
Contact email: ERICK.THOMPSON@METROKC.GOV

EPA Region: 10
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: KING CNTY DOT ROAD SERVICES DIV
Owner/operator address: 201 S JACKSON ST MS KSC TR 0231
SEATTLE, WA 98104
Owner/operator country: US
Owner/operator telephone: 206-296-8747
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Map ID Direction Distance Elevation Site Database(s) EDR ID Number EPA ID Number

MAP FINDINGS

KING CNTY DOT 428TH

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
KING CNTY DOT 428TH (Continued)

Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2005-03-10 00:00:00.0
Site name: KING CNTY DOT 428TH
Classification: Not a generator, verified

Date form received by agency: 2005-03-10 00:00:00.0
Site name: KING CNTY DOT 428TH
Classification: Not a generator, verified

Date form received by agency: 2005-03-10 00:00:00.0
Site name: KING CNTY DOT 428TH
Classification: Not a generator, verified

Date form received by agency: 2004-07-29 00:00:00.0
Site name: KING CNTY DOT 428TH
Classification: Large Quantity Generator

Hazardous Waste Summary:
- Waste code: D008
- Waste name: LEAD
- Waste code: WP02
- Waste name: Washington State Dangerous Persistent Waste containing Halogenated Organic Compounds (HOC) at a total concentration level of 0.01% to 1.0%.

Violation Status: No violations found

Site 2 of 3 in cluster J

KING CNTY DOT 428TH
ON 428TH AVE SE CROSSING OVER
NORTH BEND, WA  98045

Actual: 443 ft.

Focus Map: 12

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each...
KING CNTY DOT 428TH (Continued)

facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1007676952
Registry ID: 110017939506
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110017939506

K44  NORTH BEND CY OF  FTTS  1007676952
Target  211 MAIN AV N    N/A
Property  NORTH BEND, WA  98045

Site 1 of 2 in cluster K

Actual: 442 ft.
Focus Map: 12
FTTS INSPI:
Inspection Number: 19880322WA003 1
Region: 10
Inspection Date: 03/22/88
Inspector: MAULE
Violation occurred: No
Investigation Type: Section 6 PCB State Conducted
Investigation Reason: Neutral Scheme, Region
Legislation Code: TSCA
Facility Function: User

K45  NORTH BEND CY OF  HIST FTTS  1008186087
Target  211 MAIN AV N    N/A
Property  NORTH BEND, WA  98045

Site 2 of 2 in cluster K

Actual: 442 ft.
Focus Map: 12
HIST FTTS INSPI:
Inspection Number: 19880322WA003 1
Region: 10
Inspection Date: Not reported
Inspector: MAULE
Violation occurred: No
Investigation Type: Section 6 PCB State Conducted
Investigation Reason: Neutral Scheme, Region
Legislation Code: TSCA
Facility Function: User
Site 1 of 2 in cluster L

128 BENDIGO BLVD NORTH
NORTH BEND, WA 98045

Actual: 443 ft.

Focus Map: 12

ASBESTOS:
Name: Not reported
Address: 128 BENDIGO BLVD NORTH
City,State,Zip: NORTH BEND, WA 98045
Facility Type: Commercial
Parent ID: 153937
Form ID: 154818#1222North922120
Notice Date: 02/01/2018
Start Date: 02/03/2018
Completion Date: 02/28/2018
Initial: Not reported
Amended: 1
On Hold: Not reported
Off Hold: 1
Emergency: Not reported
Site Hours Start: 2:00 PM
Site Hours End: 12:00 AM
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: 1
Contractor ID: 4258810623
Phone: 4258810623
Job Site CAS: Juan Gonzalez
Project Form Email: staylor@northstar.com
Property Owner Name: Not reported
Property Owner Agent: Ethan Hennessey
Property Owner Company: Northstar CG, LP (ABCN00001222)
Property Owner Address: 1100 Olive Way Suite 800
Property Owner City: Seattle
Property Owner State: WA
Property Owner Zip4: 98101
Property Owner Phone: 2067264737
Job Site Room: Not reported
Facility Age: unknown
Facility Size: unknown
Facility Remodel: 1
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 900
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
(Continued)

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<td>Address</td>
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Amended: 1
On Hold: Not reported
Off Hold: 1
Emergency: Not reported
Site Hours Start: 2:00 PM
Site Hours End: 12:00 AM
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: 1
Contractor ID: Not reported
Phone: 4258810623
Job Site CAS: Juan Gonzalez
Project Form Email: staylor@northstar.com
Property Owner Name: Not reported
Property Owner Agent: Ethan Hennessey
Property Owner Company: Northstar CG, LP (ABCN00001222)
Property Owner Address: 1100 Olive Way Suite 800
Property Owner City: Seattle
Property Owner State: WA
Property Owner Zip4: 98101
Property Owner Phone: 2067264737
Job Site Room: Not reported
Facility Age: unknown
Facility Size: unknown
Facility Remodel: 1
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 900
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: 1
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUALMETHODS : 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Project on hold. completion date extended
Date Time Submitted: 2018-02-15 14:51:28
Submitter IP Address: 50.226.138.146
Region: 2
UBI: 602614420
Notice type: Initial
Project Type: Vinyl Asbestos Tile
Supervisor: Juan Gonzalez ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE
Name: Not reported
Address: 128 BENDIGO BLVD NORTH
City,State,Zip: NORTH BEND, WA 98045
Facility Type: Commercial
Parent ID: 153937
Form ID: 155402#1222North679578
Notice Date: 02/15/2018
Start Date: 02/03/2018
Completion Date: 03/31/2018
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Saturday: 1
Contractor ID: Not reported
Phone: 4258810623
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<p>| Job Site CAS: | Juan Gonzalez |
| Project Form Email: | <a href="mailto:staylor@northstar.com">staylor@northstar.com</a> |
| Property Owner Name: | Not reported |
| Property Owner Agent: | Ethan Hennessey |
| Property Owner Company: | Northstar CG, LP (ABCN00001222) |
| Property Owner Address: | 1100 Olive Way Suite 800 |
| Property Owner City: | Seattle |
| Property Owner State: | WA |
| Property Owner Zip4: | 98101 |
| Property Owner Phone: | 2067264737 |
| Job Site Room: | unknown |
| Facility Age: | unknown |
| Facility Size: | unknown |
| Facility Remodel: | 1 |
| Facility Demo: | Not reported |
| Facility Repair: | Not reported |
| Facility Maint: | Not reported |
| Removed: | 1 |
| Encapsulated: | Not reported |
| Quantity Sq Ft: | 900 |
| Fireproofing: | Not reported |
| Popcorn Ceiling: | Not reported |
| CAB: | Not reported |
| Sheet Vinyl: | Not reported |
| Asbestos Paper: | Not reported |
| Boiler Insulation: | Not reported |
| Duct Paper: | Not reported |
| VAT: | 1 |
| Roofing: | Not reported |
| Sq Ft Other: | Not reported |
| Sq Ft Other Text: | Not reported |
| Quantity Lin Ft: | Not reported |
| Mag Pipe Insulation: | Not reported |
| Air Cell Pipe Insulation: | Not reported |
| Ducting Insulation: | Not reported |
| Cement Asbestos Pipe: | Not reported |
| Mudded Pipe Insulation: | Not reported |
| Duct Tape: | Not reported |
| Lin Ft Other1: | Not reported |
| Lin Ft Other1 Text: | Not reported |
| Lin Ft Other2: | Not reported |
| Lin Ft Other2 Text: | Not reported |
| Indoors: | 1 |
| Outdoors: | Not reported |
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| Glove Bag: | Not reported |
| Mini Enclosure: | Not reported |
| Critical Barriers: | Not reported |
| Wrap And Cut: | Not reported |
| Wet Methods: | 1 |
| HEPA Vacuum: | 1 |
| MANUALMETHODS : | 1 |
| Other CM1: | Not reported |
| Other CM1 Text: | Not reported |
| Other CM2: | Not reported |
| Other CM2 Text: | Not reported |
| Half Mask APR: | 1 |</p>
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| Name:            | Not reported |
| Address:         | 128 BENDIGO BLVD NORTH |
| City, State, Zip: | NORTH BEND, WA 98045 |
| Facility Type:   | Commercial |
| Parent ID:       | 0 |
| Form ID:         | 153937#1222North025110 |
| Notice Date:     | 01/11/2018 |
| Start Date:      | 02/03/2018 |
| Completion Date: | 02/28/2018 |
| Initial:         | 1 |
| Amended:         | Not reported |
| On Hold:         | Not reported |
| Off Hold:        | Not reported |
| Emergency:       | Not reported |
| Site Hours Start:| 7:00 AM |
| Site Hours End:  | 3:30 PM |
| Sunday:          | Not reported |
| Monday:          | 1 |
| Tuesday:         | 1 |
| Wednesday:       | 1 |
| Thursday:        | 1 |
| Friday:          | 1 |
| Saturday:        | Not reported |
| Contractor ID:   | Not reported |
| Phone:           | 4258810623 |
| Job Site CAS:    | Juan Gonzalez |
| Project Form Email: | staylor@northstar.com |
| Property Owner Name: | Not reported |
| Property Owner Agent: | Ethan Hennessey |
| Property Owner Company: | Northstar CG, LP (ABCN00001222) |
| Property Owner Address: | 1100 Olive Way Suite 800 |
| Property Owner City: | Seattle |
| Property Owner State: | WA |
| Property Owner Zip4: | 98101 |
| Property Owner Phone: | 2067264737 |
| Job Site Room:    | Not reported |
| Facility Age:     | unknown |
| Facility Size:    | unknown |
| Facility Remodel: | 1 |
| Facility Demo:    | Not reported |
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<td>Vinyl Asbestos Tile</td>
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<td>Supervisor:</td>
<td>Juan Gonzalez (</td>
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<td>Supervisor Phone:</td>
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</table>
### J47 Site

**Target:** WA DOT BRG 202/066  
**Property:** NORTH BEND, WA 98045  
**Actual:** 444 ft.  
**Focus Map:** 12

**Environmental Interest/Information System:**
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

**Click this hyperlink** while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**ECHO:**
- **Envid:** 1011399091  
- **Registry ID:** 110035443179  
- **DFR URL:** [http://echo.epa.gov/detailed-facility-report?fid=110035443179](http://echo.epa.gov/detailed-facility-report?fid=110035443179)

### L48 Site

**Target:** WA DOT BRG 202/066  
**Property:** NORTH BEND, WA 98045  
**Actual:** 444 ft.  
**Focus Map:** 12

**Interaction:** 14066  
**Interaction 1:** I  
**Interaction 2:** HWG  
**Ecology Program:** TURBOWASTE  
**Program Data:** WAH00031408  
**Facility Alt.:** Not reported  
**Date Interaction:** 2007-07-13 00:00:00  
**Date Interaction 3:** Hazardous Waste Generator  
**Latitude:** 47.49568532899997  
**Longitude:** -121.786588221

---

**Certificate Status:** ACTIVE
WA DOT BRG 202/066 (Continued)

Interaction: 14067
Interaction 1: I
Interaction 2: HWOTHER
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
 Facility Alt.: Not reported
Program ID: WAH000031408
 Date Interaction: 2007-12-31 00:00:00
 Date Interaction 3: Haz Waste Management Act
Latitude: 47.495685328999997
Longitude: -121.786588221

WA MANIFEST:
Name: WA DOT BRG 202/066
Address: MP 29.50-29.59
City,State,Zip: NORTH BEND, WA 98045
 Facility Address 2: Not reported
 Facility ID: 4130071
EPA ID: WAH000031408
NAICS: Not reported
State Waste Code Desc: Not reported
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: Not reported
Permit by Rule: F
Mailing Address 2: Not reported
Treatment by Generator: F
Mixed Radioactive Waste: F
Importer of Hazardous Waste: F
Immediate Recycler: F
Treatment/Storage/Disposal/Recycling Facility: F
Generator of Dangerous Fuel Waste: F
Generator Marketing to Burner: F
Other Marketers (i.e., blender, distributor, etc.): F
Utility Boiler Burner: F
Industry Boiler Burner: F
Industrial Furnace: F
Smelter Deferal: F
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 916001068
Business Type: Transportation
Mail Name: WSDOT NWR Facilities HazMat
Mailing Address: 6431 Corson Ave S
Mailing City,State,Zip: Seattle, WA 98108-3445
Legal Organization Name: WSDOT NWR Facilities HazMat
Legal Organization Type: State
Legal Contact: Not reported
Legal Address: 6431 Corson Ave S
Legal Address 2: Not reported
Legal City,State,Zip: Seattle, WA 98108-3445
Legal Phone Number: (206)768-5866
Legal Effective Date: 01/01/2007
Land Organization Name: WSDOT NWR Facilities HazMat
Land Organization Type: State
WA DOT BRG 202/066 (Continued)

| Land Contact: | Not reported |
| Land Address: | 6431 Corson Ave S |
| Land City,State,Zip: | Seattle, WA 98108-3445 |
| Land Phone Number: | (206)768-5866 |
| Operator Organization Name: | WSDOT NWR Facilities HazMat |
| Operator Organization Type: | State |
| Operator: | Robert Jackson |
| Operator Address: | 6431 Corson Ave S |
| Operator Address 2: | Not reported |
| Operator City,State,Zip: | Seattle, WA 98108-3445 |
| Operator Phone Number: | (206)768-3445 |
| Operator Effective Date: | 01/01/2007 |
| Site Contact: | Robert Jackson |
| Site Contact Address: | 6431 Corson Ave S |
| Site Contact Address 2: | Not reported |
| Site Contact Phone Number: | (206)768-3445 |
| Site Contact Email: | jacksonR@wsdot.wa.gov |
| Gen Status Code: | SQG |
| Monthly Generation: | F |
| Batch Generation: | T |
| One Time Generation: | F |
| Transport Own Waste: | F |
| Transport Other Waste: | F |
| Recycler Onsite: | F |
| Transfer Facility: | F |
| Other Exemption: | Not reported |
| UW Battery Gen: | F |
| Used Oil Transporter: | F |
| Used Oil Transfer Facility: | F |
| Used Oil Processor: | F |
| Used Oil Refiner: | F |
| Used Oil Fuel Marketer Directs Shipments: | F |
| Used Oil Fuel Marketer Meets Specs: | F |
| Site Contact Address 2: | Not reported |

MAP FINDINGS

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<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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</table>

M49 TELEPHONE UTILITIES OF WASHINGTON NORTH BEND

Target 131 2ND ST EAST

Property NORTH BEND, WA 98045

Site 1 of 5 in cluster M

Actual: 443 ft.

Focus Map: 12

<table>
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TELEPHONE UTILITIES OF WASHINGTON NORTH BEND (Continued)  
U00124915

Tank Closure Date: Not reported  
Capacity Range: Not reported  
Tank Permit Expiration Date: Not reported  
Tank Upgrade Date: Not reported  
Tank Spill Prevention: Not reported  
Tank Overfill Prevention: Not reported  
Tank Material: Not reported  
Tank Construction: Not reported  
Tank Tightness Test: Not reported  
Tank Corrosion Protection: Other  
Tank Manifold: Not reported  
Tank Release Detection: Other  
Tank SFC Type: Not reported  
Pipe Material: Other  
Pipe Construction: Other  
Pipe Primary Release Detection: Not reported  
Pipe Second Release Detection: Not reported  
Pipe Corrosion Protection: Not reported  
Pipe Pumping System: Not reported  
Responsible Unit: Northwest  
Dispenser/Pump SFC Type: Not reported  

Target PICKETT AVE  
Property NORTH BEND, WA 98045  
Actual: 453 ft.  
Focus Map: 13

MAP FINDINGS

Site 2 of 5 in cluster M
Actual: 443 ft.  
Focus Map: 12  
ICR: 09/12/94  
Date Ecology Received Report: 09/12/94  
Contaminants Found at Site: Petroleum products  
Media Contaminated: Soil  
Waste Management: Tank  
Region: North Western  
Type of Report Ecology Received: Interim cleanup report  
Site Register Issue: 93-36  
County Code: 17  
Contact: Not reported  
Report Title: Not reported

Site 1 of 2 in cluster N
Actual: 453 ft.  
Focus Map: 13  
ALLSITES: PLAT OF RIVER GLEN  
Name: PLAT OF RIVER GLEN  
Facility Id: 17798

Interaction: 120337  
Interaction 1: A  
Interaction 2: UIC  
Ecology Program: WATQUAL  
Program Data: UIC  
Facility Alt.: Plat of River Glen

N51  
Target PICKETT AVE  
Property NORTH BEND, WA 98045

Map ID  
Direction  
Distance  
Elevation  
Site  
EDR ID Number  
Database(s)  
EPA ID Number
PLAT OF RIVER GLEN (Continued)

Program ID: 33405
Date Interaction: 2016-10-12 00:00:00
Date Interaction 3: Underground Injection Con
Latitude: 47.49528499499999
Longitude: -121.7706628999999

N52
Target PLAT OF RIVER GLEN
Property PICKETT AVE,
NORTH BEND, WA 98045

Site 2 of 2 in cluster N

Actual: 453 ft.
UIC: PLAT OF RIVER GLEN
Name: PICKETT AVE,
Address: NORTH BEND, WA 98045
City, State, Zip: NORTH BEND, WA 98045
Site Number: 33405
Owner Name: River Glen Home Owner's Association
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.495471
Longitude: 121.76946
Well Name: Trench 3
Registration Type: Municipal Stormwater
Construction Date: 10/12/2016
Construction Type: Infiltration trench with perforated pipe
Depth: 3

O53
Target TOLLGATE FARM PARK
Property N BEND WAY & BENDIGO BLVD
NORTH BEND, WA 98045

Site 1 of 2 in cluster O

Actual: ALL SITES: 444 ft.
Name: TOLLGATE FARM PARK
Facility Id: 15915

Interaction: 105655
Interaction 1: A
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: Tollgate Farm Park
Program ID: WAR127272
Date Interaction: 2013-04-30 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.50170199899999
Longitude: -121.7956611
### Site 3 of 5 in cluster M

**Target:** 142 MAIN AVE N  
**Property:** NORTH BEND, WA

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<th>ASBESTOS:</th>
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<td>443 ft.</td>
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**Name:**  
**Address:** 142 MAIN AVE N  
**City,State,Zip:** NORTH BEND, WA

**Facility Type:** Not reported  
**Parent ID:** Not reported

**Form ID:** 75991##1338Ameri035556  
**Notice Date:** 08/30/2013  
**Start Date:** 08/30/2013  
**Completion Date:** 09/20/2013  
**Initial:** Not reported  
**Amended:** Not reported  
**On Hold:** Not reported  
**Off Hold:** Not reported  
**Emergency:** Not reported  
**Site Hours Start:** Not reported  
**Site Hours End:** Not reported  
**Sunday:** Not reported  
**Monday:** Not reported  
**Tuesday:** Not reported  
**Wednesday:** Not reported  
**Thursday:** Not reported  
**Friday:** Not reported  
**Saturday:** Not reported  
**Contractor ID:** Not reported  
**Phone:** Not reported  
**Job Site CAS:** Not reported  
**Project Form Email:** Not reported  
**Property Owner Name:** Not reported  
**Property Owner Company:** American Environmental Constru (ABCN00001338)  
**Property Owner Address:** Not reported  
**Property Owner City:** Not reported  
**Property Owner State:** Not reported  
**Property Owner Zip:** Not reported  
**Property Owner Phone:** Not reported  
**Job Site Room:** Not reported  
**Facility Age:** Not reported  
**Facility Size:** Not reported  
**Facility Remodel:** Not reported  
**Facility Demo:** Not reported  
**Facility Repair:** Not reported  
**Facility Maint:** Not reported  
**Removed:** Not reported  
**Encapsulated:** Not reported  
**Quantity Sq Ft:** Not reported  
**Fireproofing:** Not reported  
**Popcorn Ceiling:** Not reported  
**CAB:** Not reported  
**Sheet Vinyl:** Not reported  
**Asbestos Paper:** Not reported  
**Boiler Insulation:** Not reported  
**Duct Paper:** Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Muddied Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 602131386
Notice type: Initial
Project Type: Other Square Footage, Vinyl Asbestos Tile
Supervisor: Charley Bainard ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE
Name: Not reported
Address: 142 MAIN AVE N
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 76071##1338Ameri754034
Notice Date: 09/03/2013
Start Date: 08/30/2013
Completion Date: 08/30/2013
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: American Environmental Constru (ABCN00001338)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Not reported

Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 602131386
Notice type: Initial
Project Type: Other Square Footage, Vinyl Asbestos Tile
Supervisor: Charley Bainard
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 142 MAIN AVE N
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 75479#1338Ameri104984
Notice Date: 08/19/2013
Start Date: 08/30/2013
Completion Date: 09/20/2013
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
(Continued)

Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: American Environmental Constru (ABCN00001338)
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported

S125591151
(Continued)

Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 602131386
Notice type: Initial
Project Type: Other Square Footage, Vinyl Asbestos Tile
Supervisor: John Asselin
Supervisor Phone: Not reported
Certificate Status: ACTIVE

---

### O55 NORTH BEND CHEVRON

**Target:** 201 W NORTH BEND WAY  
**Property:** NORTH BEND, WA 98045

**Actual:** 444 ft.

**Focus Map:** 12

**Year:** 1987  
**Name:** NORTH BEND CHEVRON  
**Type:** Gasoline Service Stations

**Year:** 1988  
**Name:** NORTH BEND CHEVRON  
**Type:** Gasoline Service Stations

---

### P56 WA ASBESTOS

**Target:** 111 MAIN AVE N.  
**Property:** NORTH BEND, WA 98045

**Actual:** 444 ft.

**Name:** ASBESTOS:  
**Address:** 111 MAIN AVE N.  
**City, State Zip:** NORTH BEND, WA 98045  
**Facility Type:** Single-Dwelling  
**Parent ID:** 0  
**Form ID:** 86345##1337OneSt171846  
**Notice Date:** 06/11/2014  
**Start Date:** 06/23/2014  
**Completion Date:** 07/03/2014  
**Initial:** 1  
**Amended:** Not reported  
**On Hold:** Not reported  
**Off Hold:** Not reported  
**Emergency:** Not reported  
**Site Hours Start:** 9:30 a.m.  
**Site Hours End:** 3:30 p.m.  
**Sunday:** Not reported  
**Monday:** 1  
**Tuesday:** 1  
**Wednesday:** 1
| Thursday: | 1 |
| Friday:    | 1 |
| Saturday:  | Not reported |
| Contractor ID: | Not reported |
| Phone:     | 206-228-4290 |
| Job Site CAS: | Jesus Mapelli Sr. |
| Project Form Email: | turbo.ruiz1@comcast.net |
| Property Owner Name: | Glaziers City Of North Bend |
| Property Owner Agent: | Don B. |
| Property Owner Company: | One Stop Environmental Abatement (ABCN00001337) |
| Property Owner Address: | PO Box 896 |
| Property Owner City: | North Bend |
| Property Owner State: | Wa |
| Property Owner Zip4: | 98045 |
| Property Owner Phone: | 425-888-7652 |
| Job Site Room: | Not reported |
| Facility Age: | 1914 |
| Facility Size: | 1500 |
| Facility Remodel: | Not reported |
| Facility Demo: | 1 |
| Facility Repair: | Not reported |
| Facility Maint: | Not reported |
| Removed: | 1 |
| Encapsulated: | Not reported |
| Quantity Sq Ft: | 1500 |
| Fireproofing: | Not reported |
| Popcorn Ceiling: | Not reported |
| CAB: | 1 |
| Sheet Vinyl: | Not reported |
| Asbestos Paper: | Not reported |
| Boiler Insulation: | Not reported |
| Duct Paper: | Not reported |
| VAT: | Not reported |
| Roofing: | Not reported |
| Sq Ft Other: | Not reported |
| Sq Ft Other Text: | Not reported |
| Quantity Lin Ft: | Not reported |
| Mag Pipe Insulation: | Not reported |
| Air Cell Pipe Insulation: | Not reported |
| Ducting Insulation: | Not reported |
| Cement Asbestos Pipe: | Not reported |
| Mudded Pipe Insulation: | Not reported |
| Duct Tape: | Not reported |
| Lin Ft Other1: | Not reported |
| Lin Ft Other1 Text: | Not reported |
| Lin Ft Other2: | Not reported |
| Lin Ft Other2 Text: | Not reported |
| Indoors: | Not reported |
| Outdoors: | 1 |
| Neg Pres Enclosure: | Not reported |
| Glove Bag: | Not reported |
| Mini Enclosure: | Not reported |
| Critical Barriers: | 1 |
| Wrap And Cut: | Not reported |
| Wet Methods: | 1 |
| HEPA Vacuum: | 1 |
| MANUALMETHODS: | 1 |
(Continued)

Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: 2014-06-11 10:31:07
Submitter IP Address: 98.225.25.31
Region: 2
UBI: 602107921
Notice type: Initial
Project Type: Cement Asbestos Board (CAB)
Supervisor: Jesus Mapelli Sr. ( )
Supervisor Phone: Not reported
Certificate Status: ACTIVE

---

P57  SALLAL WATER ASSOC  FTTS  1004613587
Target 107 MAIN AVE N  HIST FTTS  N/A
Property NORTH BEND, WA  98045

Site 2 of 4 in cluster P

Actual: 444 ft.
Focus Map: 12

FTTS INSPI:
Inspection Number: 19880322WA003 3
Region: 10
Inspection Date: 03/22/88
Inspector: MAULE
Violation occurred: No
Investigation Type: Section 6 PCB State Conducted
Investigation Reason: For Cause, Private Citizen/Press Complaint
Legislation Code: TSCA
Facility Function: User

HIST FTTS INSPI:
Inspection Number: 19880322WA003 3
Region: 10
Inspection Date: Not reported
Inspector: MAULE
Violation occurred: No
Investigation Type: Section 6 PCB State Conducted
Investigation Reason: For Cause, Private Citizen/Press Complaint
Legislation Code: TSCA
Facility Function: User
Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
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<td>Contractor ID:</td>
<td>Not reported</td>
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<td>Phone:</td>
<td>253-984-1818</td>
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<tr>
<td>Job Site CAS:</td>
<td>Troy Harris</td>
</tr>
<tr>
<td>Project Form Email:</td>
<td><a href="mailto:debif@ttnw-inc.com">debif@ttnw-inc.com</a></td>
</tr>
<tr>
<td>Property Owner Name:</td>
<td>Charles Jackson</td>
</tr>
<tr>
<td>Property Owner Agent:</td>
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<td>Property Owner Company:</td>
<td>Thermatech Northwest Inc (ABCN00001210)</td>
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<tr>
<td>Property Owner Address:</td>
<td>235 East 3rd St</td>
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<td>North Bend</td>
</tr>
<tr>
<td>Property Owner State:</td>
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<td>206-914-6187</td>
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<td>Mudded Pipe Insulation:</td>
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<td>Indoors:</td>
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<td>Outdoors:</td>
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Map ID | Direction | Distance | Elevation | Site | Database(s) | EDR ID Number | EPA ID Number
--- | --- | --- | --- | --- | --- | --- | ---

| MAP FINDINGS |
|--- | --- | --- | --- | --- | --- | --- |
| Map ID | Direction | Distance | Elevation | Site | Database(s) | EDR ID Number | EPA ID Number |
| S121066515 | Yes | 0.5 | 0.2 | Yes | | | |

TC5992688.2s Page 142
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: 1
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUALMETHODS: 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: ON HOLD Monday 2-20-17 at 710am-owner was not ready.
Date Time Submitted: 2017-02-20 07:11:21
Submitter IP Address: 75.151.101.37
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Other Square Footage, Sheet Vinyl
Supervisor: Troy Harris()
Supervisor Phone: Not reported
Certificate Status: ACTIVE
Name: Not reported
Address: 235 EAST 3RD STREET ENTRY, KITCHEN
City, State, Zip: NORTH BEND, WA 98045
Facility Type: Single Family Residence
Parent ID: 138293
Form ID: 145417#1210Therm611856
Notice Date: 06/30/2017
Start Date: 02/20/2017
Completion Date: 06/30/2017
Initial: Not reported
Amended: 1
On Hold: Not reported
Off Hold: 1
Emergency: Not reported
Site Hours Start: 1:30 p.m.
Site Hours End: 1:30 p.m.
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: 1
Saturday: Not reported
Contractor ID: Not reported
Phone: 253-984-1818
Job Site CAS: Troy Harris
Project Form Email: debfil@thnw-inc.com
Property Owner Name: Charles Jackson
Property Owner Agent: Not reported
Property Owner Company: Thermatech Northwest Inc (ABCN00001210)
Property Owner Address: 235 East 3rd St
Property Owner City: North Bend
Property Owner State: WA
Property Owner Zip4: 98045
Property Owner Phone: 206-914-6187
Job Site Room: entry, kitchen
Facility Age: 1949
Facility Size: 1570 SF
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: 1
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 124
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: 1
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
Sq Ft Other Text: sink undercoating
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: 1
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUALMETHODS: 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: Not reported
PAPR: Not reported
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<tr>
<th>Map ID</th>
<th>Direction</th>
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<th>Database(s)</th>
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<tbody>
<tr>
<td></td>
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</tbody>
</table>

| Type C Continuous: | Not reported |
| Type C Pressure:   | Not reported |
| Other Resp Pro:    | Not reported |
| Other Resp Pro Text: | Not reported |
| Comments:          | OFF HOLD and cancelled as of Friday 6-30-17 at 130pm. No work was performed onsite under this notification to date. |
| Date Time Submitted: | 2017-06-30 13:31:01 |
| Submitter IP Address:  | 75.151.101.37 |
| Region:             | 2 |
| UBI:                | 601725020 |
| Notice type:        | Initial |
| Project Type:       | Other Square Footage, Sheet Vinyl |
| Supervisor:         | Troy Harris |
| Supervisor Phone:   | Not reported |
| Certificate Status: | ACTIVE |

Name: Not reported
Address: 235 EAST 3RD STREET ENTRY, KITCHEN
City, State, Zip: NORTH BEND, WA 98045
Facility Type: Single Family Residence
Parent ID: 138293
Form ID: 139112#1210Therm258444
Notice Date: 02/27/2017
Start Date: 02/20/2017
Completion Date: 06/30/2017
Initial: Not reported
Amended: 1
On Hold: 1
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: 7:00 a.m.
Site Hours End: 3:30 p.m.
Sunday: Not reported
Monday: 1
Tuesday: 1
Wednesday: 1
Thursday: 1
Friday: 1
Saturday: Not reported
Contractor ID: Not reported
Phone: 253-984-1818
Job Site CAS: Troy Harris
Project Form Email: debif@ttnw-inc.com
Property Owner Name: Charles Jackson
Property Owner Agent: Not reported
Property Owner Company: Thermatech Northwest Inc (ABCN00001210)
Property Owner Address: 235 East 3rd St
Property Owner City: North Bend
Property Owner State: WA
Property Owner Zip4: 98045
Property Owner Phone: 206-914-6187
Job Site Room: entry, kitchen
Facility Age: 1949
Facility Size: 1570 SF
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: 1
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<tr>
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<td>CAB:</td>
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<td>Roofing:</td>
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</tr>
<tr>
<td>Sq Ft Other:</td>
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<tr>
<td>Mag Pipe Insulation:</td>
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<td>Air Cell Pipe Insulation:</td>
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Comments: Still on Hold as of Monday 2-27-17 at 1140am-Amend completion date to Friday 6-30-17.
Certificate Status: ACTIVE

Name: Not reported
Address: 235 EAST 3RD STREET ENTRY, KITCHEN
City, State, Zip: NORTH BEND, WA 98045
Facility Type: Single Family Residence
Parent ID: 0
Form ID: 138293#1210Therm405853
Notice Date: 02/09/2017
Start Date: 02/20/2017
Completion Date: 02/28/2017
Initial: 1
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: 7:00 a.m.
Site Hours End: 3:30 p.m.
Sunday: Not reported
Monday: 1
Tuesday: 1
Wednesday: 1
Thursday: 1
Friday: 1
Saturday: Not reported
Contractor ID: Not reported
Phone: 253-984-1818
Job Site CAS: Troy Harris
Project Form Email: debif@ttnw-inc.com
Property Owner Name: Charles Jackson
Property Owner Agent: Not reported
Property Owner Company: Thermatech Northwest Inc (ABCN00001210)
Property Owner Address: 235 East 3rd St
Property Owner City: North Bend
Property Owner State: WA
Property Owner Zip4: 98045
Property Owner Phone: 206-914-6187
Job Site Room: entry, kitchen
Facility Age: 1949
Facility Size: 1570 SF
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: 1
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 124
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: 1
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
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<td>Air Cell Pipe Insulation</td>
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<td>Certificate Status:</td>
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**PROPERTY: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU**

**Address:** 106 MAIN AVE N
**City:** NORTH BEND, WA 98045

**SITE:** 4 of 4 in cluster P

**UST:**

<table>
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<tr>
<th>Name</th>
<th>LOVELAND CHEVROLET</th>
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<tbody>
<tr>
<td>Address</td>
<td>106 MAIN ST</td>
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<tr>
<td>City</td>
<td>NORTH BEND</td>
</tr>
<tr>
<td>Zip</td>
<td>98045</td>
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<tr>
<td>Facility ID</td>
<td>87445666</td>
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<tr>
<td>Site Id</td>
<td>101691</td>
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<tr>
<td>UBI:</td>
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CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU (Continued) 1000659710

Phone Number: Not reported
Decimal Latitude: 47.494704
Decimal Longitude: -121.786971

Tank Name: 1
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: LOVELAND CHEVROLET
Address: 106 MAIN ST
City: NORTH BEND
Zip: 98045

Tank Name: 2
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU (Continued)

Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALL SITES:
Name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Facility Id: 6719324
Interaction: 19453
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAD988493862
Date Interaction: 1991-09-23 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.495204329000003
Longitude: -121.786625222

Name: LOVELAND CHEVROLET
Facility Id: 87445666
Interaction: 69641
Interaction 1: I
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 101691
Date Interaction: 1992-07-10 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.494698329000002
Longitude: -121.786956221

RCRA NonGen / NLR:
Date form received by agency: 2004-06-24 00:00:00.0
Facility name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Facility address: 106 MAIN AVE N
NORTH BEND, WA 98045
EPA ID: WAD988493862
Contact: JOEL CHURCH
Contact address: 106 MAIN AVE N
NORTH BEND, WA 98045
Contact country: US
Contact telephone: 425-888-0781
Contact email: JOELE55@EARTHLINK.NET
EPA Region: 10
Land type: Private
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste
Owner/Operator Summary:

Owner/operator name: LOVELAND, HUGO
Owner/operator address: 111 N BEND WAY
Owner/operator country: US
Owner/operator telephone: 425-391-1578
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAR
Owner/operator address: 15000 SE EASTGATE WAY
Owner/operator country: US
Owner/operator telephone: 425-641-2002
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 2000-01-01 00:00:00
Owner/Op end date: Not reported

Owner/operator name: MAXEY, MARK
Owner/operator address: 106 MAIN AVE N
Owner/operator country: US
Owner/operator telephone: 425-888-0781
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No
Historical Generators:

Date form received by agency: 2004-06-23 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Not a generator, verified

Date form received by agency: 2003-12-31 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Not a generator, verified

Date form received by agency: 2003-02-07 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Not a generator, verified

Date form received by agency: 2002-05-23 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2000-12-11 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2000-03-01 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2000-01-06 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1999-03-26 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Not a generator, verified

Date form received by agency: 1997-06-09 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1996-03-01 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Small Quantity Generator

Date form received by agency: 1994-01-01 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Not a generator, verified

Date form received by agency: 1993-12-31 00:00:00.0
Site name: CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU
Classification: Small Quantity Generator
CHAPLINS NORTH BEND CHEVROLET OLDS SUBAU (Continued)  

Violation Status: No violations found

FINDS:
Registry ID: 110005366460
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110005366460

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000659710
Registry ID: 110005366460
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110005366460

62   WA DNR NORTH BEND   FINDS  1007072667
Target  205 BALLARET   N/A
Property NORTH BEND, WA  98045

FINDS:
Registry ID: 110015492947
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015492947

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
Site 5 of 5 in cluster M

Actual: 444 ft.

Focus Map: 12

LUST:
Name: PACIFIC TELECOM
Address: 131 2ND ST E
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 22472173
Lust Status Type: LUST - NFA
Cleanup Site ID: 8320
Cleanup Unit Type: Not reported
Process Type: Not reported
Cleanup Unit Name: TELEPHONE UTILITIES OF WA NORTH BEND, TELEPHONE UTILITIES OF WASHINGTON

Response Section: Northwest
Release Date: 07/05/1994
Lust Date: 10/03/2011
Region: Northwest
Lust ID: 3516
UST ID: 7284
Contaminant Name: Petroleum-Diesel
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.495109 / -121.78543

ALLSITES:
Name: CENTURYTEL NORTH BEND
Facility Id: 31962197
Interaction: 37700
Interaction 1: A
Interaction 2: TIER2
Ecology Program: HAZWASTE
Program Data: EPCRA
Facility Alt.: Not reported
Program ID: CRK000045910
Date Interaction: 1998-01-01 00:00:00
Date Interaction 3: Emergency/Haz Chem Rpt Ti
Latitude: 47.358049336000001
Longitude: -121.780266255

Name: TELEPHONE UTILITIES OF WA NORTH BEND
Facility Id: 22472173
Interaction: 32483
Interaction 1: I
Interaction 2: LUST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: Not reported
Program ID: 7284
CenTuryTeL North Bend (Continued)

Date Interaction: 1994-07-05 00:00:00
Date Interaction 3: LUST Facility
Latitude: 47.495103329000003
Longitude: -121.785420221

Interaction: 32482
Interaction 1: A
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 7284
Date Interaction: 1968-01-01 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.495103329000003
Longitude: -121.785420221

CscsL nfa:
Name: PACIFIC TELECOM
Address: 131 2ND ST E
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 22472173
CS Id: 8320
Nfa Date: 10/03/2011
Alternate Site Names: TELEPHONE UTILITIES OF WA NORTH BEND, TELEPHONE UTILITIES OF WASHINGTON NORTH BEND
Nfa Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Diesel
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.495109
Longitude: -121.785435

Finds:
Registry ID: 110015493820
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015493820

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
Site 1 of 4 in cluster Q

UTS:
- Name: FLOYDS COMPLETE SERVICES INC
- Address: 106 E NORTH BEND WAY
- City: NORTH BEND
- Zip: 98045
- Facility ID: 19924895
- Site Id: 389
- UBI: Not reported
- Phone Number: Not reported
- Decimal Latitude: 47.494674
- Decimal Longitude: -121.786801

Tank Name: 1 SKY
- Tag Number: Not reported
- Status: Removed
- Status Date: 08/06/1996
- Install Date: 04/15/1972
- Closure Date: 10/29/2000
- Capacity Range: Not reported
- Permit Expiration Date: Not reported
- Upgrade Date: None
- Spill Prevention: None
- Material: Steel
- Construction: Single Wall Tank
- Tightness Test: Not reported
- Corrosion Protection: Not reported
- Manifold: Not reported
- Release Detection: Manual Inventory Control (daily)
- SFC Type: Not reported
- Material: Steel
- Construction: Single Wall Pipe
- Primary Release Detection: Automatic Line Leak Detector (ALLD)
- Secondary Release Detection: Not reported
- Corrosion Protection: Sacrificial Anode
- Pumping System: Pressurized System
- Responsible Unit: Northwest
- Dispenser/Pump SFC Type: Not reported

Name: FLOYDS COMPLETE SERVICES INC
- Address: 106 E NORTH BEND WAY
- City: NORTH BEND
- Zip: 98045

Tank Name: 2 FIRE
- Tag Number: Not reported
- Status: Removed
- Status Date: 08/06/1996
- Install Date: 04/15/1972
- Closure Date: 09/13/2000
- Capacity Range: 1,101 to 2,000 Gallons
- Permit Expiration Date: Not reported
- Upgrade Date: Not reported
FLOYDS COMPLETE SERVICES INC  (Continued) U003294827

Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Not reported
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank Release Detection: Manual Inventory Control (daily)
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Sacrificial Anode
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: FLOYDS COMPLETE SERVICES INC
Address: 106 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 3 L FREE
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 04/15/1972
Tank Closure Date: 09/13/2000
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Not reported
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank Release Detection: Manual Inventory Control (daily)
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Sacrificial Anode
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: FLOYDS COMPLETE SERVICES INC
Address: 106 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 4 WASTE OIL
Tag Number: Not reported
FLOYDS COMPLETE SERVICES INC (Continued) U003294827

Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 04/15/1972
Tank Closure Date: 09/13/2000
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Not reported
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank Release Detection: Manual Inventory Control (daily)
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Vapor Monitoring
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Product Removed by Reclaimer
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALLSITES:
Name: FLOYDS COMPLETE SERVICES INC
Facility Id: 19924895

Interaction: 31358
Interaction 1: A
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 389
Date Interaction: 1972-04-15 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.494668329
Longitude: -121.786786221

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air

TC5992688.2s Page 158
FLOYDS COMPLETE SERVICES INC  (Continued)  1007074585

Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Q66  CLARKE FLOYD M  EDR Hist Auto  1021480631
Target FIRST AVE E & MAIN  N/A
Property NORTH BEND, WA  98045

Site 3 of 4 in cluster Q

Actual: 445 ft.

Focus Map: 12
Year: 1969  CLARKE FLOYD M  Gasoline Service Stations
Year: 1970  CLARKE FLOYD M  Gasoline Service Stations

R67  ARCO SELF SERVICE  EDR Hist Auto  1021492231
Target 201 N BEND BLVD N  N/A
Property NORTH BEND, WA  98045

Site 1 of 2 in cluster R

Actual: 444 ft.

Focus Map: 12
Year: 1995  ARCO SELF SERVICE  Gasoline Service Stations
Year: 1996  ARCO SELF SERVICE  Gasoline Service Stations

Q68  CLARKE FLOYD M  EDR Hist Auto  1021056428
Target 104 1ST AVE  N/A
Property NORTH BEND, WA  98045

Site 4 of 4 in cluster Q

Actual: 445 ft.

Focus Map: 12
Year: 1971  CLARKE FLOYD M  Gasoline Service Stations
Year: 1972  CLARKE FLOYD M  Gasoline Service Stations
Year: 1973  CLARKE FLOYD M  Gasoline Service Stations
Year: 1974  CLARKE FLOYD M  Gasoline Service Stations
Year: 1975  CLARKE FLOYD M  Gasoline Service Stations
Year: 1976  CLARKE FLOYD M  Gasoline Service Stations
Year: 1977  CLARKE FLOYD M  Gasoline Service Stations
Year: 1978  CLARKE FLOYD M  Gasoline Service Stations
Year: 1979  CLARKE FLOYD M  Gasoline Service Stations
Year: 1980  CLARKE FLOYD M  Gasoline Service Stations
Year: 1982  CLARKE FLOYD M  Gasoline Service Stations
Year: 1983  CLARKE FLOYD M  Gasoline Service Stations
Year: 1985  FLOYDS COMPLETE SERVICE INC  Gasoline Service Stations
Year: 1986  FLOYDS COMPLETE SERVICE INC  Gasoline Service Stations
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<th>Site</th>
<th>RESIDENCE E 3RD ST</th>
<th>WA RGA LUST</th>
<th>S115441835</th>
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<tr>
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Site 1 of 5 in cluster S

**Actual:** 448 ft.

**Focus Map:** 12

---

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Site 2 of 5 in cluster S

**Actual:** 448 ft.

**Focus Map:** 12

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<th>Interaction</th>
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<th>Ecology Program</th>
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<th>Facility Alt.</th>
<th>Program ID</th>
<th>Date Interaction</th>
<th>Date Interaction 3</th>
<th>Latitude</th>
<th>Longitude</th>
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**CSCSL NFA:**

**Name:** RESIDENCE GREW
**Address:** 349 E 3RD ST
**City, State, Zip:** NORTH BEND, WA 98045
**Facility/Site Id:** 608
**CS Id:** 86393988
**NFA Date:** 03/17/2000
**Alternate Site Names:** Not reported
**NFA Reason:** NFA-Voluntary Cleanup Program Review
**Site Status:** NFA
**Region:** Northwest
**Contaminant Name:** Petroleum Products-Unspecified
**Ground Water:** Not reported
**Surface Water:** Not reported
**Soil:** Remediated
**Sediment:** Not reported
**Air:** Not reported
**Bedrock:** Not reported
**Latitude:** 47.494463
**Longitude:** -121.7806223

**FINDS:**

**Registry ID:** 110015404604
RESIDENCE GREW (Continued)

Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registy_id=110015404604

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

S71  RESIDENCE GREW
Target 349 E. 3RD ST.
Property NORTH BEND, WA 98045

Site 3 of 5 in cluster S

Actual: 448 ft.
Focus Map: 12

ICR: Date Ecology Received Report: 11/21/97
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 98-15
County Code: 17
Contact: Not reported
Report Title: Not reported

S72  RESIDENCE GREW
Target 349 E 3RD ST
Property NORTH BEND, WA 98045

Site 4 of 5 in cluster S

Actual: 448 ft.
Focus Map: 12

VCP: Name: RESIDENCE GREW
Address: 349 E 3RD ST
City,State,Zip: NORTH BEND, WA 98045
edr_fstat: WA
edr_fzip: 98045
edr_fcnty: KING
edr_zip: Not reported
Facility ID: 86393888
VCP Status: Not reported
VCP: NFA
Ecology Status: Not reported
NFA Type: Not reported
Date NFA: 2000-03-17
Rank: Not reported
Cleanup Siteid: 608
Contaminant Name: Petroleum Products-Unspecified
Soil: Remediated
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<th>Elevation</th>
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<td>Actual: 449 ft. Focus Map: 12</td>
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<td>Site 5 of 5 in cluster S</td>
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<td>City, State, Zip: NORTH BEND, WA 980450000</td>
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<td></td>
<td>Contact: CARL LARSON</td>
</tr>
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NORTH BEND ELEMENTARY SCHOOL (Continued)

Trans 2 Name: Not reported
TSDF EPA ID: CAD044429835
Trans Name: Not reported
TSDF Alt EPA ID: Not reported
Trans Name: Not reported
CA Waste Code: 551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code: D007
Disposal Method: D99 - Disposal, Other
Quantity Tons: 0.005
Waste Quantity: 10
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

Shipment Date: 19980828
Creation Date: 12/7/1998 0:00:00
Receipt Date: 19980929
Manifest ID: 98342887
Trans EPA ID: WAD98175969
Trans Name: Not reported
Trans 2 EPA ID: DER000000968
Trans 2 Name: Not reported
TSDF EPA ID: CAD044429835
Trans Name: Not reported
TSDF Alt EPA ID: Not reported
TSDF Alt Name: Not reported
CA Waste Code: 551 - Laboratory waste chemicals 561 Detergent and soap
RCRA Code: D002
Disposal Method: D99 - Disposal, Other
Quantity Tons: 0.009
Waste Quantity: 18
Quantity Unit: P
Additional Code 1: Not reported
Additional Code 2: Not reported
Additional Code 3: Not reported
Additional Code 4: Not reported
Additional Code 5: Not reported

---

Site 1 of 3 in cluster T

T74  WA DNR NORTH BEND  WA UST  U001123387
Target  205 BALLARET  WA ALLSITES  N/A
Property NORTH BEND, WA  98045  WA CSCSL NFA

Actual: 446 ft.
Focus Map: 12

UST:
Name: WA DNR NORTH BEND
Address: 205 BALLARET
City: NORTH BEND
Zip: 98045
Facility ID: 32541339
Site Id: 3916
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.4948068819875
Decimal Longitude: -121.78369571365
### WA DNR NORTH BEND (Continued)

**Tank Name:** Not reported  
**Tag Number:** Not reported  
**Tank Status:** Removed  
**Tank Status Date:** 08/06/1996  
**Tank Install Date:** 12/31/1964  
**Tank Closure Date:** Not reported  
**Capacity Range:** 111 TO 1,100 Gallons  
**Tank Permit Expiration Date:** Not reported  
**Tank Upgrade Date:** Not reported  
**Tank Spill Prevention:** Not reported  
**Tank Overfill Prevention:** Not reported  
**Tank Material:** Not reported  
**Tank Construction:** Not reported  
**Tank Tightness Test:** Not reported  
**Tank Corrosion Protection:** Not reported  
**Tank Manifold:** Not reported  
**Tank Release Detection:** Not reported  
**Tank SFC Type:** Not reported  
**Pipe Material:** Not reported  
**Pipe Construction:** Not reported  
**Pipe Primary Release Detection:** Not reported  
**Pipe Second Release Detection:** Not reported  
**Pipe Corrosion Protection:** Not reported  
**Pipe Pumping System:** Not reported  
**Responsible Unit:** Northwest  
**Dispenser/Pump SFC Type:** Not reported

### ALLSITES:

**Name:** WA DNR NORTH BEND  
**Facility Id:** 32541339

**Interaction:** 118795  
**Interaction 1:** A  
**Interaction 2:** LUST  
**Ecology Program:** TOXICS  
**Program Data:** ISIS  
**Facility Alt.:** WA DNR NORTH BEND  
**Program ID:** 3916  
**Date Interaction:** 1991-04-16 00:00:00  
**Date Interaction 3:** LUST Facility  
**Latitude:** 47.494802184999998  
**Longitude:** -121.783681133

**Interaction:** 37969  
**Interaction 1:** I  
**Interaction 2:** UST  
**Ecology Program:** TOXICS  
**Program Data:** UST  
**Facility Alt.:** Not reported  
**Program ID:** 3916  
**Date Interaction:** 2000-03-20 00:00:00  
**Date Interaction 3:** Underground Storage Tank  
**Latitude:** 47.494802184999998  
**Longitude:** -121.783681133
CSCSL NFA:

Name: DNR NORTH BEND
Address: 223 E 2ND ST
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 32541339
CS Id: 8714
NFA Date: 02/15/2018
Alternate Site Names: WA DNR NORTH BEND
NFA Reason: NFA-Independent Cleanup Reviewed by Ecology
Site Status: NFA
Region: Northwest
Contaminant Name: Benzene
Ground Water: Remediated-Below
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.494806882
Longitude: -121.78369571

Name: DNR NORTH BEND
Address: 223 E 2ND ST
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 32541339
CS Id: 8714
NFA Date: 02/15/2018
Alternate Site Names: WA DNR NORTH BEND
NFA Reason: NFA-Independent Cleanup Reviewed by Ecology
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Diesel
Ground Water: Remediated-Below
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.494806882
Longitude: -121.78369571

Name: DNR NORTH BEND
Address: 223 E 2ND ST
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 32541339
CS Id: 8714
NFA Date: 02/15/2018
Alternate Site Names: WA DNR NORTH BEND
NFA Reason: NFA-Independent Cleanup Reviewed by Ecology
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Gasoline
Ground Water: Remediated-Below
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
### WA DNR NORTH BEND (Continued)

**Name:** DNR NORTH BEND  
**Address:** 223 E 2ND ST  
**City, State, Zip:** NORTH BEND, WA 98045  
**Facility/Site ID:** 32541339  
**Clean up Site ID:** Not reported  
**Cleanup Unit Type:** Not reported  
**Process Type:** Not reported  
**Cleanup Unit Name:** WA DNR NORTH BEND  
**Region:** Northwest  
**Contaminant Name:** Petroleum-Diesel  
**Ground Water:** Remediated-Below  
**Surface Water:** Not reported  
**Soil:** Remediated-Below  
**Sediment:** Not reported  
**Air:** Not reported  
**Latitude:** 47.49480682  
**Longitude:** -121.78369571

---

**Site 2 of 3 in cluster T**

**Actual:** 446 ft.  
**Focus Map:** 12

**Name:** DNR NORTH BEND  
**Address:** 223 E 2ND ST  
**City, State, Zip:** NORTH BEND, WA 98045  
**Facility ID:** 32541339  
**Lust Status Type:** LUST - NFA  
**Cleanup Site ID:** 8714  
**Cleanup Unit Type:** Not reported  
**Process Type:** Not reported  
**Cleanup Unit Name:** WA DNR NORTH BEND  
**Region:** Northwest  
**Clean up Site ID:** Not reported  
**Cleanup Unit Type:** Not reported  
**Process Type:** Not reported  
**Cleanup Unit Name:** WA DNR NORTH BEND  
**Response Section:** Northwest  
**Release Date:** 04/16/1991  
**Lust Date:** 02/15/2018  
**Lust ID:** 933  
**UST ID:** 3916  
**Contaminant Name:** Petroleum-Diesel  
**Ground Water:** Remediated-Below  
**Surface Water:** Not reported  
**Soil:** Remediated-Below  
**Sediment:** Not reported  
**Air:** Not reported  
**Latitude:** 47.49480682 / -121.78369571  

---

**Alternate Site Names:**  
**NFA-Independent Cleanup Reviewed by Ecology**  
**Site Status:** NFA
<table>
<thead>
<tr>
<th>Facility ID: 32541339</th>
<th>LUST Status Type: LUST - NFA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleanup Site ID: 8714</td>
<td>Clean-up Unit Type: Not reported</td>
</tr>
<tr>
<td>Process Type: Not reported</td>
<td>Clean-up Unit Name: WA DNR NORTH BEND</td>
</tr>
<tr>
<td>Response Section: Northwest</td>
<td>Release Date: 04/16/1991</td>
</tr>
<tr>
<td>Region: Northwest</td>
<td>Lust Date: 02/15/2018</td>
</tr>
<tr>
<td>Lust ID: 933</td>
<td>UST ID: 3916</td>
</tr>
<tr>
<td>Contaminant Name: Benzene</td>
<td>Remediated-Below Ground Water:</td>
</tr>
<tr>
<td>Surface Water: Not reported</td>
<td>Soil: Remediated-Below</td>
</tr>
<tr>
<td>Sediment: Not reported</td>
<td>Air: Not reported</td>
</tr>
<tr>
<td>Bedrock: Not reported</td>
<td>Lat/Long: 47.4948068 / -121.78369</td>
</tr>
</tbody>
</table>

Name: DNR NORTH BEND
Address: 223 E 2ND ST
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 32541339
LUST Status Type: LUST - NFA
Cleanup Site ID: 8714
Clean-up Unit Type: Not reported
Process Type: Not reported
Clean-up Unit Name: WA DNR NORTH BEND
Response Section: Northwest
Release Date: 04/16/1991
Lust Date: 02/15/2018
Region: Northwest
Lust ID: 933
UST ID: 3916
Contaminant Name: Petroleum-Other
Ground Water: Remediated-Below
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Lat/Long: 47.4948068 / -121.78369

Name: DNR NORTH BEND
Address: 223 E 2ND ST
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 32541339
LUST Status Type: LUST - NFA
Cleanup Site ID: 8714
Clean-up Unit Type: Not reported
Process Type: Not reported
Clean-up Unit Name: WA DNR NORTH BEND
Response Section: Northwest
Release Date: 04/16/1991
Lust Date: 02/15/2018
Region: Northwest
Lust ID: 933
UST ID: 3916
Contaminant Name: Petroleum-Other
Ground Water: Remediated-Below
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Lat/Long: 47.4948068 / -121.78369
**DNR NORTH BEND (Continued)**

<table>
<thead>
<tr>
<th>Region:</th>
<th>Northwest</th>
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<tbody>
<tr>
<td>Lust ID:</td>
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</tr>
<tr>
<td>UST ID:</td>
<td>3916</td>
</tr>
<tr>
<td>Contaminant Name:</td>
<td>Petroleum-Gasoline</td>
</tr>
<tr>
<td>Ground Water:</td>
<td>Remediated-Below</td>
</tr>
<tr>
<td>Surface Water:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Soil:</td>
<td>Remediated-Below</td>
</tr>
<tr>
<td>Sediment:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Air:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Bedrock:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Lat/Long:</td>
<td>47.4948068 / -121.78369</td>
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</table>

**Site 3 of 3 in cluster T**

<table>
<thead>
<tr>
<th>Actual:</th>
<th>446 ft.</th>
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</thead>
<tbody>
<tr>
<td>Focus Map:</td>
<td>12</td>
</tr>
<tr>
<td>Date Ecology Received Report:</td>
<td>12/04/91</td>
</tr>
<tr>
<td>Contaminants Found at Site:</td>
<td>Petroleum products</td>
</tr>
<tr>
<td>Media Contaminated:</td>
<td>Soil</td>
</tr>
</tbody>
</table>

---

**R77**

**DEPARTMENT OF NATURAL RESOURCES - NORTH BEND**

Target | 223 E. 2ND ST.  
Property | NORTH BEND, WA  98045  

**Site 2 of 2 in cluster R**

<table>
<thead>
<tr>
<th>Actual:</th>
<th>444 ft.</th>
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<tbody>
<tr>
<td>Focus Map:</td>
<td>12</td>
</tr>
<tr>
<td>Year:</td>
<td>1997</td>
</tr>
<tr>
<td>Name:</td>
<td>G &amp; S SERVICES INC</td>
</tr>
<tr>
<td>Type:</td>
<td>Gasoline Service Stations, NEC</td>
</tr>
</tbody>
</table>

| Year: | 1998   |
| Name: | G & S SERVICES INC |
| Type: | Gasoline Service Stations, NEC |

---

**U78**

**FALLS LAUNDRY INC**

Target | 125 E NORTH BEND WAY  
Property | NORTH BEND, WA  98045  

**Site 1 of 2 in cluster U**

<table>
<thead>
<tr>
<th>Actual:</th>
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<tr>
<td>Focus Map:</td>
<td>12</td>
</tr>
<tr>
<td>Year:</td>
<td>1982</td>
</tr>
<tr>
<td>Name:</td>
<td>FALLS LAUNDRY INC</td>
</tr>
<tr>
<td>Type:</td>
<td>Coin-Operated Laundries And Cleaning</td>
</tr>
</tbody>
</table>

| Year: | 1983   |
| Name: | FALLS LAUNDRY INC |
| Type: | Coin-Operated Laundries And Cleaning |

| Year: | 1985   |
| Name: | FALLS LAUNDRY INC |
| Type: | Coin-Operated Laundries And Cleaning |

| Year: | 1986   |
| Name: | FALLS LAUNDRY INC |
| Type: | Coin-Operated Laundries And Cleaning |

| Year: | 1987   |
| Name: | FALLS LAUNDRY INC |
| Type: | Coin-Operated Laundries And Cleaning |

| Year: | 1988   |
| Name: | FALLS LAUNDRY INC |
| Type: | Coin-Operated Laundries And Cleaning |

| Year: | 1989   |
| Name: | FALLS LAUNDRY INC |
| Type: | Coin-Operated Laundries And Cleaning, NEC |
### FALLS LAUNDRY INC (Continued)

<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
<th>Type</th>
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<tbody>
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<td>FALLS LAUNDRY INC</td>
<td>Coin-Operated Laundries And Cleaning, NEC</td>
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<td>2003</td>
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<td>2004</td>
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<tr>
<td>2008</td>
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### WALLACE WARREN A

<table>
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<th>Name</th>
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<tbody>
<tr>
<td>1969</td>
<td>WALLACE WARREN A</td>
<td>Gasoline Service Stations</td>
</tr>
<tr>
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### PLAT OF RIVER GLEN

<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
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</thead>
<tbody>
<tr>
<td>PLAT OF RIVER GLEN</td>
<td>PICKETT AVE,</td>
</tr>
<tr>
<td></td>
<td>NORTH BEND, WA 98045</td>
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<table>
<thead>
<tr>
<th>Site Number</th>
<th>Owner Name</th>
<th>Well Status</th>
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<tbody>
<tr>
<td>33405</td>
<td>River Glen Home Owner's Association</td>
<td>Active</td>
</tr>
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**PLAT OF RIVER GLEN (Continued)**

**V81 VIRGINIA MASON MED CLINIC**

**Property** NORTH BEND, WA 98045

**Site 1 of 5 in cluster V**

**Actual:** 446 ft.

**Focus Map:** 12

**LUST:**

- **Name:** VIRGINIA MASON MED CLINIC
- **Address:** 248 MAIN AVE S
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility ID:** 78819135
- **Lust Status Type:** LUST - NFA
- **Cleanup Site ID:** 6677
- **Cleanup Unit Name:** VIRGINIA MASON CLINIC NORTH BEND
- **Response Section:** Northwest
- **Release Date:** 02/11/1999
- **Lust Date:** 11/03/1999
- **Region:** Northwest
- **Lust ID:** 5205
- **UST ID:** 490589
- **Contaminant Name:** Petroleum-Other
- **Ground Water:** Confirmed Above Cleanup Levels
- **Surface Water:** Not reported
- **Soil:** Confirmed Above Cleanup Levels
- **Sediment:** Not reported
- **Air:** Not reported
- **Bedrock:** Not reported
- **Lat/Long:** 47.493824 / -121.78789

**ALLSITES:**

- **Name:** VIRGINIA MASON MED CLINIC
- **Facility Id:** 78819135
- **Interaction:** 64832
- **Interaction 1:** I
- **Interaction 2:** LUST
- **Ecology Program:** TOXICS
- **Program Data:** ISIS
- **Facility Alt.:** Not reported
- **Program ID:** 490589
- **Date Interaction:** 1999-02-11 00:00:00
- **Date Interaction 3:** LUST Facility
- **Latitude:** 47.493818329
- **Longitude:** -121.787876221

**MAP FINDINGS**

<table>
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<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
</tr>
</thead>
</table>

**EPA Well Type:** 5H1 - Stormwater
- **Latitude:** 47.494314
- **Longitude:** 121.76943
- **Well Name:** Trench 2
- **Registration Type:** Municipal Stormwater
- **Construction Date:** 10/12/2016
- **Construction Type:** Infiltration trench with perforated pipe
- **Depth:** 3
VIRGINIA MASON CLINIC NORTH BEND (Continued)

Zip: 98045
Facility ID: 78819135
Site Id: 490589
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.493824
Decimal Longitude: -121.787891

Tank Name: 1
Tag Number: Not reported
Tank Status: Exempt
Tank Status Date: 12/10/1999
Tank Install Date: 01/01/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ICR:
Date Ecology Received Report: 09/30/99
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 98-19
County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 11/03/99
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Final cleanup report
Site Register Issue: 98-19
County Code: 17
Contact: Not reported
Report Title: Not reported
V83 VIRGINIA MASON MED CLINIC
248 MAIN AVE S
NORTH BEND, WA 98045

Site 3 of 5 in cluster V

Actual: 446 ft.
Focus Map: 12

VCP:
Name: VIRGINIA MASON MED CLINIC
Address: 248 MAIN AVE S
City,State,Zip: NORTH BEND, WA 98045
edr_fststat: WA
edr_fzip: 98045
edr_fcnty: KING
edr_zip: Not reported
Facility ID: 78819135
VCP Status: Not reported
VCP: NFA
Ecology Status: Not reported
NFA Type: Not reported
Date NFA: 1999-11-03
Rank: Not reported
Cleanup Siteid: 6677
Contaminant Name: Petroleum-Other
Soil: Confirmed Above Cleanup Levels

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

V84 VIRGINIA MASON MED CLINIC
248 MAIN AVE S
NORTH BEND, WA 98045

Site 4 of 5 in cluster V

Actual: 446 ft.
Focus Map: 12

FINDS:
Registry ID: 110015416717
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_facility_url=registry_id=110015416717

V85 VIRGINIA MASON CLINIC - NORTH BEND
248 MAIN AVE S
NORTH BEND, WA

Site 5 of 5 in cluster V

Actual: 446 ft.
Focus Map: 12

RGA LUST:
1999 VIRGINIA MASON CLINIC - NORTH BEND 248 MAIN AVE S
Environmental Interest/Information System:

Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
J.O. BORGEN PLAZA (Continued)

ECHO:
Envid: 1015974739
Registry ID: 110054937404
DFR URL: http://echo.epa.gov/detailed-facility-report?id=110054937404

Site 2 of 3 in cluster W

Focus Map: 12

Actual: 445 ft.

LIGHTRECYCLE WASHINGTON ORGANIZATION

Name: LIGHTRECYCLE WASHINGTON ORGANIZATION
Address: 248 BENDIGO BOULEVARD SOUTH
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 1322
Service: Bartell Drugs - Bendigo Boulevard S.
Phone: 425-888-1672
Extension: Not reported
Website: https://www.lightrecycle.org/
Email: joanne.neugebauer-rex@ecy.wa.gov
Material Category: Household hazardous waste
Material Accepted: Light bulbs - Fluorescents
Contact Name: Joanne Neugebauer-Rex
Type: Commercial
Service Type: Dropoff
Light Recycle Participant: Yes
E-Cycle: No
Hours: Mon-Fri, 8am-10pm, Sat 8-10, Sun 8-10
Comments: Recycle up to 10 fluorescent lights (CFLs only) per day for FREE.

Name: LIGHTRECYCLE WASHINGTON ORGANIZATION
Address: 248 BENDIGO BOULEVARD SOUTH
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 1322
Service: Bartell Drugs - Bendigo Boulevard S.
Phone: 425-888-1672
Extension: Not reported
Website: https://www.lightrecycle.org/
Email: joanne.neugebauer-rex@ecy.wa.gov
Material Category: Household hazardous waste
Material Accepted: Light bulbs - Fluorescents
Contact Name: Joanne Neugebauer-Rex
Type: Residential
Service Type: Dropoff
Light Recycle Participant: Yes
E-Cycle: No
Hours: Mon-Fri, 8am-10pm, Sat 8-10, Sun 8-10
Comments: Recycle up to 10 fluorescent lights (CFLs only) per day for FREE.

JO BORGEN PLAZA

Name: JO BORGEN PLAZA
Facility Id: 4754
X89  WYRSCH GEORGE A JR  
**Target:** 221 1ST AVE E  
**Property:** NORTH BEND, WA  98045  

**Site 1 of 7 in cluster X**  
**Actual:** 446 ft.  
**Focus Map:**  
1969  WYRSCH GEORGE A JR  
1970  WYRSCH GEORGE A JR  
1971  WYRSCH GEORGE A JR  
1972  WYRSCH GEORGE A JR  
1973  WYRSCH GEORGE A JR  
1974  WYRSCH GEORGE A JR  
1975  WYRSCH GEORGE A JR  
1976  WYRSCH GEORGE A JR  
1977  WYRSCH GEORGE A JR  
1978  WYRSCH GEORGE G  
1979  WYRSCH GEORGE G  

---

X90  WYRSCH GEORGE G  
**Target:** 225 1ST AVE E  
**Property:** NORTH BEND, WA  98045  

**Site 2 of 7 in cluster X**  
**Actual:** 446 ft.  
**Focus Map:**  
1982  WYRSCH GEORGE G  
1983  WYRSCH GEORGE G  
1985  WYRSCH GEORGE G  
1986  WYRSCH GEORGE G  
1987  G & S SERVICES INC  

---

91  **WA SPILLS**  S118402674  
**Property:** NORTH BEND, WA  
**Focus Map:**  
**Actual:** 441 ft.  
**Name:** Not reported  
**Address:** Not reported  
**City, State, Zip:** NORTH BEND, WA  
**Facility ID:** 85327  
**Medium:** Fresh water  
**Material Desc:** LUBE OIL/MOTOR OIL  
**Material Qty:** 0.02  
**Material Units:** Not reported  
**Date Received:** Not reported  
**Contact Name:** Not reported  
**Incident Date:** 10/22/2015  
**Incident Category Type:** Oil Spill  
**Incident Category:** Oil Spill  
**Latitude:** 47.4939  
**Longitude:** -121.7966  
**Source Type:** Vehicle  
**Source:** Other - Vehicle
(Continued)

Vessel Facility Name2: Not reported
Recovered Quantity: 0.02
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: UPS FREIGHT

X92  NORTH BEND TEXACO  WA RGA LUST  S115439780  N/A
Target 225 E NORTH BEND WAY
Property NORTH BEND, WA

Site 3 of 7 in cluster X

Actual: 446 ft.
Focus Map: 12

2012 NORTH BEND TEXACO 225 E NORTH BEND WAY
2011 NORTH BEND TEXACO 225 E NORTH BEND WAY
2010 NORTH BEND TEXACO 225 E NORTH BEND WAY
2009 NORTH BEND TEXACO 225 E NORTH BEND WAY
2008 NORTH BEND TEXACO 225 E NORTH BEND WAY
2007 NORTH BEND TEXACO 225 E NORTH BEND WAY
2006 NORTH BEND TEXACO 225 E NORTH BEND WAY
2005 NORTH BEND TEXACO 225 E NORTH BEND WAY
2004 NORTH BEND TEXACO 225 E NORTH BEND WAY
2003 NORTH BEND TEXACO 225 E NORTH BEND WAY
2002 NORTH BEND TEXACO 225 E NORTH BEND WAY
2001 NORTH BEND TEXACO 225 E NORTH BEND WAY
2000 NORTH BEND TEXACO 225 E NORTH BEND WAY
1999 NORTH BEND TEXACO 225 E NORTH BEND WAY
1998 NORTH BEND TEXACO 225 E NORTH BEND WAY
1997 NORTH BEND TEXACO 225 E NORTH BEND WAY

X93  TEXACO  WA ICR  S103504990  N/A
Target 225 E. NORTH BEND WAY
Property NORTH BEND, WA  98045

Site 4 of 7 in cluster X

Actual: 446 ft.
Focus Map: 12

Date Ecology Received Report: 09/10/98
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 98-12
County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 11/12/96
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 94-48
County Code: 17
### TEXACO (Continued)

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**Site 5 of 7 in cluster X**

**Actual:** 446 ft.

**Focus Map:**

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**Properties and Addresses**

- **Target**: 225 E NORTH BEND WAY, NORTH BEND, WA 98045
- **Property**: NORTH BEND SHELL, NORTH BEND, WA 98045
- **Facility**: NORTH BEND TEXACO, 225 E NORTH BEND WAY, NORTH BEND, WA 98045

**Contaminant Name**: Petroleum-Other

**Has Institutional Control**: Not reported

**Past VCP**: Not reported

**Current VCP**: Not reported

**Ground Water**: Confirmed Above Cleanup Levels

**Surface Water**: Not reported

**Soil**: Confirmed Above Cleanup Levels

**Sediment**: Not reported

**Air**: Not reported

**Bedrock**: Not reported

**Responsible Unit**: Northwest

**LUST Status Type**: LUST - Cleanup Started

**Cleanup Site ID**: 10655

**Cleanup Unit Type**: Upland

**Process Type**: Independent Action

**Cleanup Unit Name**: NORTH BEND SHELL

**Response Section**: Northwest

**Release Date**: 06/10/1996
NORTH BEND SHELL (Continued)

Lust Date: 02/06/2013
Region: Northwest
Lust ID: 4379
UST ID: 2428
Contaminant Name: Petroleum-Other
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4939809 / -121.78453

UST:
Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045
Facility ID: Not reported
Site Id: 2428
Phone Number: Not reported

Tank Name: 1 DIESEL F
Tag Number: A3875
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1973
Tank Capacity: 5,000 to 9,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Single Wall Pipe
Pipe Material: Not reported
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Non-Safe Suction
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045
NORTH BEND SHELL (Continued)

Tank Name: 10 WASTE OIL
Tag Number: A3875
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 04/12/1985
Tank Closure Date: Not reported
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: 25 Gallons or less
Tank Overfill Prevention: 25 Gallons or less
Tank Material: Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank SFC Type: Not reported
Pipe Material: Steel
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Other
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Responsible Unit: Product Removed by Reclaimer
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 2 SUPREME F
Tag Number: A3875
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1973
Tank Closure Date: Not reported
Capacity Range: 2,001 to 4,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Not reported
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Non-Safe Suction
Responsible Unit: Northwest
NORTH BEND SHELL (Continued)

Not reported Dispenser/Pump SFC Type: North Bend Shell
Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 3 SUPREME F
Tag Number: A3875
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1973
Tank Closure Date: Not reported
Capacity Range: 2,001 to 4,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Not reported
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Non-Safe Suction
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 4 REGULAR
Tag Number: A3875
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1978
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
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Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
NORTH BEND SHELL  (Continued) U003026316

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 5 REGULAR
Tag Number: A3875
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1978
Tank Closure Date: Not reported
Tank Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: None
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Single Wall Tank
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Single Wall Pipe
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 6 UNLEADED
Tag Number: A3875
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1978
Tank Closure Date: Not reported
Tank Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
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NORTH BEND SHELL (Continued)  U003026316


Name: NORTH BEND SHELL  Address: 225 E NORTH BEND WAY  City: NORTH BEND  Zip: 98045

NORTH BEND SHELL (Continued)

Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: C
Tag Number: A3875
Tank Status: Operational
Tank Status Date: 10/12/1996
Tank Install Date: 06/10/1996
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: 12/31/2020
Tank Upgrade Date: 06/10/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Automatic Shutoff (fill pipe)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Sump
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Secondary Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: D
Tag Number: A3875
Tank Status: Operational
Tank Status Date: 10/12/1996
Tank Install Date: 06/10/1996
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: 12/31/2020
Tank Upgrade Date: 06/10/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Automatic Shutoff (fill pipe)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
## NORTH BEND SHELL (Continued)

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<td>Pipe Construction:</td>
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<td>Pipe Primary Release Detection:</td>
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<td>Pipe Second Release Detection:</td>
<td>Annual Line Tightness Test (LTT)</td>
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<td>Pipe Corrosion Protection:</td>
<td>Corrosion Resistant</td>
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<td>Pipe Pumping System:</td>
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### ALL SITES:

**Name:** NORTH BEND TEXACO  
**Facility Id:** 82682276

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<td>Interaction 2:</td>
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<tr>
<td>Ecology Program:</td>
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<td>Program Data:</td>
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<td>Facility Alt.:</td>
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### WA Financial Assurance 1:

**Name:** NORTH BEND SHELL  
**Address:** 225 E NORTH BEND WAY  
**City, State, Zip:** NORTH BEND, WA 98045  
**DOE Site ID:** 2428  
**Financial Resp Type:** COLONY INSURANCE COMPANY  
**Inception Date:** 12/31/2014  
**Expiration Date:** 12/31/2015  
**Address 2:** Not reported  
**Policy Number:** WA641299-5  
**Effective Date:** 12/31/2014  
**Liability Limit Type:** Mkgl, 1-100 tanks; 1m per occurrence, 1m aggregate  
**Compliance Method:** Approved pollution liability insurance  
**Proof of Responsibility Document Flag:** 0
NORTH BEND SHELL (Continued)

Retroactive Date: 01/01/1998
Latitude: 47.493980977
Longitude: -121.78453683

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
DOE Site ID: 2428
Financial Resp Type: COLONY INSURANCE COMPANY
Inception Date: 01/01/2018
Expiration Date: 12/31/2019
Address 2: Not reported
Policy Number: WA-641299-7
Effective Date: 01/01/2018
Liability Limit Type: Mktg, 1-100 tanks; 1m per occurrence, 1m aggregate
Compliance Method: Approved pollution liability insurance
Proof of Responsibility Document Flag: 0
Retroactive Date: 01/01/1998
Latitude: 47.493980977
Longitude: -121.78453683

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
DOE Site ID: 2428
Financial Resp Type: COLONY INSURANCE COMPANY
Inception Date: 12/31/2015
Expiration Date: 12/31/2016
Address 2: Not reported
Policy Number: WA641299-6
Effective Date: 12/31/2015
Liability Limit Type: Mktg, 1-100 tanks; 1m per occurrence, 1m aggregate
Compliance Method: Approved pollution liability insurance
Proof of Responsibility Document Flag: 0
Retroactive Date: 01/01/1998
Latitude: 47.493980977
Longitude: -121.78453683

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
DOE Site ID: 2428
Financial Resp Type: COLONY INSURANCE COMPANY
Inception Date: 12/31/2015
Expiration Date: 12/31/2016
Address 2: Not reported
Policy Number: WA641299-6
Effective Date: 12/31/2015
Liability Limit Type: Mktg, 1-100 tanks; 1m per occurrence, 1m aggregate
Compliance Method: Approved pollution liability insurance
Proof of Responsibility Document Flag: 0
Retroactive Date: 01/01/1998
Latitude: 47.493980977
Longitude: -121.78453683

Name: NORTH BEND SHELL
Address: 225 E NORTH BEND WAY
Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
### USTBUSY BEE STATION & CAFE 1007070716
#### Property
NORTH BEND, WA  98045

**Site 3 of 3 in cluster W**

<table>
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**Focus Map:**

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<td>Gasoline Service Stations</td>
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<td>1996</td>
<td>NORTH BEND CHEVRON</td>
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<tr>
<td>1997</td>
<td>NORTH BEND CHEVRON</td>
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### SPILLS: METRO TRANSIT
#### Target
MAIN AVE. SO. & EAST PARK ST.
#### Property
NORTH BEND, WA

**Actual:**

| 446 ft. |

**Focus Map:**

| 12 |

**SPILLS:**

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<tr>
<th>Name:</th>
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<tr>
<td>Address:</td>
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<tr>
<td>City, State, Zip:</td>
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### BUSY BEE STATION & CAFE
#### Target
352 E NORTH BEND WAY
#### Property
NORTH BEND, WA  98045

**Site 1 of 3 in cluster Y**

<table>
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**Focus Map:**

| 12 |

**UST:**

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BUSY BEE STATION & CAFE (Continued)

Decimal Longitude: -121.782801

Tank Name: 1-5000
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: BUSY BEE STATION & CAFE
Address: 352 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 2-3000
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
BUSY BEE STATION & CAFE (Continued)

Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: BUSY BEE STATION AND CAFE
Address: 352 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 3-3000
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: BUSY BEE STATION AND CAFE
Address: 352 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 4-1000
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
BUSY BEE STATION & CAFE (Continued)

Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: BUSY BEE STATION AND CAFE
Address: 352 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 5-500
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALLSITES:
Name: BUSY BEE STATION & CAFE
Facility Id: 43918675

Interaction: 44776
Interaction 1: I
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 101464
Date Interaction: 1991-12-05 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.492428328000003
BUSY BEE STATION & CAFE (Continued)

Longitude: -121.782786222

FINDS:
Registry ID: 110015473281
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015473281

Environmental Interest/Information System:
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Table: Map FINDINGS

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<tr>
<th>Y100</th>
<th>DINGFORD CREEK TRAIL ROAD</th>
<th>US BROWNFIELDS</th>
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<td>Property</td>
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Site 2 of 3 in cluster Y

Actual: 449 ft.
Focus Map: 12

US BROWNFIELDS:
Name: DINGFORD CREEK TRAIL ROAD
Address: NEAR DINGFORD CREEK TRAIL ROAD
City,State,Zip: NORTH BEND, WA 98045
Recipient Name: Public Health Seattle & King County
Grant Type: Assessment
Property Number: 2224106666
Parcel size: 1
Latitude: 47.49327
Longitude: -121.782669
HCM Label: Not reported
Map Scale: Not reported
Point of Reference: Not reported
Highlights: Not reported
Datum: Not reported
Acres Property ID: 16059
IC Data Access: Not reported
Start Date: Not reported
Redevelopment Completion Date: Not reported
Completed Date: Not reported
Acres Cleaned Up: Not reported
Cleanup Funding: Not reported
Cleanup Funding Source: Not reported
Assessment Funding: Not reported
Assessment Funding Source: Not reported
Redevelopment Funding: Not reported
Redev. Funding Source: Not reported
Redev. Funding Entity Name: Not reported
Redevelopment Start Date: Not reported
Assessment Funding Entity: Not reported
Cleanup Funding Entity: Not reported
Grant Type: N/A
Accomplishment Type: Not reported
Accomplishment Count: 0
### DINGFORD CREEK TRAIL ROAD (Continued)

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<td>Petro products cleaned:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Sediments found:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Sediments cleaned:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Soil affected:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Soil cleaned up:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Surface water cleaned:</td>
<td>Not reported</td>
</tr>
<tr>
<td>VOCs found:</td>
<td>Not reported</td>
</tr>
<tr>
<td>VOCs cleaned:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Cleanup other description:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Num. of cleanup and re-dev. jobs:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Past use greenspace acreage:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Past use residential acreage:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Surface Water:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Past use commercial acreage:</td>
<td>Not reported</td>
</tr>
</tbody>
</table>
DINGFORD CREEK TRAIL ROAD (Continued)

Past use industrial acreage: Not reported
Future use greenspace acreage: Not reported
Future use residential acreage: Not reported
Future use commercial acreage: Not reported
Future use industrial acreage: Not reported
Greenspace acreage and type: Not reported
Superfund Fed. landowner flag: Not reported
Arsenic cleaned up: Not reported
Cadmium cleaned up: Not reported
Chromium cleaned up: Not reported
Copper cleaned up: Not reported
Iron cleaned up: Not reported
mercury cleaned up: Not reported
Nickel Cleaned Up: Not reported
No clean up: Not reported
Pesticides cleaned up: Not reported
Selenium cleaned up: Not reported
SVOCs cleaned up: Not reported
Unknown clean up: Not reported
Arsenic contaminant found: Not reported
Cadmium contaminant found: Not reported
Chromium contaminant found: Not reported
Copper contaminant found: Not reported
Iron contaminant found: Not reported
Mercury contaminant found: Not reported
Nickel contaminant found: Not reported
No contaminant found: Not reported
Pesticides contaminant found: Not reported
Selenium contaminant found: Not reported
SVOCs contaminant found: Not reported
Unknown contaminant found: Not reported
Future Use: Multistory
Media affected Bluiding Material: Not reported
Media affected indoor air: Not reported
Building material media cleaned up: Not reported
Indoor air media cleaned up: Not reported
Unknown media cleaned up: Not reported
Past Use: Multistory
Property Description: Not reported
Below Poverty Number: 244
Below Poverty Percent: 12.7%
Meidan Income: 7287
Meidan Income Number: 499
Meidan Income Percent: 26.0%
Vacant Housing Number: 121
Vacant Housing Percent: 11.4%
Unemployed Number: 58
Unemployed Percent: 3.0%

FINDS:
Registry ID: 110060673739
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p__registry_id=110060673739

Environmental Interest/Information System:
US EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES)
is an federal online database for Brownfields Grantees to
DINGFORD CREEK TRAIL ROAD (Continued)
electronically submit data directly to EPA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Site 1 of 2 in cluster Z

Actual:
452 ft.

Focus Map:
12

Name: KING CNTY DEEP CREEK BRG NO 3644
Facility Id: 72714486
Interaction: 60917
Interaction 1: HAZWASTE
Interaction 2: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAR000000299
Date Interaction: 1995-02-24 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.493144328
Longitude: -121.77939522299999

102
KING COUNTY SECURE MEDICINE RETURN
Target 460 E NORTH BEND WAY
Property NORTH BEND, WA 98045

SWRCY:
Name: KING COUNTY SECURE MEDICINE RETURN
Address: 460 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 1625
Service: QFC Pharmacy #829
Phone: 425-888-2357
Website: https://kingcountysecuremedicinereturn.org/north-bend/
Extension: Not reported
Material Category: Household hazardous waste
Material Accepted: Medications
Contact Name: Not reported
Type: Residential
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: No
Hours: Call for hours
Comments: Safely dispose of the medicines you no longer need

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
KING COUNTY SECURE MEDICINE RETURN (Continued)

Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Computers & laptops
Contact Name: Not reported
Type: Residential
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Tablets
Contact Name: Not reported
Type: Residential
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Televisions (TVs)
Contact Name: Not reported
Type: Residential
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
KING COUNTY SECURE MEDICINE RETURN (Continued)

Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Monitors
Contact Name: Not reported
Type: Residential
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Portable DVD players
Contact Name: Not reported
Type: Residential
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Computers & laptops
Contact Name: Not reported
Type: Commercial
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Small businesses with less than 50 employees can use the E-Cycle WA program. Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Portable DVD players
Contact Name: Not reported
Type: Commercial
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Maximum weight per TV - 75 lbs.
KING COUNTY SECURE MEDICINE RETURN (Continued)

Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Tablets
Contact Name: Not reported
Type: Commercial
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Small businesses with less than 50 employees can use the E-Cycle WA program. Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Televisions (TVs)
Contact Name: Not reported
Type: Commercial
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Small businesses with less than 50 employees can use the E-Cycle WA program. Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
Address: 460 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Monitors
Contact Name: Not reported
Type: Commercial
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Small businesses with less than 50 employees can use the E-Cycle WA program. Maximum weight per TV - 75 lbs.

Name: NORTHWEST CENTER
KING COUNTY SECURE MEDICINE RETURN (Continued)

Address: 460 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 1627
Service: Northwest Center Truck at QFC North Bend
Phone: 1-800-992-2060
Extension: Not reported
Website: http://www.nwcenter.org
Email: Not reported
Material Category: Electronics
Material Accepted: Portable DVD players
Contact Name: Not reported
Type: Commercial
Service Type: Dropoff
Light Recycle Participant: No
E-Cycle: Yes
Hours: Daily 10am-4pm
Comments: Small businesses with less than 50 employees can use the E-Cycle WA program. Maximum weight per TV - 75 lbs.

Site 2 of 2 in cluster Z

Z103  KING CNTY DEEP CREEK BRG NO 3644  FINDS  1016262416
Target  FURY LAKE RD 7.5 MI N OF N FOR  ECHO  N/A
Property  NORTH BEND, WA 98045

Actual: 452 ft.
Focus Map: 12

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016262416
Registry ID: 110008227258
DFR URL: http://echo.epa.gov/detailed-facility-report?id=110008227258
### Site 1 of 3 in cluster AA

**Actual:**
- **Distance:** 457 ft.

**Focus Map:**
- **Map ID:** 13

**Registry ID:** http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_Facility URL=registry_id=110064389638

**Environmental Interest/Information System:**
- Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
- US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the

### Site 2 of 3 in cluster AA

**Actual:**
- **Distance:** 457 ft.

**Focus Map:**
- **Map ID:** 13

**Registry ID:** http://echo.epa.gov/detailed-facility-report?fid=110064389638

### Site 3 of 3 in cluster AA

**Actual:**
- **Distance:** 457 ft.

**Focus Map:**
- **Map ID:** 13

**Registry ID:** http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_program_facility?p_registry_id=110064389638
Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

RIVER GLEN (Continued)

discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Y107 UNOCAL SERVICE STN 2237
Target 330 & 354 E NORTH BEND WAY
Property NORTH BEND, WA 98045

Site 3 of 3 in cluster Y

Actual: 450 ft.
Focus Map: 12

CSCSL: UNOCAL 2237
Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Region: Northwest
Lat/Long: 47.493030187630 / -121.7819876857
Clean Up Siteid: 6630
Site Status: Cleanup Started
Contaminant Name: Benzene
Alternate Site Names: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Site Rank: Not reported
Has Institutional Control: True
Past VCP: Not reported
Current VCP: Not reported
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Region: Northwest
Lat/Long: 47.493030187630 / -121.7819876857
Clean Up Siteid: 6630
Site Status: Cleanup Started
Contaminant Name: Lead
Alternate Site Names: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: True
Current VCP: Not reported
Ground Water: Not reported
Surface Water: Not reported
Soil: Below Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
UNOCAL SERVICE STN 2237 (Continued)

Facility ID: 75685473
Region: Northwest
Lat/Long: 47.493030187630 / -121.7819876857
Clean Up Siteid: 6630
Site Status: Cleanup Started
Contaminant Name: Methyl tertiary-butyl ether
Alternate Site Names: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Site Rank: Not reported
Has Institutional Control: True
Past VCP: Not reported
Current VCP: Not reported
Ground Water: Not reported
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Region: Northwest
Lat/Long: 47.493030187630 / -121.7819876857
Clean Up Siteid: 6630
Site Status: Cleanup Started
Contaminant Name: Petroleum-Diesel
Alternate Site Names: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Site Rank: Not reported
Has Institutional Control: True
Past VCP: True
Current VCP: Not reported
Ground Water: Below Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Region: Northwest
Lat/Long: 47.493030187630 / -121.7819876857
Clean Up Siteid: 6630
Site Status: Cleanup Started
Contaminant Name: Petroleum-Gasoline
Alternate Site Names: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Site Rank: Not reported
Has Institutional Control: True
Past VCP: True
Current VCP: Not reported
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported

TC5992688.2s Page 205
UNOCAL SERVICE STN 2237 (Continued)

Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Region: Northwest
Lat/Long: 47.493030187630 / -121.7819876857
Clean Up Siteid: 6630
Site Status: Cleanup Started
Contaminant Name: Petroleum-Other
Alternate Site Names: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: True
Current VCP: Not reported
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

LUST:
Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 6630
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Response Section: Northwest
Release Date: 11/12/1999
Lust Date: 12/04/2001
Region: Northwest
Lust ID: 5418
UST ID: 518296
Contaminant Name: Petroleum-Diesel
Ground Water: Below Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4930301 / -121.78198

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 75685473
UNOCAL SERVICE STN 2237  (Continued)

Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 6630
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Response Section: Northwest
Release Date: 11/12/1999
Lust Date: 12/04/2001
Region: Northwest
Lust ID: 5418
UST ID: 518296
Contaminant Name: Petroleum-Gasoline
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4930301 / -121.78198

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 6630
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Response Section: Northwest
Release Date: 11/12/1999
Lust Date: 12/04/2001
Region: Northwest
Lust ID: 5418
UST ID: 518296
Contaminant Name: Methyl tertiary-butyl ether
Ground Water: Not reported
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4930301 / -121.78198

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 6630
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Response Section: Northwest
Release Date: 11/12/1999
Lust Date: 12/04/2001
Region: Northwest
UNOCAL SERVICE STN 2237  (Continued)  1007065616

Lust ID: 5418
UST ID: 518296
Contaminant Name: Benzene
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4930301 / -121.78198

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 6630
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Response Section: Northwest
Release Date: 11/12/1999
Lust Date: 12/04/2001
Region: Northwest
Lust ID: 5418
UST ID: 518296
Contaminant Name: Lead
Ground Water: Not reported
Surface Water: Not reported
Soil: Below Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4930301 / -121.78198

Name: UNOCAL 2237
Address: 330 & 354 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 75685473
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 6630
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: NOBLE PROPERTY, UNOCAL SERVICE STN 2237
Response Section: Northwest
Release Date: 11/12/1999
Lust Date: 12/04/2001
Region: Northwest
Lust ID: 5418
UST ID: 518296
Contaminant Name: Petroleum-Other
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
**UNOCAL SERVICE STN 2237 (Continued)**

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<tr>
<th>Lat/Long:</th>
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**UST:**

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<td>Address:</td>
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<tr>
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<tr>
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| Tank Name: | 1 |
| Tag Number: | Not reported |
| Tank Status: | Removed |
| Tank Status Date: | 07/05/2001 |
| Tank Install Date: | 01/01/1964 |
| Tank Closure Date: | Not reported |
| Capacity Range: | Not reported |
| Tank Permit Expiration Date: | Not reported |
| Tank Upgrade Date: | Not reported |
| Tank Spill Prevention: | Not reported |
| Tank Overfill Prevention: | Not reported |
| Tank Material: | Not reported |
| Tank Construction: | Not reported |
| Tank Tightness Test: | Not reported |
| Tank Corrosion Protection: | Not reported |
| Tank Manifold: | Not reported |
| Tank Release Detection: | Not reported |
| Tank SFC Type: | Not reported |
| Pipe Material: | Not reported |
| Pipe Construction: | Not reported |
| Pipe Primary Release Detection: | Not reported |
| Pipe Second Release Detection: | Not reported |
| Pipe Corrosion Protection: | Not reported |
| Pipe Pumping System: | Not reported |
| Responsible Unit: | Northwest |
| Dispenser/Pump SFC Type: | Not reported |

**ALLSITES:**

<table>
<thead>
<tr>
<th>Name:</th>
<th>UNOCAL SERVICE STN 2237</th>
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<tr>
<td>Facility Id:</td>
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| Interaction: | 62990 |
| Interaction 1: | I |
| Interaction 2: | VOLCLNST |
| Ecology Program: | TOXICS |
| Program Data: | ISIS |
| Facility Alt.: | UNOCAL SERVICE STN 2237 |
| Program ID: | NW0422 |
| Date Interaction: | 2000-03-13 00:00:00 |
| Date Interaction 3: | Voluntary Cleanup Sites |
| Latitude: | 47.49302451599999 |
| Longitude: | -121.781972908 |
## UNOCAL SERVICE STN 2237 (Continued)

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**FINDS:**
- Registry ID: 110015421881

**Environmental Interest/Information System:**
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015421881) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

---

**Target:** 312 E. PARK ST.  
**Property:** NORTHBEND, WA 98045

**Site 1 of 2 in cluster AB**

**Actual:** 448 ft.  
**Focus Map:** 12

[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015421881) while viewing on your computer to access additional ERNS detail in the EDR Site Report.
Site 1 of 4 in cluster AC

Actual: 450 ft.
Focus Map: 12

ALLSITES:
Name: NORTH BEND DRY CLEANERS
Facility Id: 19591

Interaction: 89479
Interaction 1: I
Interaction 2: LSC
Ecology Program: HAZWASTE
Program Data: LSC
Facility Alt.: North Bend Dry Cleaners
Program ID: Not reported
Date Interaction: 2009-03-03 00:00:00
Date Interaction 3: Local Source Cntrl 7/09-3
Latitude: 47.492942329000002
Longitude: -121.781531223

Site 2 of 2 in cluster AB

Actual: 448 ft.
Focus Map: 12

SPILLS:
Name: PSE
Address: 312 E PARK ST
City,State,Zip: NORTH BEND, WA 644691
Facility ID: 644691
Medium: IMPERMEABLE CONTAINMENT
Material Desc: PETROLEUM - MINERAL OIL
Material Qty: Not reported
Material Units: GALLON
Date Received: 10/17/2013
Contact Name: Not reported
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported
### AC111

**Target**
400 E NORTH BEND WAY

**Property**
NORTH BEND, WA 98045

**Site 2 of 4 in cluster AC**

**Actual:** 450 ft.

**Focus Map:**
12

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### AC112

**Target**
400 E NORTH BEND WAY

**Property**
NORTH BEND, WA 98045

**Site 3 of 4 in cluster AC**

**Actual:** 450 ft.

**Focus Map:**
12

**FINDS:**
Registry ID: 110040317485
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110040317485

*Environmental Interest/Information System:* Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

### AD113

**Target**
PICKETT AVE.

**Property**
NORTH BEND, WA 98045

**Site 1 of 2 in cluster AD**

**Actual:** 459 ft.

**Focus Map:**
13

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Actual: 454 ft.

Focus Map: 12

LUST:
- Name: NORTH BEND STP UST
- Address: 400 NORTH BEND BLVD
- City, State, Zip: NORTH BEND, WA 98045
- Facility ID: 38121329
- Lust Status Type: LUST - NFA
- Cleanup Site ID: 8964
- Cleanup Unit Type: Not reported
- Process Type: Not reported
- Cleanup Unit Name: NORTH BEND CITY OF, NORTH BEND CITY UST 10583, North Bend STP
- Response Section: Northwest
- Release Date: 12/21/1998
- Lust Date: 10/03/2011
- Region: Northwest
- Lust ID: 5216
- UST ID: 10583
- Contaminant Name: Petroleum-Other
- Ground Water: Not reported
- Surface Water: Not reported
- Soil: Remediated-Below
- Sediment: Not reported
- Air: Not reported
- Bedrock: Not reported
- Lat/Long: 47.499021 / -121.78533

NORTH BEND STP UST
- Name: NORTH BEND STP UST
- Address: 400 NORTH BEND BLVD
- City, State, Zip: NORTH BEND, WA 98045
- Facility ID: 38121329
- Lust Status Type: LUST - NFA
- Cleanup Site ID: 8964
- Cleanup Unit Type: Not reported
- Process Type: Not reported
- Cleanup Unit Name: NORTH BEND CITY OF, NORTH BEND CITY UST 10583, North Bend STP
- Response Section: Northwest
- Release Date: 12/21/1998
- Lust Date: 10/03/2011
- Region: Northwest
- Lust ID: 5216
- UST ID: 10583
- Contaminant Name: Petroleum-Diesel
- Ground Water: Not reported
- Surface Water: Not reported
- Soil: Remediated-Below
- Sediment: Not reported
- Air: Not reported
- Bedrock: Not reported
- Lat/Long: 47.499021 / -121.78533

ALLSITES:
- Name: NORTH BEND STP
- Facility Id: 38121329
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Program ID: 10583
Date Interaction: 2000-02-29 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.499014606999999
Longitude: -121.785319695

CSCSL NFA:
Name: NORTH BEND STP UST
Address: 400 NORTH BEND BLVD
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 38121329
CS Id: 8964
NFA Date: 10/03/2011
Alternate Site Names: NORTH BEND CITY OF,NORTH BEND CITY UST 10583,North Bend STP
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Diesel
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.499021
Longitude: -121.78533

Name: NORTH BEND STP UST
Address: 400 NORTH BEND BLVD
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 38121329
CS Id: 8964
NFA Date: 10/03/2011
Alternate Site Names: NORTH BEND CITY OF,NORTH BEND CITY UST 10583,North Bend STP
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Other
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.499021
Longitude: -121.78533

RCRA NonGen / NLR:
Date form received by agency: 2004-01-30 00:00:00.0
Facility name: NORTH BEND STP
Facility address: 400 NORTH BEND BLVD
EPA ID: WAR000000166
Mailing address: PO BOX 896
NORTH BEND STP (Continued)

Contact: PAT OSBORNE  
Contact address: PO BOX 896  
NORTH BEND, WA 98045  
Contact country: US  
Contact telephone: 425-888-0282  
Contact email: Not reported  
EPA Region: 10  
Land type: Municipal  
Classification: Non-Generator  
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:  
Owner/operator name: CITY OF NORTH BEND  
Owner/operator address: PO BOX 896  
NORTH BEND, WA 98045  
Owner/operator country: US  
Owner/operator telephone: 425-888-0282  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: NORTH BEND CITY  
Owner/operator address: PO BOX 898  
NORTH BEND, WA 98045  
Owner/operator country: US  
Owner/operator telephone: 000-000-0000  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Operator  
Owner/Op start date: Not reported  
Owner/Op end date: Not reported

Owner/operator name: NORTH BEND CITY  
Owner/operator address: 1155 E NORTH BEND WAY  
NORTH BEND, WA 98045  
Owner/operator country: US  
Owner/operator telephone: 000-000-0000  
Owner/operator email: Not reported  
Owner/operator fax: Not reported  
Owner/operator extension: Not reported  
Legal status: Private  
Owner/Operator Type: Owner  
Owner/Op start date: 1996-05-03 00:00:00  
Owner/Op end date: Not reported

Handler Activities Summary:  
U.S. importer of hazardous waste: No  
Mixed waste (haz. and radioactive): No  
Recycler of hazardous waste: No
NORTH BEND STP (Continued)

Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 2004-01-29 00:00:00.0
Site name: NORTH BEND STP
Classification: Not a generator, verified

Date form received by agency: 2004-01-29 00:00:00.0
Site name: NORTH BEND STP
Classification: Not a generator, verified

Date form received by agency: 2003-01-23 00:00:00.0
Site name: NORTH BEND STP
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2003-01-23 00:00:00.0
Site name: NORTH BEND STP
Classification: Not a generator, verified

Date form received by agency: 2002-02-13 00:00:00.0
Site name: NORTH BEND STP
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2000-02-25 00:00:00.0
Site name: NORTH BEND STP
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1999-01-13 00:00:00.0
Site name: NORTH BEND STP
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1997-12-31 00:00:00.0
Site name: NORTH BEND STP
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1997-06-30 00:00:00.0
Site name: NORTH BEND STP
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1997-06-30 00:00:00.0
Site name: NORTH BEND STP
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1993-12-31 00:00:00.0
Site name: NORTH BEND STP
Classification: Small Quantity Generator
NORTH BEND STP (Continued) 1000992993

Violation Status: No violations found

NPDES:
Name: NORTH BEND STP
Address: 400 NORTH BEND BLVD
City,State,Zip: NORTH BEND, WA 98045
Facility Status: Active
Facility Type: Municipal NPDES IP
Admin Region: Northwest
Date Issued: 12/21/2018
Latitude: 47.49902099
Longitude: -121.78533
Permit ID: WA0029351
Permit Version: 6
Permit Status: Active
Permit SubStatus: Issued
Ecology Contact: Laura Fricke
WRIA: Snohomish
Permit Expiration Date: 01/31/2024
Effective Date: 02/01/2019
Days to Expiration: 1569

Site 1 of 4 in cluster AE

AE115
Target Property
216 E PARK NORTH
NORTH BEND, WA

ASBESTOS: Not reported
Name: 216 E PARK NORTH
Address: NORTH BEND, WA
City,State,Zip: Not reported
Facility Type: Not reported
Parent ID: Not reported
Form ID: 1392671321462110
Notice Date: 03/17/2019
Start Date: 04/08/2019
Completion Date: 04/10/2019
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
(Continued)

Property Owner Company: ASBESTOS REMOVAL OF PGT SD LLC (EVERETT) (ABCN00001683)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
**LIGHTRECYCLE WASHINGTON ORGANIZATION**

**330 MAIN AVE. S**

**NORTH BEND, WA 98045**

**Name:** LIGHTRECYCLE WASHINGTON ORGANIZATION  
**Address:** 330 MAIN AVE. S  
**City,State,Zip:** NORTH BEND, WA 98045  
**Facility ID:** 1322  
**Service:** North Bend Ace Hardware  
**Phone:** 425-888-8569  
**Website:** https://www.lightrecycle.org/  
**Email:** joanne.neugebauer-rex@ecy.wa.gov  
**Material Category:** Household hazardous waste  
**Material Accepted:** Light bulbs - Fluorescents  
**Contact Name:** Joanne Neugebauer-Rex  
**Type:** Commercial  
**Service Type:** Dropoff  
**Light Recycle Participant:** Yes  
**E-Cycle:** No  
**Hours:** Mon-Sat, 7am-9pm; Sun, 8am-8pm  
**Comments:** Recycle up to 10 fluorescent lights, CFLs and HiDs per day for free.

---

**SWRCY:** S124427839

**Property:** NORTH BEND, WA 98045

**Target:** 330 MAIN AVE. S  
**Actual:** 448 ft.  
**Focus Map:** 12

**MAP FINDINGS**

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<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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**Other Resp Pro:** Not reported  
**Other Resp Pro Text:** Not reported  
**Comments:** Not reported  
**Date Time Submitted:** Not reported  
**Submitter IP Address:** Not reported  
**Region:** 2  
**UBI:** 604342779  
**Notice type:** Initial  
**Project Type:** Sheet Vinyl  
**Supervisor:** Corey Allen (abas00030889) ACTIVE  
**Supervisor Phone:** Not reported  
**Certificate Status:** ACTIVE
AC117

Target: 417 1ST AVE E
Property: NORTH BEND, WA 98045

Site 4 of 4 in cluster AC

Actual: 450 ft.
Focus Map: 12

Year: 1970
Name: GRINA DONALD D
Type: Gasoline Service Stations

AE118

Target: 228 E PARK AVE NORTH
Property: NORTH BEND, WA

Site 2 of 4 in cluster AE

Actual: 448 ft.
Focus Map: 12

Name: Not reported
Address: 228 E PARK AVE NORTH
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 139268#1440185777
Notice Date: 03/17/2019
Start Date: 04/10/2019
Completion Date: 04/12/2019
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: ASBESTOS REMOVAL OF PGT SD LLC (EVERETT) (ABCN00001683)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 604342779
Notice type: Initial
Project Type: Mastic
Supervisor: corey allen (abas00030889) ACTIVE
Supervisor Phone: Not reported
Certificate Status: ACTIVE
### Site 2 of 2 in cluster AD

**UIC:** PLAT OF RIVER GLEN  
**Address:** PICKETT AVE, NORTH BEND, WA 98045  
**Well Status:** Active  
**EPA Well Type:** 5H1 - Stormwater  
**Construction Date:** 10/12/2016  
**Construction Type:** Infiltration trench with perforated pipe  
**Depth:** 3 ft

### Site 1 of 2 in cluster AF

**UIC:** ASBESTOS  
**Address:** 411 MAIN AVE. SOUTH, NORTH BEND, WA  
**Notice Date:** 10/09/2009  
**Start Date:** 10/19/2009  
**Completion Date:** 10/30/2009  
**Initial:** Not reported  
**Amended:** Not reported  
**On Hold:** Not reported  
**Emergency:** Not reported  
**Site Hours Start:** Not reported  
**Site Hours End:** Not reported  
**Sunday:** Not reported  
**Monday:** Not reported  
**Tuesday:** Not reported  
**Wednesday:** Not reported  
**Thursday:** Not reported  
**Friday:** Not reported  
**Saturday:** Not reported  
**Contractor ID:** Not reported  
**Phone:** Not reported  
**Job Site CAS:** Not reported  
**Project Form Email:** Not reported  
**Property Owner Name:** Not reported  
**Property Owner Agent:** Not reported  
**Property Owner Company:** PERFORMANCE ABATEMENT SRVC INC (ABCN00001016)  
**Property Owner Address:** Not reported
| Property Owner City:          | Not reported |
| Property Owner State:        | Not reported |
| Property Owner Zip4:         | Not reported |
| Property Owner Phone:        | Not reported |
| Job Site Room:               | Not reported |
| Facility Age:                | Not reported |
| Facility Size:               | Not reported |
| Facility Remodel:            | Not reported |
| Facility Demo:               | Not reported |
| Facility Repair:             | Not reported |
| Facility Maint:              | Not reported |
| Removed:                    | Not reported |
| Encapsulated:               | Not reported |
| Quantity Sq Ft:             | Not reported |
| Fireproofing:               | Not reported |
| Popcorn Ceiling:            | Not reported |
| CAB:                        | Not reported |
| Sheet Vinyl:                | Not reported |
| Asbestos Paper:             | Not reported |
| Boiler Insulation:          | Not reported |
| Duct Paper:                 | Not reported |
| VAT:                        | Not reported |
| Roofing:                    | Not reported |
| Sq Ft Other:                | Not reported |
| Sq Ft Other Text:           | Not reported |
| Quantity Lin Ft:            | Not reported |
| Mag Pipe Insulation:        | Not reported |
| Air Cell Pipe Insulation:   | Not reported |
| Ducting Insulation:         | Not reported |
| Cement Asbestos Pipe:       | Not reported |
| Mudded Pipe Insulation:     | Not reported |
| Duct Tape:                  | Not reported |
| Lin Ft Other1:              | Not reported |
| Lin Ft Other1 Text:         | Not reported |
| Lin Ft Other2:              | Not reported |
| Lin Ft Other2 Text:         | Not reported |
| Indoors:                    | Not reported |
| Outdoors:                   | Not reported |
| Neg Pres Enclosure:         | Not reported |
| Glove Bag:                  | Not reported |
| Mini Enclosure:             | Not reported |
| Critical Barriers:          | Not reported |
| Wrap And Cut:               | Not reported |
| Wet Methods:                | Not reported |
| HEPA Vacuum:                | Not reported |
| MANUALMETHODS:              | Not reported |
| Other CM1:                  | Not reported |
| Other CM1 Text:             | Not reported |
| Other CM2:                  | Not reported |
| Other CM2 Text:             | Not reported |
| Half Mask APR:              | Not reported |
| Full Face APR:              | Not reported |
| PAPR:                       | Not reported |
| Type C Continuous:          | Not reported |
| Type C Pressure:            | Not reported |
| Other Resp Pro:             | Not reported |
| Other Resp Pro Text:        | Not reported |
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Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601018806
Notice type: Initial
Project Type: Sheet Vinyl
Supervisor: Mark Hamper
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 411 MAIN AVE, SOUTH
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 33186##1016Perfo866863
Notice Date: 10/28/2009
Start Date: 10/19/2009
Completion Date: 10/30/2009
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
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Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: PERFORMANCE ABATEMENT SRVC INC (ABCN00001016)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
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Quantity Sq Ft: Not reported
Fireproofing: Not reported
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- Popcorn Ceiling: Not reported
- CAB: Not reported
- Sheet Vinyl: Not reported
- Asbestos Paper: Not reported
- Boiler Insulation: Not reported
- Duct Paper: Not reported
- VAT: Not reported
- Roofing: Not reported
- Sq Ft Other: Not reported
- Sq Ft Other Text: Not reported
- Quantity Lin Ft: Not reported
- Mag Pipe Insulation: Not reported
- Air Cell Pipe Insulation: Not reported
- Ducting Insulation: Not reported
- Cement Asbestos Pipe: Not reported
- Mudded Pipe Insulation: Not reported
- Duct Tape: Not reported
- Lin Ft Other1: Not reported
- Lin Ft Other1 Text: Not reported
- Lin Ft Other2: Not reported
- Lin Ft Other2 Text: Not reported
- Indoors: Not reported
- Outdoors: Not reported
- Neg Pres Enclosure: Not reported
- Glove Bag: Not reported
- Mini Enclosure: Not reported
- Critical Barriers: Not reported
- Wrap And Cut: Not reported
- Wet Methods: Not reported
- HEPA Vacuum: Not reported
- MANUALMETHODS: Not reported
- Other CM1: Not reported
- Other CM1 Text: Not reported
- Other CM2: Not reported
- Other CM2 Text: Not reported
- Half Mask APR: Not reported
- Full Face APR: Not reported
- PAPR: Not reported
- Type C Continuous: Not reported
- Type C Pressure: Not reported
- Other Resp Pro: Not reported
- Other Resp Pro Text: Not reported
- Comments: Not reported
- Date Time Submitted: Not reported
- Submitter IP Address: Not reported
- Region: 2
- UBI: 601018806
- Notice type: Initial
- Project Type: Sheet Vinyl
- Supervisor: Mark Hamper ()
- Supervisor Phone: Not reported
- Certificate Status: ACTIVE

- Name: Not reported
- Address: 411 MAIN AVE. SOUTH
- City, State, Zip: NORTH BEND, WA
- Facility Type: Not reported
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<td>Ducting Insulation:</td>
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Muddled Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601018806
Notice type: Initial
Project Type: Sheet Vinyl
Supervisor: Mark Hamper ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE

121 WA ASBESTOS S121066415
NORTH BEND, WA 98045

ASBESTOS:
Name: Not reported
Address: 316 CEDAR AVE S
City,State,Zip: NORTH BEND, WA 98045
Facility Type: Commercial
Parent ID: 0
Form ID: 146974#1577Puget418535
Notice Date: 08/03/2017
Start Date: 08/17/2017
Completion Date: 08/18/2017
Initial: 1
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: 8:00 a.m.
Site Hours End: 5:00 p.m.
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: 1
Friday: 1
Saturday: Not reported
Contractor ID: Not reported
Phone: 4257576872
Job Site CAS: Josiah Moliga
Project Form Email: dan@pugetsoundabatement.com
Property Owner Name: Molly Peppler
Property Owner Agent: Not reported
Property Owner Company: Puget Sound Abatement LLC (ABCN00001577)
Property Owner Address: 316 Cedar Ave S
Property Owner City: North Bend
Property Owner State: WA
Property Owner Zip4: 98045
Property Owner Phone: 509-770-3347
Job Site Room: Not reported
Facility Age: 1976
Facility Size: 900
Facility Remodel: Not reported
Facility Demo: 1
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 191
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
Sq Ft Other Text: Drywall texture
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: 1
Glove Bag: Not reported
Mini Enclosure: 1
Critical Barriers: 1
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUAL METHODS: 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: 1
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: 2017-08-03 08:35:20
Submitter IP Address: 65.152.183.35
Region: 2
UBI: 603345715
Notice type: Initial
Project Type: Other Square Footage
Supervisor: Josiah Moliga ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 316 CEDAR AVENUE S UNIT #8
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 72366##1386Super709023
Notice Date: 06/05/2013
Start Date: 06/06/2013
Completion Date: 06/06/2013
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: Superior Cleaning & Restoration (ABC00001386)
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### AG122 WA SPILLS S122368877

**Target:** 468 E NORTHBEND WAY  
**Property:** NORTH BEND, WA  
**Site 1 of 2 in cluster AG**

- **Actual:** 451 ft.  
- **Focus Map:** 12

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<td>City, State, Zip</td>
<td>NORTH BEND, WA</td>
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<td>Material Desc.</td>
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<tr>
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### AG123 WA SPILLS S108894505

**Target:** 468 E NORTH BEND WY  
**Property:** NORTH BEND, WA  
**Site 2 of 2 in cluster AG**

- **Actual:** 451 ft.  
- **Focus Map:** 12

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Name: NORTHBEND 76
Address: 468 E NORTH BEND WY
City, State, Zip: NORTH BEND, WA
Facility ID: 601100
Medium: ODOR
Material Desc: ODOR
Material Qty: Not reported
Material Units: Not reported
Date Received: 12/03/2007
Contact Name: Not reported
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported
NEIGHBORING GAS STATION (Continued)

Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

AH124 QFC SHOPPING CENTER PLAZA
Target 470 E NORTH BEND WAY
Property NORTH BEND, WA  98045

Site 1 of 12 in cluster AH

Actual: 452 ft.
Focus Map: 12

UST:
Name: QFC SHOPPING CENTER PLAZA
Address: 470 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045
Facility ID: 95994624
Site Id: 496567
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.477855
Decimal Longitude: -121.751831

Tank Name: 1
Tag Number: Not reported
Tank Status: Exempt
Tank Status Date: 12/10/1999
Tank Install Date: 01/01/1990
Tank Closure Date: 04/21/1995
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALLSITES:
Name: QFC SHOPPING CENTER PLAZA
Facility Id: 95994624
QFC SHOPPING CENTER PLAZA (Continued)

| Interaction: | 74616 |
| Interaction 1: | I |
| Interaction 2: | UST |
| Ecology Program: | TOXICS |
| Program Data: | UST |
| Facility Alt.: | Not reported |
| Program ID: | 496567 |
| Date Interaction: | 1999-05-06 00:00:00 |
| Date Interaction 3: | Underground Storage Tank |
| Latitude: | 47.477849325999998 |
| Longitude: | -121.75181623100001 |

FINDS 1007062362

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing your computer to access additional FINDS: detail in the EDR Site Report.

Site 2 of 12 in cluster AH

AH125 QFC SHOPPING CENTER PLAZA
470 E NORTH BEND WAY
NORTH BEND, WA 98045

Actual: 452 ft.
Focus Map: 12

FINDS: 110015388999
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p__registry_id=110015388999

Site 3 of 4 in cluster AE

AE126 NORTH BEND
215 E PARK
NORTH BEND, WA 98045

Actual: 449 ft.
Focus Map: 12

UST:
Name: NORTH BEND
Address: 215 E PARK
City: NORTH BEND
Zip: 98045
Facility ID: 11551752
Site Id: 6878
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.494424
Decimal Longitude: -121.790622

Tank Name: 7581
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
NORTH BEND (Continued)

Tank Closure Date: Not reported
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Steel
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND
Address: 215 E PARK
City: NORTH BEND
Zip: 98045
Tank Name: 7582
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Steel
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported
Site 2 of 2 in cluster AF

**AF128**
**Target**
412 MAIN AVE S
**Property**
NORTH BEND, WA 98045

Actual: 449 ft.

Focus Map: 12

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<td>Drycleaning Plants, Except Rugs</td>
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**AF128**
**Target**
412 MAIN AVE S
**Property**
NORTH BEND, WA 98045

Actual: 449 ft.

Focus Map: 12

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<th>Type</th>
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<td>Drycleaning Plants, Except Rugs</td>
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<tr>
<td>1995</td>
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<td>2007</td>
<td>MOUNTSIDE DRY CLEANERS</td>
<td>Drycleaning Plants, Except Rugs</td>
</tr>
</tbody>
</table>

**Environmental Interest/Information System:**

Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015527553) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
MOUNTSIDE DRY CLEANERS (Continued) 1020045017

2008 MOUNTSIDE DRY CLEANERS Drycleaning Plants, Except Rugs
2009 MOUNTSIDE DRY CLEANERS Drycleaning Plants, Except Rugs
2010 MOUNTSIDE DRY CLEANERS Drycleaning Plants, Except Rugs
2011 MOUNTSIDE DRY CLEANERS Drycleaning Plants, Except Rugs
2012 MOUNTSIDE DRY CLEANERS Drycleaning Plants, Except Rugs

AI129 CITY OF NORTH BEND NE 3RD ST WA UIC S121083726
Target NE 3RD ST N/A
Property NORTH BEND, WA 98045 N/A

Site 1 of 2 in cluster AI

Actual: 461 ft.
Focus Map: 13

UIC:
Name: CITY OF NORTH BEND NE 3RD ST
Address: NE 3RD ST
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33406
Owner Name: City of North Bend
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.49223
Longitude: 121.7688
Well Name: Trench 6
Registration Type: Municipal Stormwater
Construction Date: 10/12/2016
Construction Type: Infiltration trench with perforated pipe
Depth: 3

Name: CITY OF NORTH BEND NE 3RD ST
Address: NE 3RD ST
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33406
Owner Name: City of North Bend
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.49223
Longitude: 121.7688
Well Name: Trench 5
Registration Type: Municipal Stormwater
Construction Date: 10/12/2016
Construction Type: Infiltration trench with perforated pipe
Depth: 3

Name: CITY OF NORTH BEND NE 3RD ST
Address: NE 3RD ST
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33406
Owner Name: City of North Bend
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.49223
Longitude: 121.7688
Well Name: Trench 4
Registration Type: Municipal Stormwater
Construction Date: 10/12/2016
Construction Type: Infiltration trench with perforated pipe
Depth: 3
### Site 2 of 2 in cluster AI

**Interaction:** 120336  
**Interaction 1:** A  
**Interaction 2:** UIC  
**Ecology Program:** WATQUAL  
**Program Data:** UIC  
**Facility Alt.:** City of North Bend NE 3rd St  
**Program ID:** 33406  
**Date Interaction:** 2016-10-12 00:00:00  
**Date Interaction 3:** Underground Injection Con  
**Latitude:** 47.492043500999998  
**Longitude:** -121.769982454

---

### Findings

**Registry ID:** 110066841868  
**Facility URL:** http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_Facility_URL=registry_id=110066841868  
**Environmental Interest/Information System:**  
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.  
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.  
**Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.**

**Registry ID:** 110066841868  
**DFR URL:** http://echo.epa.gov/detailed-facility-report?fid=110066841868

---

### Site Data

**Target:** SEC 424TH AVE SE & SE 120TH ST  
**Property:** NORTH BEND, WA  98045  
**Actual:** 459 ft.  
**Focus Map:** 13  
**Environmental Interest/Information System:**  
**Registry ID:** 110066841868  
**Facility URL:** http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_Facility_URL=registry_id=110066841868  
**Location:** CITY OF NORTH BEND NE 3RD ST  
**City:** NORTH BEND, WA  98045  
**Latitude:** 47.492043500999998  
**Longitude:** -121.769982454
AH132 WA RGA LUST
76 GAS STATION
NORTH BEND, WA

Site 3 of 12 in cluster AH

Actual: 453 ft.

Focus Map: 12

<table>
<thead>
<tr>
<th>SPILLS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: Not reported</td>
</tr>
<tr>
<td>Address: 76 GAS STATION</td>
</tr>
<tr>
<td>City,State,Zip: NORTH BEND, WA</td>
</tr>
<tr>
<td>Facility ID: 94320</td>
</tr>
<tr>
<td>Medium: Impermeable surface</td>
</tr>
<tr>
<td>Material Desc: DIESEL/MARINE GAS OIL</td>
</tr>
<tr>
<td>Material Qty: 0.5</td>
</tr>
<tr>
<td>Material Units: Not reported</td>
</tr>
<tr>
<td>Date Received: Not reported</td>
</tr>
<tr>
<td>Contact Name: Not reported</td>
</tr>
<tr>
<td>Incident Date: 06/29/2017</td>
</tr>
<tr>
<td>Incident Category Type: Oil Spill</td>
</tr>
<tr>
<td>Incident Category: Oil Spill</td>
</tr>
<tr>
<td>Latitude: 47.4921</td>
</tr>
<tr>
<td>Longitude: -121.78</td>
</tr>
<tr>
<td>Source Type: Facility</td>
</tr>
<tr>
<td>Source: Retail Petroleum Outlet</td>
</tr>
<tr>
<td>Vessel Facility Name2: Not reported</td>
</tr>
<tr>
<td>Recovered Quantity: Not reported</td>
</tr>
<tr>
<td>Resp Party Contact: Not reported</td>
</tr>
<tr>
<td>Cause: Not reported</td>
</tr>
<tr>
<td>Cause Type: Not reported</td>
</tr>
<tr>
<td>Resp Party Name: 76 GAS STATION</td>
</tr>
</tbody>
</table>

AH133 WA RGA HWS
520 E NORTH BEND WAY
NORTH BEND, WA

Site 4 of 12 in cluster AH

Actual: 520 E NORTH BEND WAY

Focus Map: 12

<table>
<thead>
<tr>
<th>RGA HWS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 NORTH BEND 76 520 E NORTH BEND WAY</td>
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<tr>
<td>2011 NORTH BEND 76 520 E NORTH BEND WAY</td>
</tr>
<tr>
<td>2010 NORTH BEND 76 520 E NORTH BEND WAY</td>
</tr>
<tr>
<td>2009 NORTH BEND 76 520 E NORTH BEND WAY</td>
</tr>
<tr>
<td>2008 NORTH BEND 76 520 E NORTH BEND WAY</td>
</tr>
</tbody>
</table>

AH134 WA RGA LUST
520 E NORTH BEND WAY
NORTH BEND, WA

Site 5 of 12 in cluster AH

Actual: 520 E NORTH BEND WAY

Focus Map: 12

<table>
<thead>
<tr>
<th>RGA LUST:</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 NORTH BEND 76 520 E NORTH BEND WAY</td>
</tr>
<tr>
<td>2011 NORTH BEND 76 520 E NORTH BEND WAY</td>
</tr>
</tbody>
</table>
Site 6 of 12 in cluster AH

Actual: 453 ft.

Name: NORTH BEND GASOLINE, INC
Address: 520 E N BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Site Number: 31347
Owner Name: North Bend Gasoline, Inc
Well Status: Active
EPA Well Type: 586 - Aquifer remediation
Latitude: 47.49219
Longitude: 121.78043
Well Name: Area 2
Registration Type: Voluntary or Independent Cleanup Sites
Construction Date: 06/01/2011
Construction Type: Not reported
Depth: 10

Name: NORTH BEND GASOLINE, INC
Address: 520 E N BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Site Number: 31347
Owner Name: North Bend Gasoline, Inc
Well Status: Active
EPA Well Type: 586 - Aquifer remediation
Latitude: 47.49219
Longitude: 121.78043
Well Name: Area 1
Registration Type: Voluntary or Independent Cleanup Sites
Construction Date: 05/01/2011
Construction Type: Not reported
Depth: 10

Site 7 of 12 in cluster AH

Actual: 453 ft.

Year: 1980
Name: STANDARD SERVICES & DISTN*
Type: Gasoline Service Stations

Year: 1982
Name: CLEARVIEW ENTERPRISES INC
Type: Gasoline Service Stations

Year: 1983
Name: CLEARVIEW ENTERPRISES INC
Type: Gasoline Service Stations

Year: 1991
Name: S SQUARED ENTERPRISES INC
Type: Gasoline Service Stations

Year: 1992
Name: S SQUARED ENTERPRISES INC
Type: Gasoline Service Stations

Year: 1993
Name: S SQUARED ENTERPRISES INC
Type: Gasoline Service Stations

Year: 1994
Name: S SQUARED ENTERPRISES INC
Type: Gasoline Service Stations

Year: 1995
Name: S SQUARED ENTERPRISES INC
Type: Gasoline Service Stations
<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>AH137</td>
<td>520 E NORTHBEND WY</td>
<td>NORTH BEND, WA</td>
<td>Actual: 453 ft.</td>
<td>Site 8 of 12 in cluster AH</td>
<td>WA SPILLS</td>
<td>S116363916</td>
</tr>
<tr>
<td>AH138</td>
<td>520 EAST NORTHBEND WAY</td>
<td>NORTH BEND, WA</td>
<td>Site 9 of 12 in cluster AH</td>
<td>CLICK HYPERLINK while viewing on your computer to access additional ERNS detail in the EDR Site Report.</td>
<td>ERNS</td>
<td>2014080814</td>
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<tr>
<td>AH139</td>
<td>NORTH BEND 76</td>
<td>520 E NORTH BEND WAY</td>
<td>NORTH BEND, WA 98045</td>
<td>Site 10 of 12 in cluster AH</td>
<td>WA VCP</td>
<td>S124434412</td>
</tr>
</tbody>
</table>

**AH137**

**Target Property**

**Site:** 520 E NORTHBEND WY

**City, State, Zip:** NORTH BEND, WA 98045

**Actual:** 453 ft.

**Focus Map:** 12

**Name:** Not reported

**Address:** 520 E NORTHBEND WY

**City, State, Zip:** NORTH BEND, WA 98045

**Facility ID:** 648333

**Medium:** AIR

**Material Desc:** OTHER - SEE NOTE

**Material Qty:** 0

**Material Units:** ACRE

**Date Received:** Not reported

**Contact Name:** UNKNOWN

**Incident Date:** Not reported

**Incident Category Type:** Not reported

**Incident Category:** Not reported

**Incident Category Type:** Not reported

**Incident Category:** Not reported

**Latitude:** Not reported

**Longitude:** Not reported

**Source Type:** Not reported

**Source:** Not reported

**Vessel Facility Name2:** Not reported

**Recovered Quantity:** Not reported

**Resp Party Contact:** Not reported

**Cause:** Not reported

**Cause Type:** Not reported

**Resp Party Name:** Not reported

**AH138**

**Target Property**

**Site:** 520 EAST NORTHBEND WAY

**City, State, Zip:** NORTH BEND, WA 98045

**Actual:** 453 ft.

**Focus Map:** 12

**AH139**

**Target Property**

**Site:** 520 E NORTH BEND WAY

**City, State, Zip:** NORTH BEND, WA 98045

**Actual:** 453 ft.

**Focus Map:** 12

**Name:** NORTH BEND 76

**Address:** 520 E NORTH BEND WAY

**City, State, Zip:** NORTH BEND, WA 98045

**edr_fstat:** WA

**edr_ftzips:** 98045

**edr_fcnty:** KING

**edr_zip:** Not reported
NORTH BEND 76 (Continued)

Facility ID: 4364196
VCP Status: Not reported
VCP: TRUE
Ecology Status: Not reported
NFA Type: Not reported
Date NFA: Not reported
Rank: Not reported
Cleanup SiteID: 5336
Contaminant Name: Benzene
Soil: Confirmed Above Cleanup Levels

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
edr_fstat: WA
edr_fzip: 98045
edr_fcnty: KING
edr_zip: Not reported
Facility ID: 4364196
VCP Status: Not reported
VCP: TRUE
Ecology Status: Not reported
NFA Type: Not reported
Date NFA: Not reported
Rank: Not reported
Cleanup SiteID: 5336
Contaminant Name: Non-Halogenated Solvents
Soil: Confirmed Above Cleanup Levels

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
edr_fstat: WA
edr_fzip: 98045
edr_fcnty: KING
edr_zip: Not reported
Facility ID: 4364196
VCP Status: Not reported
VCP: TRUE
Ecology Status: Not reported
NFA Type: Not reported
Date NFA: Not reported
Rank: Not reported
Cleanup SiteID: 5336
Contaminant Name: Petroleum-Gasoline
Soil: Confirmed Above Cleanup Levels
NORTH BEND 76 (Continued)  

**LIBERTY SURPLUS INSURANCE CORP**  
Financial Resp Type:  
Inception Date: 05/06/2013  
Expiration Date: 03/29/2014  
Address 2: Not reported  
Policy Number: TXESF104453112  
Effective Date: 03/29/2013  
Liability Limit Type: Not reported  
Compliance Method: Not reported  
Proof of Responsibility Document Flag: Not reported  
Retroactive Date: Not reported  
Latitude: 47.490984  
Longitude: -121.779911  

Name: NORTH BEND 76  
Address: 520 E NORTH BEND WAY  
City, State, Zip: NORTH BEND, WA 98045  
DOE Site ID: 8108  
Financial Resp Type: GREAT AMERICAN E&S INSURANCE CO  
Inception Date: 03/24/2017  
Expiration Date: 03/29/2018  
Address 2: Not reported  
Policy Number: BTA 9990973-03  
Effective Date: 03/24/2017  
Liability Limit Type: Not reported  
Compliance Method: Not reported  
Proof of Responsibility Document Flag: Not reported  
Retroactive Date: Not reported  
Latitude: 47.490984  
Longitude: -121.779911  

Name: NORTH BEND 76  
Address: 520 E NORTH BEND WAY  
City, State, Zip: NORTH BEND, WA 98045  
DOE Site ID: 8108  
Financial Resp Type: GREAT AMERICAN E&S INSURANCE CO  
Inception Date: 03/07/2018  
Expiration Date: 03/29/2019  
Address 2: Not reported  
Policy Number: BTA 9990973-04  
Effective Date: 03/07/2018  
Liability Limit Type: Not reported  
Compliance Method: Not reported  
Proof of Responsibility Document Flag: Not reported  
Retroactive Date: Not reported  
Latitude: 47.490984  
Longitude: -121.779911  

Name: NORTH BEND 76  
Address: 520 E NORTH BEND WAY  
City, State, Zip: NORTH BEND, WA 98045  
DOE Site ID: 8108  
Financial Resp Type: GREAT AMERICAN E&S INSURANCE CO  
Inception Date: 03/22/2016  
Expiration Date: 03/29/2017  
Address 2: Not reported  
Policy Number: BTA 9990973-02  
Effective Date: 03/22/2016  

---

**GREAT AMERICAN E&S INSURANCE CO**  
Financial Resp Type:  
Inception Date: 03/24/2017  
Expiration Date: 03/29/2018  
Address 2: Not reported  
Policy Number: BTA 9990973-03  
Effective Date: 03/24/2017  
Liability Limit Type: Not reported  
Compliance Method: Not reported  
Proof of Responsibility Document Flag: Not reported  
Retroactive Date: Not reported  
Latitude: 47.490984  
Longitude: -121.779911  

Name: NORTH BEND 76  
Address: 520 E NORTH BEND WAY  
City, State, Zip: NORTH BEND, WA 98045  
DOE Site ID: 8108  
Financial Resp Type: GREAT AMERICAN E&S INSURANCE CO  
Inception Date: 03/07/2018  
Expiration Date: 03/29/2019  
Address 2: Not reported  
Policy Number: BTA 9990973-04  
Effective Date: 03/07/2018  
Liability Limit Type: Not reported  
Compliance Method: Not reported  
Proof of Responsibility Document Flag: Not reported  
Retroactive Date: Not reported  
Latitude: 47.490984  
Longitude: -121.779911  

Name: NORTH BEND 76  
Address: 520 E NORTH BEND WAY  
City, State, Zip: NORTH BEND, WA 98045  
DOE Site ID: 8108  
Financial Resp Type: GREAT AMERICAN E&S INSURANCE CO  
Inception Date: 03/22/2016  
Expiration Date: 03/29/2017  
Address 2: Not reported  
Policy Number: BTA 9990973-02  
Effective Date: 03/22/2016
NORTH BEND 76 (Continued)

<table>
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<tr>
<th>Liability Limit Type:</th>
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<tbody>
<tr>
<td>Compliance Method:</td>
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<tr>
<td>Retroactive Date:</td>
<td>Not reported</td>
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<td>Latitude:</td>
<td>47.490984</td>
</tr>
<tr>
<td>Longitude:</td>
<td>-121.779911</td>
</tr>
</tbody>
</table>

AH141

Target: 520 E NORTH BEND WAY

Property: NORTH BEND, WA 98045

Site 12 of 12 in cluster AH

Actual: 453 ft.

Focus Map: 12

CSCSL:

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 4364196
Region: Northwest
Lat/Long: 47.490984 / -121.779911
Clean Up Siteid: 5336
Site Status: Cleanup Started
Contaminant Name: Benzene
Alternate Site Names: PAUL BUNYAN MARKET
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: True
Current VCP: True
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Confirmed Above Cleanup Levels
Air: Confirmed Above Cleanup Levels
Bedrock: Not reported
Responsible Unit: Northwest

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 4364196
Region: Northwest
Lat/Long: 47.490984 / -121.779911
Clean Up Siteid: 5336
Site Status: Cleanup Started
Contaminant Name: Non-Halogenated Solvents
Alternate Site Names: PAUL BUNYAN MARKET
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: True
Current VCP: True
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Confirmed Above Cleanup Levels
Bedrock: Not reported
Responsible Unit: Northwest
NORTH BEND 76 (Continued)

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 4364196
Region: Northwest
Lat/Long: 47.49084° / -121.77991°
Clean-Up Site ID: 5336
Site Status: Cleanup Started
Contaminant Name: Petroleum-Gasoline
Alternate Site Names: PAUL BUNYAN MARKET
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: True
Current VCP: True
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Confirmed Above Cleanup Levels
Bedrock: Not reported
Responsible Unit: Northwest

LUST:
Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 4364196
Lust Status Type: LUST - Awaiting Cleanup
Cleanup Site ID: 5336
Cleanup Unit Type: Upland
Process Type: Voluntary Cleanup Program
Cleanup Unit Name: PAUL BUNYAN MARKET
Response Section: Northwest
Release Date: 10/02/2007
Lust Date: 10/02/2007
Region: Northwest
Lust ID: 6329
UST ID: 8108
Contaminant Name: Non-Halogenated Solvents
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Confirmed Above Cleanup Levels
Bedrock: Not reported
Lat/Long: 47.49084° / -121.77991°

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 4364196
Lust Status Type: LUST - Awaiting Cleanup
Cleanup Site ID: 5336
Cleanup Unit Type: Upland
Process Type: Voluntary Cleanup Program
Cleanup Unit Name: PAUL BUNYAN MARKET
Response Section: Northwest
NORTH BEND 76 (Continued) 1007078478

Release Date: 10/02/2007
Lust Date: 10/02/2007
Region: Northwest
Lust ID: 6329
UST ID: 8108
Contaminant Name: Benzene
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Confirmed Above Cleanup Levels
Bedrock: Not reported
Lat/Long: 47.490984 / -121.77991

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 4364196
Lust Status Type: LUST - Awaiting Cleanup
Cleanup Site ID: 5336
Cleanup Unit Type: Upland
Process Type: Voluntary Cleanup Program
Cleanup Unit Name: PAUL BUNYAN MARKET
Response Section: Northwest
Release Date: 10/02/2007
Lust Date: 10/02/2007
Region: Northwest
Lust ID: 6329
UST ID: 8108
Contaminant Name: Petroleum-Gasoline
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Confirmed Above Cleanup Levels
Bedrock: Not reported
Lat/Long: 47.490984 / -121.77991

UST:
Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045
Facility ID: 4364196
Site Id: 8108
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.490984
Decimal Longitude: -121.779911

Tank Name: 1
Tag Number: A8570
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
NORTH BEND 76 (Continued)

Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 2
Tag Number: A8570
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045
### NORTH BEND 76 (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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<tbody>
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</tr>
<tr>
<td>Tag Number:</td>
<td>A8570</td>
</tr>
<tr>
<td>Tank Status:</td>
<td>Removed</td>
</tr>
<tr>
<td>Tank Status Date:</td>
<td>08/06/1996</td>
</tr>
<tr>
<td>Tank Install Date:</td>
<td>12/31/1964</td>
</tr>
<tr>
<td>Tank Closure Date:</td>
<td>Not reported</td>
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<tr>
<td>Capacity Range:</td>
<td>Not reported</td>
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<tr>
<td>Tank Permit Expiration Date:</td>
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</tr>
<tr>
<td>Tank Upgrade Date:</td>
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<tr>
<td>Tank Spill Prevention:</td>
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<tr>
<td>Tank Material:</td>
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<tr>
<td>Tank Tightness Test:</td>
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</tr>
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<td>Tank Corrosion Protection:</td>
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</tr>
<tr>
<td>Tank Manifold:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Tank Release Detection:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Tank SFC Type:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Pipe Material:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Pipe Construction:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Pipe Primary Release Detection:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Pipe Second Release Detection:</td>
<td>Not reported</td>
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<tr>
<td>Pipe Corrosion Protection:</td>
<td>Not reported</td>
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<td>Pipe Pumping System:</td>
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</tr>
<tr>
<td>Responsible Unit:</td>
<td>Northwest</td>
</tr>
<tr>
<td>Dispenser/Pump SFC Type:</td>
<td>Not reported</td>
</tr>
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</table>

Name: NORTH BEND 76  
Address: 520 E NORTH BEND WAY  
City: NORTH BEND  
Zip: 98045

| Tank Name:                        | 4                        |
| Tag Number:                       | A8570                    |
| Tank Status:                      | Operational              |
| Tank Status Date:                 | 08/06/1996               |
| Tank Install Date:                | 03/09/1990               |
| Tank Closure Date:                | Not reported              |
| Capacity Range:                   | 10,000 to 19,999 Gallons |
| Tank Permit Expiration Date:      | 01/31/2020               |
| Tank Upgrade Date:                | 04/01/1998               |
| Tank Spill Prevention:            | Spill Bucket/Spill Box   |
| Tank Overfill Prevention:         | Overfill Alarm           |
| Tank Material:                    | Dielectric Coated Steel  |
| Tank Construction:                | Single Wall Tank         |
| Tank Tightness Test:              | Part of Automatic Tank Gauging (ATG) System                         |
| Tank Corrosion Protection:        | Impressed Current        |
| Tank Manifold:                    | Auxiliary                |
| Tank Release Detection:           | Automatic Tank Gauging   |
| Tank SFC Type:                    | Galvanic Anode           |
| Pipe Material:                    | Fiberglass               |
| Pipe Construction:                | Single Wall Pipe         |
| Pipe Primary Release Detection:   | Automatic Line Leak Detector (ALLD)                                 |
| Pipe Second Release Detection:    | Annual Line Tightness Test (LTT)                                    |
| Pipe Corrosion Protection:        | Corrosion Resistant      |
| Pipe Pumping System:              | Pressurized System       |
| Responsible Unit:                 | Northwest                |

TC5992688.2s  Page 250
NORTH BEND 76 (Continued)

Dispenser/Pump SFC Type: Sump

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 5
Tag Number: A8570
Tank Status: Operational
Tank Status Date: 08/06/1996
Tank Install Date: 03/09/1990
Tank Closure Date: Not reported
Capacity Range: 5,000 to 9,999 Gallons
Tank Permit Expiration Date: 01/31/2020
Tank Upgrade Date: 04/01/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Dielectric Coated Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Impressed Current
Tank Manifold: Automatic Tank Gauging
Tank Release Detection: Galvanic Anode
Tank SFC Type: Fiberglass
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump

Name: NORTH BEND 76
Address: 520 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 6
Tag Number: A8570
Tank Status: Operational
Tank Status Date: 08/06/1996
Tank Install Date: 03/09/1990
Tank Closure Date: Not reported
Capacity Range: 5,000 to 9,999 Gallons
Tank Permit Expiration Date: 01/31/2020
Tank Upgrade Date: 04/01/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Dielectric Coated Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Impressed Current
Tank Manifold: Main
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Galvanic Anode
Pipe Material: Fiberglass
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump

ALLSITES:
Name: NORTH BEND 76
Facility Id: 4364196

Interaction: 94724
Interaction 1: A
Interaction 2: VOLCLNST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: NORTH BEND 76
Program ID: NW2349
Date Interaction: 2010-11-10 00:00:00
Date Interaction 3: Voluntary Cleanup Sites
Latitude: 47.490978327999997
Longitude: -121.77989622299999

Interaction: 14540
Interaction 1: A
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 8108
Date Interaction: 2000-03-20 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.490978327999997
Longitude: -121.77989622299999

Interaction: 14542
Interaction 1: I
Interaction 2: VOLCLNST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: NORTH BEND 76
Program ID: NW1922
Date Interaction: 2008-04-10 00:00:00
Date Interaction 3: Voluntary Cleanup Sites
Latitude: 47.490978327999997
Longitude: -121.77989622299999

Interaction: 88973
Interaction 1: A
Interaction 2: ENFORFNL
Ecology Program: TOXICS
Program Data: DMS
NORTH BEND 76 (Continued) 1007078478

Facility Alt.: Not reported
Program ID: Not reported
Date Interaction: 2009-12-03 00:00:00
Date Interaction 3: Enforcement Final
Latitude: 47.49097832799997
Longitude: -121.77989622299999

Interaction: 14541
Interaction 1: A
Interaction 2: LUST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: Not reported
Program ID: 8108
Date Interaction: 2007-10-02 00:00:00
Date Interaction 3: LUST Facility
Latitude: 47.49097832799997
Longitude: -121.77989622299999

FINDS:
Registry ID: 110015551678
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015551678

Environmental Interest/Information System:
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

AJ142 NORTH BEND 76 WA SPILLS S108894518
Target 468 - 482 E NORTH BEND WAY N/A
Property NORTH BEND, WA

Site 1 of 5 in cluster AJ

Actual: 453 ft.
Focus Map: 12

SPILLS:
Name: NORTH BEND 76
Address: 468 - 482 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA
Facility ID: 601100
Medium: Not reported
Material Desc: OTHER - SEE NOTE
Material Qty: Not reported
Material Units: Not reported
Date Received: 11/13/2007
Contact Name: Not reported
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
NORTH BEND 76 (Continued)

Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

143 WA SPILLS S105685446

Target 209 THRASHER AVE
Property NORTH BEND, WA

SPILLS:
Name: Not reported
Address: 209 THRASHER AVE
City, State, Zip: NORTH BEND, WA
Facility ID: 530501
Medium: Not reported
Material Desc: CHEMICAL
Material Qty: Not reported
Material Units: Not reported
Date Received: 11/27/2002
Contact Name: UNK
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

AJ144 PHOENIX PLAZA WA ALLSITES S121970746
Target 530 E NORTH BEND WAY
Property NORTH BEND, WA 98045

Site 2 of 5 in cluster AJ

Actual: ALLSITES:
Name: PHOENIX PLAZA
Facility Id: 88757

NPDES:
Name: PHOENIX PLAZA
Address: 530 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility Status: Not reported
Facility Type: Construction SW GP
Admin Region: Headquarters
Date Issued: 11/18/2015
PHOENIX PLAZA  (Continued)

Latitude:  Not reported
Longitude:  Not reported
Permit ID:  WAR306309
Permit Version:  Not reported
Permit Status:  Active
Permit SubStatus:  Not reported
Ecology Contact:  Not reported
WRM:  Not reported
Permit Expiration Date:  12/31/2020
Effective Date:  03/19/2018
Days to Expiration:  -443

MAP FINDINGS

AJ145
Target
Property
530-570 E. NORTH BEND WAY
NORTH BEND, WA  98045
Site 3 of 5 in cluster AJ

Actual:  454 ft.

Focus Map:  12

ASBESTOS:
Name:  Not reported
Address:  530-570 E. NORTH BEND WAY
City,State,Zip:  NORTH BEND, WA 98045
Facility Type:  Commercial
Parent ID:  0
Form ID:  88140#1177North586014
Notice Date:  07/22/2014
Start Date:  08/04/2014
Completion Date:  08/29/2014
Initial:  1
Amended:  Not reported
On Hold:  Not reported
Off Hold:  Not reported
Emergency:  Not reported
Site Hours Start:  7:00 AM
Site Hours End:  3:30 PM
Sunday:  Not reported
Monday:  1
Tuesday:  1
Wednesday:  1
Thursday:  1
Friday:  1
Saturday:  Not reported
Contractor ID:  Not reported
Phone:  253-588-0440
Job Site CAS:  Doug Murphy
Project Form Email:  chris@nwabatement.com
Property Owner Name:  Robert Wheeler
Property Owner Agent:  Not reported
Property Owner Company:  Northwest Abatement Services I (ABCN00001177)
Property Owner Address:  9027 SE 60th St.
Property Owner City:  Mercer Island
Property Owner State:  WA
Property Owner Zip4:  98045
Property Owner Phone:  206-232-4637
Job Site Room:  Not reported
Facility Age:  1965
Facility Size:  7500 sq ft
Facility Remodel:  Not reported
Facility Demo: 1
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 2500
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
Sq Ft Other Text: drywall debris in piles
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: 1
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: 1
Other CM1 Text: regulated area
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Commercial buildings burned and debris in piles on site. One sample indicates asbestos in drywall/mud - survey assumes debris contamination. Debris will be characterized on site during debris removal and segregated where possible.

Date Time Submitted: 2014-07-22 15:38:27
Submitter IP Address: 173.10.104.109
Region: 2
UBI: 601580291
Environmental Interest/Information System:

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
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<th>Map ID</th>
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<th>Distance</th>
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**MAP FINDINGS**

### SPILLS:

- **Name:** Not reported
- **Address:** 424 HEALY AVE S, NORTH BEND, WA
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility ID:** 534651
- **Medium:** Not reported
- **Material Desc:** CHEMICAL
- **Material Qty:** 2
- **Material Units:** GALLON
- **Date Received:** 06/30/2003
- **Contact Name:** Not reported
- **Incident Date:** Not reported
- **Incident Category Type:** Not reported
- **Incident Category:** Not reported
- **Latitude:** Not reported
- **Longitude:** Not reported
- **Source Type:** Not reported
- **Source:** Not reported
- **Vessel Facility Name:** Not reported
- **Recovered Quantity:** Not reported
- **Resp Party Contact:** Not reported
- **Cause:** Not reported
- **Cause Type:** Not reported
- **Resp Party Name:** Not reported

---

**RANGER STATION COTTAGES (Continued)**

- **Date Interaction:** 2015-10-01 00:00:00
- **Date Interaction 3:** Construction SW GP
- **Latitude:** 47.491408032999999
- **Longitude:** -121.773688922999999

**NPDES:**

- **Name:** RANGER STATION COTTAGES
- **Address:** SEC 424TH AVE SE & SE 120TH ST
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility Status:** Not reported
- **Facility Type:** Construction SW GP
- **Admin Region:** Headquarters
- **Date Issued:** 11/18/2015
- **Latitude:** Not reported
- **Longitude:** Not reported
- **Permit ID:** WAR303471
- **Permit Version:** Not reported
- **Permit Status:** Active
- **Permit SubStatus:** Not reported
- **Ecology Contact:** Not reported
- **WRIA:** Not reported
- **Permit Expiration Date:** 12/31/2020
- **Effective Date:** 01/01/2016
- **Days to Expiration:** -443
SPILLS:
Name: APARTMENT MANAGER
Address: MAIN AVE S & STOW AVE S, NORTH BEND, WA
City, State, Zip: NORTH BEND, WA
Facility ID: 516192
Medium: Not reported
Material Desc: DEBRIS/GARBAGE
Material Qty: Not reported
Material Units: Not reported
Date Received: 02/07/2001
Contact Name: UNKNOWN
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

NPDES:
Name: ORCHARD PLACE APARTMENTS
Address: 240 SE ORCHARD DR
City, State, Zip: NORTH BEND, WA 98045
Facility Status: Not reported
Facility Type: Construction SW GP
Admin Region: Headquarters
Date Issued: 11/18/2015
Latitude: Not reported
Longitude: Not reported
Permit ID: WAR306494
Permit Version: Not reported
Permit Status: Active
Permit SubStatus: Not reported
Ecology Contact: Not reported
WRIA: Not reported
Permit Expiration Date: 12/31/2020
Effective Date: 05/29/2018
Days to Expiration: 443
Environmental Interest/Information System: US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

MAP FINDINGS

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<th>NORTH BEND GARDINER CREEK SEDIMENT CTRL</th>
<th>WA ALL SITES</th>
<th>1011278742</th>
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Site 1 of 3 in cluster AL

Actual: 445 ft.
Focus Map: 12

Interaction: 20853
Interaction 1: A
Interaction 2: SEAPROJ
Ecology Program: SEA
Program Data: AQUATICS
Facility Alt.: Not reported
Program ID: 200700063
Date Interaction: 2007-10-19 00:00:00
Date Interaction 3: SEA Project Site
Latitude: 47.490654562000003
Longitude: -121.799538713

Interaction: 20854
Interaction 1: A
NORTH BEND GARDINER CREEK SEDIMENT CTRL (Continued)

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FINDS:
- Registry ID: 110036136730
- Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_reigion_id=110036136730

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS; detail in the EDR Site Report.

Site 2 of 3 in cluster AL

Allsites: NINTENDO DISTRIBUTION CENTER

<table>
<thead>
<tr>
<th>Actual:</th>
<th>445 ft.</th>
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Interaction: 86297
Interaction 1: I
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: NINTENDO DISTRIBUTION CENTER
Program ID: WAR011755
Date Interaction: 2009-07-28 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.494194329999999
Longitude: -121.79798522
Site 3 of 3 in cluster AL

**AL156**
**Nintendo Distribution Center**
401 S Fork Ave SW
North Bend, WA 98045

**Actual:**
445 ft.

**Focus Map:**
12

**FINDS:**
Registry ID: 110056480384

**Environmental Interest/Information System:**
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[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110056480384) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**157**
**Si View Park and Pool**
400 SE Orchard Dr
North Bend, WA 98045

**Actual:**
452 ft.

**Focus Map:**
12

**Interaction:**
80830

**Interaction 1:**
I

**Interaction 2:**
INDNPDESIP

**Ecology Program:**
WATQUAL

**Program Data:**
PARIS

**Facility Alt.:**
Not reported

**Program ID:**
WA0031127

**Date Interaction:**
1994-01-04 00:00:00

**Date Interaction 3:**
Industrial NPDES IP

**Latitude:**
47.490675289999999

**Longitude:**
-121.784229254

**Interaction:**
56584

**Interaction 1:**
A

**Interaction 2:**
TIER2

**Ecology Program:**
HAZWASTE

**Program Data:**
EPCRA
SI VIEW PARK AND POOL  (Continued)

Facility Alt.: Not reported
Program ID: CRK000034950
Date Interaction: 1992-01-01 00:00:00
Date Interaction 3: Emergency/Haz Chem Rpt TI
Latitude: 47.490675289999999
Longitude: -121.784229254

Interaction: 101450
Interaction 1: I
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: Si View Park
Program ID: WAR125752
Date Interaction: 2012-04-23 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.490675289999999
Longitude: -121.784229254

FINDS:
Registry ID: 110015439140
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015439140

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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1007067323
Registry ID: 110015439140
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<tr>
<td>Target</td>
<td>NORTH BEND, WA  98045</td>
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</tr>
</tbody>
</table>

**Mineral Deposit Record (MRDS):**

- **Name:** NORTH BEND PIT - DIV. 5
- **Deposit Identification Number:** 10277670
- **City, State, Zip:** NORTHERN BEND, WASHINGTON 98045
- **MRDS Identification Number:** Not reported
- **MAS/MILS Identification Number:** 0530331124
- **Region:** NA
- **Country:** United States
- **Primary Commodities:** Sand and Gravel, Construction
- **Secondary Commodities:** Not reported
- **Tertiary Commodities:** Not reported
- **Operation Type:** Surface
- **Deposit Type:** Not reported
- **Production Size:** Not reported
- **Development Status:** Past Producer
- **Ore Minerals or Materials:** Not reported
- **Gangue Minerals or Materials:** Not reported
- **Other Minerals or Materials:** Not reported
- **Ore Body Form:** Not reported
- **Workings Type:** Not reported
- **Mineral Deposit Model:** Not reported
- **Concentration Processes:** Not reported
- **Previous Names:** Not reported
- **Ore Controls:** Not reported
- **Host Rock Unit Name:** Not reported
- **Host Rock Type:** Not reported
- **Associated Rock Unit Name:** Not reported
- **Associated Rock Type Code:** Not reported
- **Structural Characteristics:** Not reported
- **Tectonic Setting:** Not reported
- **References:** Not reported
- **First Production Year:** Not reported
- **Began Before/After FPY:** Not reported
- **Last Production Year:** Not reported
- **Ended Before/After LPY:** Not reported
- **Year Discovered:** Not reported
- **Found Before/After YD:** Not reported
- **Production History:** Not reported
- **Discovery Information:** Not reported
- **Latitude:** 47.49011
- **Longitude:** -121.79981

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Site 1 of 4 in cluster AM

Actual:
447 ft.

Focus Map:
12

FINDS:
Registry ID: 110015525528
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015525528

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Site 2 of 4 in cluster AM

WA Financial Assurance 1:
Name: MT SI SHELL
Address: 742 SW MT SI BLVD
City, State, Zip: NORTH BEND, WA 98045
DOE Site ID: 97659
Financial Resp Type: COLONY INSURANCE COMPANY
Inception Date: 12/22/2016
Expiration Date: 12/29/2017
Address 2: Not reported
Policy Number: WA641922-4
Effective Date: 12/22/2016
Liability Limit Type: Not reported
Compliance Method: Not reported
Proof of Responsibility Document Flag: Not reported
Retroactive Date: Not reported
Latitude: 47.489316465
Longitude: -121.79407864

Name: MT SI SHELL
Address: 742 SW MT SI BLVD
City, State, Zip: NORTH BEND, WA 98045
DOE Site ID: 97659
Financial Resp Type: COLONY INSURANCE COMPANY
Inception Date: 12/08/2017
Expiration Date: 12/29/2018
Address 2: Not reported
Policy Number: WA641922-5
Effective Date: 12/08/2017
Liability Limit Type: Not reported
Compliance Method: Not reported
Proof of Responsibility Document Flag: Not reported
Retroactive Date: Not reported
Latitude: 47.489316465
**MT SI SHELL (Continued)**

- **Longitude:** -121.79407864
- **Name:** MT SI SHELL
- **Address:** 742 SW MT SI BLVD
- **City, State, Zip:** NORTH BEND, WA 98045
- **DOE Site ID:** 97659
- **Financial Resp Type:** COLONY INSURANCE COMPANY
- **Inception Date:** 12/29/2019
- **Effective Date:** 12/12/2018
- **Liability Limit Type:** Not reported
- **Proof of Responsibility Document Flag:** Not reported
- **Retroactive Date:** Not reported
- **Latitude:** 47.489316465
- **Longitude:** -121.79407864

**AM161 MT SI SHELL WA UST U000712416**

**Target** 742 SW MT SI BLVD

**Property** NORTH BEND, WA 98045

**Site 3 of 4 in cluster AM**

**Actual:** 447 ft.

**Focus Map:** 12

---

**UST:**

- **Name:** MT SI SHELL
- **Address:** 742 SW MT SI BLVD
- **City:** NORTH BEND
- **Zip:** 98045
- **Facility ID:** 12657451
- **Site Id:** 97659
- **UBI:** Not reported
- **Phone Number:** Not reported
- **Decimal Latitude:** 47.4893164650117
- **Decimal Longitude:** -121.794078643833

**Tank Name:** 1

**Tag Number:** A3910

**Tank Status:** Operational

**Tank Status Date:** 08/06/1996

**Tank Install Date:** 08/01/1989

**Tank Closure Date:** Not reported

**Capacity Range:** 10,000 to 19,999 Gallons

**Tank Permit Expiration Date:** 03/31/2020

**Tank Upgrade Date:** 04/01/1998

**Tank Spill Prevention:** Spill Bucket/Spill Box

**Tank Overfill Prevention:** Automatic Shutoff (fill pipe)

**Tank Material:** Steel Clad with Corrosion Resistant Composite

**Tank Construction:** Single Wall Tank

**Tank Tightness Test:** Part of Automatic Tank Gauging (ATG) System

**Tank Corrosion Protection:** Corrosion Resistant

**Tank Manifold:** Not reported

**Tank Release Detection:** Automatic Tank Gauging

**Tank SFC Type:** Not reported

**Pipe Material:** Fiberglass

**Pipe Construction:** Single Wall Pipe

**Pipe Primary Release Detection:** Automatic Line Leak Detector (ALLD)
MT SI SHELL (Continued)

Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump

Name: MT SI SHELL
Address: 742 SW MT SI BLVD
City: NORTH BEND
Zip: 98045

Tank Name: 2
Tag Number: A3910
Tank Status: Operational
Tank Status Date: 08/06/1996
Tank Install Date: 08/01/1989
Tank Closure Date: Not reported
Capacity Range: 20,000 to 29,999 Gallons
Tank Permit Expiration Date: 03/31/2020
Tank Upgrade Date: 04/01/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Automatic Shutoff (fill pipe)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Single Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Fiberglass
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump

Name: MT SI SHELL
Address: 742 SW MT SI BLVD
City: NORTH BEND
Zip: 98045

Tank Name: 3
Tag Number: A3910
Tank Status: Operational
Tank Status Date: 08/06/1996
Tank Install Date: 08/01/1989
Tank Closure Date: Not reported
Capacity Range: 20,000 to 29,999 Gallons
Tank Permit Expiration Date: 03/31/2020
Tank Upgrade Date: 04/01/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Automatic Shutoff (fill pipe)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Single Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
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EDR ID Number: U000712416
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#### MT SI SHELL (Continued)

- **Date Interaction 3:**
- **Type:** Underground Storage Tank
- **Latitude:** 47.489310795000002
- **Longitude:** -121.794063865

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#### AM162 MOUNT SI TEXACO

- **Target:** 742 SW MT SI BLVD
- **Property:** NORTH BEND, WA 98045

**Site 4 of 4 in cluster AM**

- **Actual:** 447 ft.

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#### WA ASBESTOS

- **Property:** NORTH BEND, WA 98045

**Actual:** 462 ft.

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Site Hours End: 4:30PM
Sunday: Not reported
Monday: 1
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: 360 750-1900
Phone: 360 750-1900
Job Site CAS: Martin Ortiz
Project Form Email: scarter@minorityac.com
Property Owner Name: Not reported
Property Owner Agent: Chuck Kellog
Property Owner Company: Minority Abatement Contractors (ABCN00001346)
Property Owner Address: 2930 Wetmore Ave
Property Owner City: Everett
Property Owner State: WA
Property Owner Zip4: 98201
Property Owner Phone: 360 904-8968
Job Site Room: Bathroom, kitchen,
Facility Age: 1950s
Facility Size: 1,400
Facility Remodel: 1
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 180
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: 1
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: 1
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
Sq Ft Other Text: Sink
Quantity Lin Ft: 18
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: 1
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Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: 1
Wrap And Cut: 1
Wet Methods: 1
HEPA Vacuum: 1
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Other CM1: Not reported
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Half Mask APR: 1
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Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: 2014-12-04 11:34:30
Submitter IP Address: 173.11.29.45
Region: 2
UBI: 602147410
Notice type: Initial
Project Type: Air cell Pipe Insulation, Other Square Footage, Sheet Vinyl
Supervisor: Martin Ortiz ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE
Name: Not reported
Address: 902 SE NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility Type: Commercial
Parent ID: 0
Form ID: 111468#1317Adv342270
Notice Date: 02/03/2016
Start Date: 02/17/2016
Completion Date: 02/19/2016
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Wednesday: 1
Thursday: 1
Friday: 1
Saturday: Not reported
Contractor ID: Not reported
Phone: 360-357-5666
Job Site CAS: Genaro Magana
Project Form Email: advanceenvironmental@comcast.net
Property Owner Name: Not reported
Property Owner Agent: Not reported
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Comments: Not reported
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Region: 2
UBI: 602306184
Notice type: Initial
Project Type: Vinyl Asbestos Tile
Supervisor: Genaro Magana
Supervisor Phone: Not reported
Certificate Status: ACTIVE

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**Site 1 of 3 in cluster AN**

**Actual:**
451 ft.

**Focus Map:**
12

**UST:**

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**Tag Number:**
A3909

**Tank Status:**
Operational

**Tank Status Date:**
08/06/1996

**Tank Install Date:**
01/01/1988

**Tank Closure Date:**
Not reported

**Capacity Range:**
10,000 to 19,999 Gallons

**Tank Permit Expiration Date:**
10/31/2020

**Tank Upgrade Date:**
04/01/1998

**Tank Spill Prevention:**
Spill Bucket/Spill Box

**Tank Overfill Prevention:**
Ball Float Valve (vent line)

**Tank Material:**
Fiberglass Reinforced Plastic

**Tank Construction:**
Single Wall Tank

**Tank Tightness Test:**
Not reported

**Tank Corrosion Protection:**
Corrosion Resistant

**Tank Manifold:**
Not reported

**Tank Release Detection:**
Automatic Tank Gauging

**Tank SFC Type:**
Sump

**Pipe Material:**
Fiberglass

**Pipe Construction:**
Single Wall Pipe

**Pipe Primary Release Detection:**
Automatic Line Leak Detector (ALLD)

**Pipe Second Release Detection:**
Annual Line Tightness Test (LTT)

**Pipe Corrosion Protection:**
Corrosion Resistant

**Pipe Pumping System:**
Pressurized System

**Responsible Unit:**
Northwest

**Dispenser/Pump SFC Type:**
Sump
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TC5992688.2s Page 275
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Policy Number: WA641299-8
Effective Date: 12/08/2017
Liability Limit Type: Mktg, 1-100 tanks; 1m per occurrence, 1m aggregate
Compliance Method: Approved pollution liability insurance
Proof of Responsibility Document Flag: 0
Retroactive Date: 01/01/2007
Latitude: 47.488999883
Longitude: -121.79462178

Name: MT SI CHEVRON
Address: 745 SW MT SI BLVD
City, State, Zip: NORTH BEND, WA 98045
DOE Site ID: 97603
Financial Resp Type: COLONY INSURANCE COMPANY
Inception Date: 12/31/2018
Expiration Date: 12/31/2019
Address 2: Not reported
Policy Number: WA641299-9
Effective Date: 12/31/2018
Liability Limit Type: Mktg, 1-100 tanks; 1m per occurrence, 1m aggregate
Compliance Method: Approved pollution liability insurance
Proof of Responsibility Document Flag: 0
Retroactive Date: 01/01/2007
Latitude: 47.488999883
Longitude: -121.79462178

Name: MT SI CHEVRON
Address: 745 SW MT SI BLVD
City, State, Zip: NORTH BEND, WA 98045
DOE Site ID: 97603
Financial Resp Type: COLONY INSURANCE COMPANY
Inception Date: 12/31/2018
Expiration Date: 12/31/2019
Address 2: Not reported
Policy Number: Wa641299-9
Effective Date: 12/31/2018
Liability Limit Type: Mktg, 1-100 tanks; 1m per occurrence, 1m aggregate
Compliance Method: Approved pollution liability insurance
Proof of Responsibility Document Flag: 0
Retroactive Date: 01/01/2007
Latitude: 47.488999883
Longitude: -121.79462178

Environmental Interest/Information System:
G & S SERVICES (Continued)

Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
### AO167
**Target:** SCHUCKS AUTO SUPPLY NORTH BEND  
**Property:** 400 SW MOUNT SI BLVD  
**Property:** NORTH BEND, WA  98045

**Site 1 of 2 in cluster AO**

<table>
<thead>
<tr>
<th>Actual</th>
<th>Focus Map</th>
</tr>
</thead>
<tbody>
<tr>
<td>447 ft.</td>
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<tr>
<th>Field</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Name</td>
<td>SCHUCKS AUTO SUPPLY NORTH BEND</td>
</tr>
<tr>
<td>Facility Id</td>
<td>20294</td>
</tr>
<tr>
<td>Interaction</td>
<td>78195</td>
</tr>
<tr>
<td>Interaction 1</td>
<td>I</td>
</tr>
<tr>
<td>Interaction 2</td>
<td>LSC</td>
</tr>
<tr>
<td>Ecology Program</td>
<td>HAZWASTE</td>
</tr>
<tr>
<td>Program Data</td>
<td>LSC</td>
</tr>
<tr>
<td>Facility Alt.</td>
<td>Schucks Auto Supply North Bend</td>
</tr>
<tr>
<td>Program ID</td>
<td>Not reported</td>
</tr>
<tr>
<td>Date Interaction</td>
<td>2009-04-09 00:00:00</td>
</tr>
<tr>
<td>Date Interaction 3</td>
<td>Local Source Cntrl 7/09-3</td>
</tr>
<tr>
<td>Latitude</td>
<td>47.486508270999998</td>
</tr>
<tr>
<td>Longitude</td>
<td>-121.794497570999998</td>
</tr>
</tbody>
</table>

### AO168
**Target:** SCHUCKS AUTO SUPPLY NORTH BEND  
**Property:** 400 SW MOUNT SI BLVD  
**Property:** NORTH BEND, WA  98045

**Site 2 of 2 in cluster AO**

<table>
<thead>
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<th>Actual</th>
<th>Focus Map</th>
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<tbody>
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<th>Field</th>
<th>Value</th>
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<td>Name</td>
<td>ALLSITES</td>
</tr>
<tr>
<td>Registry ID</td>
<td>110039225415</td>
</tr>
<tr>
<td>Facility URL</td>
<td><a href="http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110039225415">http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110039225415</a></td>
</tr>
</tbody>
</table>

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

### AP169
**Target:** WA DOT CAMP MASON UST  
**Property:** SR I90 MP 42.29  
**Property:** NORTH BEND, WA  98045

**Site 1 of 2 in cluster AP**

<table>
<thead>
<tr>
<th>Actual</th>
<th>Focus Map</th>
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</thead>
<tbody>
<tr>
<td>462 ft.</td>
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<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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<tbody>
<tr>
<td>Registry ID</td>
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</tr>
<tr>
<td>Facility URL</td>
<td><a href="http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110006138928">http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110006138928</a></td>
</tr>
</tbody>
</table>

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each
facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs. 

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016213084
Registry ID: 110006138928
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110006138928

AP170
Target  
Property
WA DOT CAMP MASON UST
SR I90 MP 42.29
NORTH BEND, WA 98045

Site 2 of 2 in cluster AP

Actual: 463 ft.
Focus Map: 12

Interaction: 58114
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAD988467767
Date Interaction: 1989-07-06 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.488484329999999
Longitude: -121.797875221

Interaction: 58115
Interaction 1: A
Interaction 2: TIER2
Ecology Program: HAZWASTE
Program Data: EPCRA
Facility Alt.: Not reported
Program ID: CRK000047740
Date Interaction: 1998-01-01 00:00:00
Date Interaction 3: Emergency/Haz Chem Rpt TI
Latitude: 47.488484329999999
Longitude: -121.797875221

RCRA NonGen / NLR:
Date form received by agency: 1989-07-06 00:00:00.0
Facility name: WA DOT CAMP MASON UST
Facility address: SR I90 MP 42.29
OWNER/OPERATOR SUMMARY:

Owner/operator name: SEE PAPER COPY
Owner/operator address: SR I90 MP 42.29
Owner/operator address: NORTH BEND, WA 98045
Owner/operator country: Not reported
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: WA DOT FACILITIES HAZMAT
Owner/operator address: TRANSPORTATION BLDG
Owner/operator address: OLYMPIA, WA 98504
Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: WA DOT FACILITIES HAZMAT
Owner/operator address: TRANSPORTATION BLDG
Owner/operator address: OLYMPIA, WA 98504
Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 1996-05-02 00:00:00.
Owner/Op end date: Not reported

Owner/operator name: WA DOT CAMP MASON UST
Owner/operator address: SR I90 MP 42.29
Owner/operator address: NORTH BEND, WA 98045
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported
WA DOT CAMP MASON UST (Continued)

Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: WA DOT CAMP MASON UST
Owner/operator address: SR I90 MP 42.29
                      NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 1989-07-06 00:00:00.0
Site name: WA DOT CAMP MASON UST
Classification: Not a generator, verified

Date form received by agency: 1989-07-06 00:00:00.0
Site name: WA DOT CAMP MASON UST
Classification: Not a generator, verified

Violation Status: No violations found
AQ171  FIRE STATION 87
Target  500 MALONEY GROVE AVE SE
Property NORTH BEND, WA  98045

Site 1 of 5 in cluster AQ

Actual: 463 ft.
Focus Map: 12

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid:                1015954737
Registry ID:          110046591540
DFR URL:              http://echo.epa.gov/detailed-facility-report?fid=110046591540

AQ172  FIRE STATION 87
Target  500 MALONEY GROVE AVE SE
Property NORTH BEND, WA  98045

Site 2 of 5 in cluster AQ

Actual: 463 ft.
Focus Map: 12
AR173  ANDRES DRYCLEANER  EDR Hist Cleaner  1019928706  N/A
Target 458 SW MT SI BLVD  
Property NORTH BEND, WA  98045  

Site 1 of 3 in cluster AR

Actual:  
444 ft.

Focus Map:  
12

Year:  
Name:  
Type:
1997  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
1998  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
1999  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2000  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2001  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2002  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2003  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2004  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2005  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2006  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2007  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2008  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2009  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2010  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2011  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2012  MICHAELS FINE DRY CLEANING  Drycleaning Plants, Except Rugs
2012  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2013  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs
2013  MICHAELS FINE DRY CLEANING  Drycleaning Plants, Except Rugs
2014  MICHAELS FINE DRY CLEANING  Drycleaning Plants, Except Rugs
2014  ANDRES DRYCLEANER  Drycleaning Plants, Except Rugs

AR174  MICHAELS FINE DRY CLEANING NORTH BEND  WA ALLSITES S110276099  N/A
Target 458 SW MT SI BLVD  
Property NORTH BEND, WA  98045  

Site 2 of 3 in cluster AR

Actual:  
444 ft.

Focus Map:  
12

Interaction:  
92142
Interaction 1:  
I
Interaction 2:  
LSC
Ecology Program:  
HAZWASTE
Program Data:  
LSC
Facility Alt.:  
Michaels Fine Dry Cleaning North Bend
Program ID:  
Not reported
Date Interaction:  
2009-03-03 00:00:00
Date Interaction 3:  
Local Source Cntrl 7/09-3
Latitude:  
47.486715330000003
Longitude:  
-121.791250223000001
Site 3 of 3 in cluster AR

Actual: 444 ft.
Focus Map: 12

Environmental Interest/Information System:
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Site 3 of 5 in cluster AQ

Actual: 463 ft.
Focus Map: 12

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
AQ177  SI VIEW ESTATES 28 LOT PLAT  WA ALLSITES  S113831426
Target  1045 MALONEY GROVE AVE SE  N/A
Property  NORTH BEND, WA  98045

Site 4 of 5 in cluster AQ

Actual:  463 ft.
Focus Map:  12

ALLSITES:
Name:  SI VIEW ESTATES 28 LOT PLAT
Facility Id:  7578

Interaction:  105295
Interaction 1:  A
Interaction 2:  CONSTSWGP
Ecology Program:  WATQUAL
Program Data:  PARIS
Facility Alt.:  Si View Estates 28 Lot Plat
Program ID:  WAR127133
Date Interaction:  2013-05-13 00:00:00
Date Interaction 3:  Construction SW GP
Latitude:  47.483385495
Longitude:  -121.77620766699999

Interaction:  109863
Interaction 1:  A
Interaction 2:  CONSTSWGP
Ecology Program:  WATQUAL
Program Data:  PARIS
Facility Alt.:  Si View Estates 28 Lot Plat - A
Program ID:  WAR302399
Date Interaction:  2014-10-02 00:00:00
Date Interaction 3:  Construction SW GP
Latitude:  47.483385495
Longitude:  -121.77620766699999

178  1525 ROCK CREEK RIDGE BLVD SW  WA SPILLS  S113888444
Target  1525 ROCK CREEK RIDGE BLVD SW  N/A
Property  NORTH BEND, WA

SPILLS:
Name:  Not reported
Address:  1525 ROCK CREEK RIDGE BLVD SW
City,State,Zip:  NORTH BEND, WA
Facility ID:  643980
Medium:  SURFACE WATER-FRESH
Material Desc:  PETROLEUM - MOTOR OIL
Material Qty:  Not reported
Material Units:  GALLON
Date Received:  09/16/2013
Contact Name:  UNKNOWN
Incident Date:  Not reported
Incident Category Type:  Not reported
Incident Category:  Not reported
Latitude:  Not reported
Longitude:  Not reported
Source Type:  Not reported
Source:  Not reported
Vessel Facility Name2:  Not reported
Recovered Quantity:  Not reported
(Continued)

Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

AS179
Target 1120 E NORTH BEND WAY
Property NORTH BEND, WA 98045

Site 1 of 7 in cluster AS

Actual: 466 ft.
Focus Map: 13

Date form received by agency: 2018-01-12 00:00:00.0
Facility name: NORTH BEND AUTO PARTS INC
Facility address: 1120 E NORTH BEND WAY
NORTH BEND, WA 98045
EPA ID: WAH000010827
Mailing address: PO BOX 389
NORTH BEND, WA 98045
Contact: STEVEN MCCONKEY
Contact address: PO BOX 389
NORTH BEND, WA 98045
Contact country: US
Contact telephone: 425-888-1112
Contact email: NBNAPA@COMCAST.NET
EPA Region: 10
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:
Owner/operator name: NORTH BEND AUTO PARTS INC
Owner/operator address: 1119 BROWN ROAD
ELLENBURG, WA 98926
Owner/operator country: US
Owner/operator telephone: 509-962-9595
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Op start date: Not reported
Owner/Op end date: Not reported
Owner/operator name: NORTH BEND AUTO PARTS INC
NORTH BEND AUTO PARTS INC (Continued)

Owner/operator address: PO BOX 389
NORTH BEND, WA 98045

Owner/operator country: US

Owner/operator telephone: 425-888-1112
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NORTH BEND AUTO PARTS INC
Owner/operator address: 1119 BROWN ROAD
ELLENSBURG, WA 98926

Owner/operator country: US
Owner/operator telephone: 509-962-9595
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported

Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 2000-02-28 00:00:00
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2017-02-14 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2016-02-16 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2015-01-08 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2014-01-16 00:00:00.0
NORTH BEND AUTO PARTS INC (Continued)

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2013-01-08 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2012-02-13 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2012-02-13 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2011-01-11 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2011-01-11 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2010-01-05 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2010-01-05 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2009-01-09 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2008-01-10 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2007-12-31 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Not a generator, verified
Date form received by agency: 2007-03-08 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2007-03-08 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Not a generator, verified
Date form received by agency: 2007-03-08 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Date form received by agency: 2006-04-06 00:00:00.0

Site name: NORTH BEND AUTO PARTS INC
Classification: Not a generator, verified
Date form received by agency: 2006-04-06 00:00:00.0
NORTH BEND AUTO PARTS INC  (Continued)  1001969718

Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2005-12-31 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Not a generator, verified
Date form received by agency: 2005-01-25 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2004-01-07 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2003-12-31 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Not a generator, verified
Date form received by agency: 2003-01-23 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2002-01-14 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2001-01-17 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2000-02-28 00:00:00.0
Site name: NORTH BEND AUTO PARTS INC
Classification: Small Quantity Generator

Hazardous Waste Summary:

- Waste code: D001
  Waste name: IGNITABLE WASTE
- Waste code: D006
  Waste name: CADMIUM
- Waste code: D008
  Waste name: LEAD
- Waste code: D018
  Waste name: BENZENE
- Waste code: D027
  Waste name: 1,4-DICHLOROBENZENE
- Waste code: D039
  Waste name: TETRACHLOROETHYLENE
- Waste code: D040
  Waste name: TRICHLORETHYLENE
NORTH BEND AUTO PARTS INC (Continued) 1001969718

Violation Status: No violations found

ALLSITES:
Name: NORTH BEND AUTO PARTS INC
Facility Id: 25439352

Interaction: 34471
Interaction 1: A
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: North Bend Auto Parts Inc
Program ID: WAH000010827
Date Interaction: 2000-02-28 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.477846172
Longitude: -121.75153868699999

FINDS:
Registry ID: 110005397070
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p__registry_id=110005397070

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.
HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1001969718
Registry ID: 110005397070
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110005397070

WA MANIFEST:
Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: Not reported
Federal Waste Code Desc: D006,D008,D018,D027,D039,D040
Form Comm: Not reported
NORTH BEND AUTO PARTS INC (Continued)

Data Year: 2017
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 175000969
Business Type: Automotive Parts
Mail Name: North Bend Auto Parts Inc
Mailing Address: PO Box 389
Mailing City,State,Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
Legal Organization Type: Private
Legal Contact: Richard M McConkey
Legal Address: 1119 BROWN ROAD
Legal Address 2: Not reported
Legal City,State,Zip: ELLENSBURG, WA 98926
Legal Phone Number: 509-962-9595
Legal Effective Date: 02/28/2000
Land Organization Name: North Bend Auto Parts Inc
Land Organization Type: Private
Land Contact: Richard M McConkey
Land Address: 1119 BROWN ROAD
Land City,State,Zip: ELLENSBURG, WA 98926
Land Phone Number: 509-962-9595
Operator Organization Name: North Bend Auto Parts Inc
Operator Organization Type: Private
Operator: Steven McConkey
Operator Address: PO Box 389
Operator Address 2: Not reported
Operator City,State,Zip: NORTH BEND, WA 98045
Operator Phone Number: (425)888-1112
Operator Effective Date: 02/28/2000
Site Contact: Steven McConkey
Site Contact Address: PO Box 389
Contact City,State,Zip: NORTH BEND, WA 98045
Site Contact Phone Number: (425)888-1112
Site Contact Email: NBNAPA@COMCAST.NET
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
NORTH BEND AUTO PARTS INC (Continued) 1001969718

Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: Not reported
Federal Waste Code Desc: D008,D006,D018,D027,D039,D040
Form Comm: Not reported
Data Year: 2017
Permit by Rule: Not reported
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 17500969
Business Type: Not reported
Mail Name: Not reported
Mailing Address: PO Box 389
Mailing City, State, Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: 1119 BROWN ROAD
Legal Address 2: Not reported
Legal City, State, Zip: ELLENSBURG, WA 98926
Legal Phone Number: (509)962-9595
Legal Effective Date: 02/28/2000
Land Organization Name: RICHARD MCCONKEY
Land Organization Type: Private
Land Contact: Not reported
Land Address: 1119 BROWN ROAD
Land City, State, Zip: ELLENSBURG, WA 98926
NORTH BEND AUTO PARTS INC (Continued)

Land Phone Number: (509)962-9595
Operator Organization Name: North Bend Auto Parts Inc
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 389
Operator Address 2: Not reported
Operator City,State,Zip: NORTH BEND, WA 98045
Operator Phone Number: (425)888-1112
Operator Effective Date: 02/28/2000
Site Contact: Not reported
Site Contact Address: Not reported
Contact City,State,Zip: Not reported
Site Contact Phone Number: Not reported
Site Contact Email: Not reported
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Tranports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marker Directs Shipments: False
Used Oil Fuel Marker Meets Specs: False
Site Contact Address 2: Not reported

Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: Not reported
Federal Waste Code Desc: D006,D008,D018,D027,D039,D040
Form Comm: Not reported
Data Year: 2016
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
NORTH BEND AUTO PARTS INC (Continued)

Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 17500969
Business Type: Automotive Parts
Mail Name: North Bend Auto Parts Inc
Mailing Address: PO Box 389
Mailing City,State,Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
Legal Organization Type: Private
Legal Contact: Richard M McConkey
Legal Address: 1119 BROWN ROAD
Legal Address 2: Not reported
Legal City,State,Zip: ELLENSBURG, WA 98926
Legal Phone Number: 509-962-9595
Legal Effective Date: 02/28/2000
Land Organization Name: North Bend Auto Parts Inc
Land Organization Type: Private
Land Contact: Richard M McConkey
Land Address: 1119 BROWN ROAD
Land City,State,Zip: ELLENSBURG, WA 98926
Land Phone Number: 509-962-9595
Operator Organization Name: North Bend Auto Parts Inc
Operator Organization Type: Private
Operator: Steven McConkey
Operator Address: PO Box 389
Operator Address 2: Not reported
Operator City,State,Zip: NORTH BEND, WA 98045
Operator Phone Number: (425)888-1112
Operator Effective Date: 02/28/2000
Site Contact: Steven McConkey
Site Contact Address: PO Box 389
Contact City,State,Zip: NORTH BEND, WA 98045
Site Contact Phone Number: (425)888-1112
Site Contact Email: NBNAPA@COMCAST.NET
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
NORTH BEND AUTO PARTS INC (Continued)

Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: Not reported
Federal Waste Code Desc: D008, D018, D027, D039, D040
Form Comm: Not reported
Data Year: 2015
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 17500969
Business Type: Automotive Parts
Mail Name: North Bend Auto Parts Inc
Mailing Address: PO Box 389
Mailing City, State, Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
Legal Organization Type: Private
Legal Contact: Richard M McConkey
Legal Address: 1119 BROWN ROAD
Legal City, State, Zip: ELLENSBURG, WA 98926
Legal Phone Number: 509-962-9595
Legal Effective Date: 02/28/2000
Land Organization Name: North Bend Auto Parts Inc
Land Organization Type: Private
Land Contact: Richard M McConkey
Land Address: 1119 BROWN ROAD
Land City, State, Zip: ELLENSBURG, WA 98926
Land Phone Number: 509-962-9595
Operator Organization Name: North Bend Auto Parts Inc
Operator Organization Type: Private
Operator: Steven McConkey
Operator Address: PO Box 389
Operator Address 2: Not reported
Operator City, State, Zip: NORTH BEND, WA 98045
Operator Phone Number: (425)888-1112
Operator Effective Date: 02/28/2000
Site Contact: Steven McConkey
Site Contact Address: PO Box 389
Contact City, State, Zip: NORTH BEND, WA 98045
Site Contact Phone Number: (425)888-1112
Site Contact Email: NBNAPA@COMCAST.NET
Gen Status Code: SQG
NORTH BEND AUTO PARTS INC (Continued)

Monthly Generation: True
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045

Facility Address 2: Not reported
Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: Not reported
Federal Waste Code Desc: D006,D008,D018,D027,D039,D040
Form Comm: Not reported
Data Year: 2014
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 175000969
Business Type: Automotive Parts
Mail Name: North Bend Auto Parts Inc
Mailing Address: PO Box 389
Mailing City,State,Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
Legal Organization Type: Private
Legal Contact: Richard M McConkey
Legal Address: 1119 BROWN ROAD
Legal Address 2: Not reported
Legal City,State,Zip: ELLensburg, WA 98926
Legal Phone Number: 509-962-9996

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NORTH BEND AUTO PARTS INC  (Continued)

Legal Effective Date: 02/28/2000
Land Organization Name: North Bend Auto Parts Inc
Land Organization Type: Private
Land Contact: Richard M McConkey
Land Address: 1119 BROWN ROAD
Land City,State,Zip: ELLENSBURG, WA 98926
Land Phone Number: 509-962-9595
Operator Organization Name: North Bend Auto Parts Inc
Operator Organization Type: Private
Operator: Steven McConkey
Operator Address: PO Box 389
Operator Address 2: Not reported
Operator City,State,Zip: NORTH BEND, WA 98045
Operator Phone Number: (425)888-1112
Operator Effective Date: 02/28/2000
Site Contact: Steven McConkey
Site Contact Address: PO Box 389
Contact City,State,Zip: NORTH BEND, WA 98045
Site Contact Phone Number: (425)888-1112
Site Contact Email: NBNAPA@COMCAST.NET
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Transport Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: WAH000010827
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: 2013
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
NORTH BEND AUTO PARTS INC (Continued)  

Generator Marketing to Burner: False  
Other Marketers (i.e., blender, distributor, etc.): False  
Utility Boiler Burner: False  
Industry Boiler Burner: False  
Industrial Furnace: False  
Smelter Deferral: False  
Universal Waste: Not reported  
Off-Specification: Not reported  
LN Address 2: 175000969  
Tax Reg #: 175000969  
Business Type: Automotive Parts  
Mail Name: North Bend Auto Parts Inc  
Mailing Address: PO Box 389  
Mailing City,State,Zip: NORTH BEND, WA 98045  
Legal Organization Name: North Bend Auto Parts Inc  
Legal Organization Type: Private  
Legal Contact: Richard M McConkey  
Legal Address: 1119 BROWN ROAD  
Legal Address 2: Not reported  
Legal City,State,Zip: ELLENSBURG, WA 98926  
Legal Phone Number: 509-962-9595  
Legal Effective Date: 02/28/2000  
Land Organization Name: North Bend Auto Parts Inc  
Land Organization Type: Private  
Land Contact: Richard M McConkey  
Land Address: 1119 BROWN ROAD  
Land City,State,Zip: ELLENSBURG, WA 98926  
Land Phone Number: 509-962-9595  
Operator Organization Name: North Bend Auto Parts Inc  
Operator Organization Type: Private  
Operator: Steven McConkey  
Operator Address: PO Box 389  
Operator Address 2: Not reported  
Operator City,State,Zip: NORTH BEND, WA 98045  
Operator Phone Number: (425)888-1112  
Operator Effective Date: 02/28/2000  
Site Contact: Steven McConkey  
Site Contact Address: PO Box 389  
Contact City,State,Zip: NORTH BEND, WA 98045  
Site Contact Phone Number: (425)888-1112  
Site Contact Email: NBNAPA@COMCAST.NET  
Gen Status Code: SQG  
Monthly Generation: False  
Batch Generation: True  
One Time Generation: False  
Transport Own Waste: False  
Transport Other Waste: False  
Recycler Onsite: False  
Transfer Facility: False  
Other Exemption: Not reported  
UW Battery Gen: False  
Used Oil Transporter: False  
Used Oil Transfer Facility: False  
Used Oil Processor: False  
Used Oil Refiner: False  
Used Oil Fuel Marketer Directs Shipments: False  
Used Oil Fuel Marketer Meets Specs: False
NORTH BEND AUTO PARTS INC (Continued) 1001969718

Site Contact Address 2: Not reported
Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: Not reported
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: 2012
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 175000969
Business Type: Automotive Parts
Mail Name: North Bend Auto Parts Inc
Mailing Address: PO Box 389
Mailing City,State,Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
Legal Organization Type: Private
Legal Contact: Richard M McConkey
Legal Address: 1119 BROWN ROAD
Legal Address 2: Not reported
Legal City,State,Zip: ELLENSBURG, WA 98926
Legal Phone Number: 509-962-9595
Legal Effective Date: 02/28/2000
Land Organization Name: North Bend Auto Parts Inc
Land Organization Type: Private
Land Contact: Richard M McConkey
Land Address: 1119 BROWN ROAD
Land City,State,Zip: ELLENSBURG, WA 98926
Land Phone Number: 509-962-9595
Operator Organization Name: North Bend Auto Parts Inc
Operator Organization Type: Private
Operator: Steven McConkey
Operator Address: PO Box 389
Operator Address 2: Not reported
Operator City,State,Zip: NORTH BEND, WA 98045
Operator Phone Number: (425)888-1112
Operator Effective Date: 02/28/2000
NORTH BEND AUTO PARTS INC (Continued)

Site Contact: Steven McConkey
Site Contact Address: PO Box 389
Contact City, State, Zip: NORTH BEND, WA 98045
Site Contact Phone Number: (425)888-1112
Site Contact Email: NBNAPA@COMCAST.NET
Gen Status Code: SQG
Monthly Generation: True
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported
Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: Not reported
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: 2011
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 175000969
Business Type: Automotive Parts
Mail Name: North Bend Auto Parts Inc
Mailing Address: PO Box 389
Mailing City, State, Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
### NORTH BEND AUTO PARTS INC (Continued)

- **Legal Organization Type:** Private
- **Legal Contact:** Richard M McConkey
- **Legal Address:** 1119 BROWN ROAD
- **Legal City, State, Zip:** ELLensburg, WA 98926
- **Legal Phone Number:** 509-962-9595
- **Legal Effective Date:** 02/28/2000
- **Land Organization Name:** North Bend Auto Parts Inc
- **Land Organization Type:** Private
- **Land Contact:** Richard M McConkey
- **Land Address:** 1119 BROWN ROAD
- **Land City, State, Zip:** ELLensburg, WA 98926
- **Land Phone Number:** 509-962-9595
- **Operator Organization Name:** North Bend Auto Parts Inc
- **Operator Organization Type:** Private
- **Operator:** Steven McConkey
- **Operator Address:** PO Box 389
- **Operator City, State, Zip:** NORTH BEND, WA 98045
- **Operator Phone Number:** (425)888-1112
- **Operator Effective Date:** 02/28/2000
- **Site Contact:** Steven McConkey
- **Site Contact Address:** PO Box 389
- **Contact City, State, Zip:** NORTH BEND, WA 98045
- **Contact Phone Number:** (425)888-1112
- **Site Contact Email:** NBNAPA@COMCAST.NET
- **Gen Status Code:** SQG
- **Monthly Generation:** True
- **Batch Generation:** False
- **One Time Generation:** False
- **Transport Own Waste:** False
- **Transports Other Waste:** False
- **Recycler Onsite:** False
- **Transfer Facility:** False
- **Other Exemption:** False
- **UW Battery Gen:** False
- **Used Oil Transporter:** False
- **Used Oil Transfer Facility:** False
- **Used Oil Processor:** False
- **Used Oil Refiner:** False
- **Used Oil Fuel Marketer Directs Shipments:** False
- **Used Oil Fuel Marketer Meets Specs:** False
- **Site Contact Address 2:**

### Contacts

<table>
<thead>
<tr>
<th>Name</th>
<th>NORTH BEND AUTO PARTS INC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>1120 E NORTH BEND WAY</td>
</tr>
<tr>
<td>City, State, Zip</td>
<td>NORTH BEND, WA 98045</td>
</tr>
<tr>
<td>Facility Address 2</td>
<td>Not reported</td>
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<td>Facility ID</td>
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<td>WAH000010827</td>
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<td>Permit by Rule</td>
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<td>Mailing Address 2</td>
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</tbody>
</table>

**Note:** The table above includes all the information provided in the document, formatted in a readable and structured manner.
NORTH BEND AUTO PARTS INC (Continued) 1001969718

Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 175000969
Business Type: Automotive Parts
Mail Name: North Bend Auto Parts Inc
Mailing Address: PO Box 389
Mailing City,State,Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
Legal Organization Type: Private
Legal Contact: Richard M McConkey
Legal Address: 1119 BROWN ROAD
Legal Address 2: Not reported
Legal City,State,Zip: ELLENSBURG, WA 98926
Legal Phone Number: 509-962-9595
Legal Effective Date: 02/28/2000
Land Organization Name: North Bend Auto Parts Inc
Land Organization Type: Private
Land Contact: Richard M McConkey
Land Address: 1119 BROWN ROAD
Land City,State,Zip: ELLENSBURG, WA 98926
Land Phone Number: 509-962-9595
Operator Organization Name: North Bend Auto Parts Inc
Operator Organization Type: Private
Operator: Steven McConkey
Operator Address: PO Box 389
Operator Address 2: Not reported
Operator City,State,Zip: NORTH BEND, WA 98045
Operator Phone Number: (425)888-1112
Operator Effective Date: 02/28/2000
Site Contact: Steven McConkey
Site Contact Address: PO Box 389
Contact City,State,Zip: NORTH BEND, WA 98045
Contact Phone Number: (425)888-1112
Site Contact Email: NBNAPA@COMCAST.NET
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
NORTH BEND AUTO PARTS INC (Continued)

Name: NORTH BEND AUTO PARTS INC
Address: 1120 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 25439352
EPA ID: WAH000010827
NAICS: 441310
State Waste Code Desc: Not reported
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: 2009
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 175000969
Business Type: Automotive Parts
Mail Name: North Bend Auto Parts Inc
Mailing Address: PO Box 389
Mailing City, State, Zip: NORTH BEND, WA 98045
Legal Organization Name: North Bend Auto Parts Inc
Legal Organization Type: Private
Legal Contact: Richard M McConkey
Legal Address: 1119 BROWN ROAD
Legal Address 2: Not reported
Legal City, State, Zip: ELLENSBURG, WA 98926
Legal Phone Number: 509-962-9595
Legal Effective Date: 02/28/2000
Land Organization Name: North Bend Auto Parts Inc
Land Organization Type: Private
Land Contact: Richard M McConkey
Land Address: 1119 BROWN ROAD
Land City, State, Zip: ELLENSBURG, WA 98926
Land Phone Number: 509-962-9595
Operator Organization Name: North Bend Auto Parts Inc
Operator Organization Type: Private
NORTH BEND AUTO PARTS INC (Continued) 1001969718

Operator: Steven McConkey
Operator Address: PO Box 389
Operator Address 2: Not reported
Operator City,State,Zip: NORTH BEND, WA 98045
Operator Phone Number: (425)888-1112
Operator Effective Date: 02/28/2000
Site Contact: Steven McConkey
Site Contact Address: PO Box 389
Contact City,State,Zip: NORTH BEND, WA 98045
Site Contact Phone Number: (425)888-1112
Site Contact Email: NBNAPA@COMCAST.NET
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marker Directs Shipments: False
Used Oil Fuel Marker Meets Specs: False
Site Contact Address 2: Not reported

Click this hyperlink while viewing on your computer to access 1 additional WA MANIFEST: record(s) in the EDR Site Report.

AQ180  WA ASBESTOS  S125607498
Target  910 MALONEY GROVE AVE SE  N/A
Property NORTH BEND, WA

Site 5 of 5 in cluster AQ

Actual: ASBESTOS:
463 ft.
Focus Map: 12
## (Continued)

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Other CM2 Text: Not reported
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Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 602577245
Notice type: Initial
Project Type: Popcorn Ceiling, Sheet Vinyl
Supervisor: Anthony Chase (ABAS00008156) ACTIVE
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
- Envid: 1011904951
- Registry ID: 110037223000
- DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110037223000

WA MANIFEST:
- Name: KING CNTY DOT MOUNT SI BRIDGE
- Address: 43600 MOUNT SI RD
- City,State,Zip: NORTH BEND, WA 98045
- Facility Address 2: Not reported
- Facility ID: 7159756
- EPA ID: WA000003348
- NAICS: 237310
- State Waste Code Desc: Not reported
- Federal Waste Code Desc: Not reported
- Form Comm: Not reported
- Data Year: 2009
- Permit by Rule: False
- Mailing Address 2: Not reported
- Treatment by Generator: False
- Mixed Radioactive Waste: False
- Importer of Hazardous Waste: False
- Immediate Recycler: False
- Treatment/Storage/Disposal/Recycling Facility: False
- Generator of Dangerous Fuel Waste: False
- Generator Marketing to Burner: False
- Other Marketers (i.e., blender, distributor, etc.): False
- Utility Boiler Burner: False
- Industry Boiler Burner: False
- Industrial Furnace: False
- Smelter Deferal: False
- Universal Waste: Not reported
- Off-Specification: Not reported
- LN Address 2: Not reported
- Tax Reg #: 578037394
- Business Type: County Gov Rd & Bridge
- Mail Name: King County DOT Road Service Division
- Mailing Address: 201 S Jackson St KSC TR 0231
- Mailing City,State,Zip: Seattle, WA 98104-3856
- Legal Organization Name: King County DOT Road Service Division
- Legal Organization Type: County
- Legal Contact: Not reported
- Legal Address: 201 S Jackson St KSC TR 0231
- Legal Address 2: Not reported
- Legal City,State,Zip: Seattle, WA 98104-3856
- Legal Phone Number: (206)296-0267
Legal Effective Date: Not reported
Land Organization Name: King County DOT Road Service Division
Land Organization Type: County
Land Contact: Not reported
Land Address: 201 S Jackson St KSC TR 0231
Land City,State,Zip: Seattle, WA 98104-3856
Land Phone Number: (206)296-0267
Operator Organization Name: King County DOT Road Service Division
Operator Organization Type: County
Operator: Not reported
Operator Address: 201 S Jackson St KSC TR 0231
Operator Address 2: Not reported
Operator City,State,Zip: Seattle, WA 98104-3856
Operator Phone Number: (206)296-0267
Operator Effective Date: Not reported
Site Contact: Jeff McCarthy
Site Contact Address: 201 S Jackson St KSC TR 0231
Contact City,State,Zip: Seattle, WA 98104-3856
Site Contact Phone Number: (206)423-1086
Site Contact Email: jeff.mccarthy@kingcounty.gov
Gen Status Code: XQG
Monthly Generation: False
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported
Name: KING CNTY DOT MOUNT SI BRIDGE
Address: 43600 MOUNT SI RD
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 7159756
EPA ID: WAH000033348
NAICS: 237310
State Waste Code Desc: Not reported
Federal Waste Code Desc: D008
Form Comm: Not reported
Data Year: 2008
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
### KING CNTY DOT MOUNT SI BRIDGE (Continued)

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<th>Generator Marketing to Burner:</th>
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<tr>
<td>Other Marketers (i.e., blender, distributor, etc.):</td>
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<tr>
<td>Utility Boiler Burner:</td>
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<td>Smelter Deferral:</td>
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<td>(206)423-1086</td>
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<td><a href="mailto:jeff.mccarthy@kingcounty.gov">jeff.mccarthy@kingcounty.gov</a></td>
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**Site Contact:**
Jeff McCarthy
201 S Jackson St KSC TR 0231
Seattle, WA 98104-3856
(206)423-1086
jeff.mccarthy@kingcounty.gov

**Gen Status Code:**
LQG

**Monthly Generation:**
False

**Batch Generation:**
False

**One Time Generation:**
True

**Transport Own Waste:**
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**Transpots Other Waste:**
False

**Recycler Onsite:**
False

**Transfer Facility:**
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**Other Exemption:**
Not reported

**UW Battery Gen:**
False

**Used Oil Transporter:**
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**Used Oil Transfer Facility:**
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**Used Oil Processor:**
False

**Used Oil Refiner:**
False

**Used Oil Fuel Marketer Directs Shipments:**
False

**Used Oil Fuel Marketer Meets Specs:**
False
KING CNTY DOT MOUNT SI BRIDGE (Continued)

Site Contact Address 2: Not reported

Waste Stream Generated:
- Waste Managed Off Site: Y
- State Only Waste Code 1: Not reported
- State Only Waste Code 2: Not reported
- Report Managed On Site: 0
- KG Managed On Site: 0
- Generator Treatment Code: Not reported
- Permit By Rule Code: Not reported
- WCDE Residence Code: Not reported
- WCDE Origin Code: Not reported
- WCDE On Site Code: Not reported
- WCDB Code: W319
- Description: Lead Based Paint Chips with dirt, gravel, visqueen and asphalt
- CORb Sequence Number: 117167
- Sequence Number: 2000043
- Mixed Radioactive Flag: False
- Designation Code: D
- Reported Quantity: 7000
- Quantity Unit: LB
- Kilograms Quantity: 3175.2000546134414
- Density Number: Not reported
- Density Quantity: Not reported

Shipments Send:
- CORB Waste Sequence Number: 117167
- Waste Sequence Number: 2000043
- Sequence Number: 952063
- Shipment Date: 10/7/2008
- Mainfest Document ID: 002261639
- Reported Quantity: 7000
- Unit of Measure: LB
- Kilograms Quantity: 3175.20005461344
- Receiving EPAID: IDD073114654

Waste Stream Off Site Mgmt:
- CORB Waste Sequence Number: 117167
- Waste Sequence Number: 2000043
- Sequence Number: 486203
- Received EPAID: IDD073114654
- Managed Quantity: 7000
- Kilogram Quantity: 3175.2000546134414
- Recycled Percentage: 0
- Waste Management System Code: H132

Waste Stream Comments:
- CORB Waste Sequence Number: 117167
- Comments: Lead based paint, chips with dirt, gravel, visqueen and asphalt debris generated during removal and demolition of the Mount Si Bridge (located at this site from 1955 to 2008).
- Waste Sequence Number: 2000043
- Sequence Number: 1

Waste Stream EPA Code:
- CORB Waste Sequence Number: 117167
KING CNTY DOT MOUNT SI BRIDGE (Continued)

Waste Sequence Number: 2000043
Sequence Number: 4268780
WCDA Code: D008

Waste Stream Source Code:
CORB Waste Sequence Number: 117167
Waste Sequence Number: 2000043
Sequence Number: 1
WCDD Code: G19

Site 2 of 2 in cluster AT

Actual: 504 ft.
Focus Map: 13

Date form received by agency: 2010-03-10 00:00:00.0
Facility name: KING CNTY DOT MOUNT SI BRIDGE
Facility address: 43600 MOUNT SI RD
NORTH BEND, WA 98045
EPA ID: WAH000033348
Mailing address: 201 S JACKSON ST KSC TR 0231
SEATTLE, WA 98104
Contact: JULIA TURNLEY
Contact address: 201 S JACKSON ST DSC TR 0231
SEATTLE, WA 98104
Contact country: US
Contact telephone: 206-296-0267
Contact email: JULIA.TURNLEY@KINGCOUNTY.GOV
EPA Region: 10
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: KING COUNTY DOT ROAD SERVICE DIVISION
Owner/operator address: 201 S JACKSON ST KSC TR 0231
SEATTLE, WA 98104
Owner/operator country: US
Owner/operator telephone: 206-296-0267
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KING COUNTY DOT ROAD SERVICE DIVISION
Owner/operator address: 201 S JACKSON ST KSC TR 0231
SEATTLE, WA 98104
Owner/operator country: US
Owner/operator telephone: 206-296-0267
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
KING CNTY DOT MOUNT SI BRIDGE (Continued)

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KING COUNTY DOT ROAD SERVICE DIVISION
Owner/operator address: 201 S JACKSON ST KSC TR 0231
SEATTLE, WA 98104
Owner/operator country: US
Owner/operator telephone: 206-296-0267
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 2009-12-31 00:00:00.
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2010-03-09 00:00:00.0
Site name: KING CNTY DOT MOUNT SI BRIDGE
Classification: Not a generator, verified

Date form received by agency: 2010-03-09 00:00:00.0
Site name: KING CNTY DOT MOUNT SI BRIDGE
Classification: Not a generator, verified

Date form received by agency: 2010-03-09 00:00:00.0
Site name: KING CNTY DOT MOUNT SI BRIDGE
Classification: Not a generator, verified

Date form received by agency: 2010-03-09 00:00:00.0
Site name: KING CNTY DOT MOUNT SI BRIDGE
Classification: Not a generator, verified

Date form received by agency: 2009-02-26 00:00:00.0
Site name: KING CNTY DOT MOUNT SI BRIDGE
Classification: Large Quantity Generator
KING CNTY DOT MOUNT SI BRIDGE (Continued)

Date form received by agency: 2008-07-30 00:00:00.0
Site name: KING CNTY DOT MOUNT SI BRIDGE
Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:

- Waste code: D008
- Waste name: LEAD

Violation Status: No violations found

---

AS183 FRANK PADAVICH WA CSCSL U001127767
Target 1130 E NORTH BEND WAY WA LUST N/A
Property NORTH BEND, WA 98045 WA UST WA ALLSITES
Site 2 of 7 in cluster AS

Actual: 468 ft.
Focus Map: 13

CSCSL:
Name: FRANK PADAVICH
Address: 1130 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 37779318
Region: Northwest
Lat/Long: 47.486034 / -121.769411
Clean Up Siteid: 5983
Site Status: Cleanup Started
Contaminant Name: Petroleum-Other
Alternate Site Names: Not reported
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: True
Current VCP: Not reported
Ground Water: Not reported
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

LUST:
Name: FRANK PADAVICH
Address: 1130 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 37779318
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 5983
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: Not reported
Response Section: Northwest
Release Date: 01/20/1999
Lust Date: 12/02/1998
Region: Northwest
Lust ID: 5279
UST ID: 100192
Contaminant Name: Petroleum-Other
Ground Water: Not reported

---

KING CNTY DOT MOUNT SI BRIDGE (Continued)

Date form received by agency: 2008-07-30 00:00:00.0
Site name: KING CNTY DOT MOUNT SI BRIDGE
Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:

- Waste code: D008
- Waste name: LEAD

Violation Status: No violations found

---
FRANK PADAVICH (Continued)

Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.486034 / -121.76941

UST:
Name: FRANK PADAVICH
Address: 1130 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045
Facility ID: 37779318
Site Id: 100192
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.486034
Decimal Longitude: -121.76941

Tank Name: 1
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1977
Tank Closure Date: 12/02/1998
Capacity Range: 111 TO 1,100 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Not reported
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank SFC Type: Not reported
Pipe Material: Other
Pipe Construction: Other
Pipe Primary Release Detection: Other
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Other
Pipe Pumping System: Other
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: FRANK PADAVICH
Address: 1130 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 2
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 02/15/1975
Tank Closure Date: 12/02/1998
FRANK PADAVICH  (Continued)

Capacity Range: 5,000 to 9,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Not reported
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Safe Suction (No Leak Detection)
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispencer/Pump SFC Type: Not reported

Name: FRANK PADAVICH
Address: 1130 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 3
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 02/15/1975
Tank Closure Date: 12/02/1998
Capacity Range: 5,000 to 9,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Not reported
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Safe Suction (No Leak Detection)
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispencer/Pump SFC Type: Not reported

Name: FRANK PADAVICH
Address: 1130 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045
FRANK PADAVICH (Continued)

- Tank Name: 4
- Tag Number: Not reported
- Tank Status: Removed
- Tank Status Date: 08/06/1996
- Tank Install Date: 02/15/1975
- Tank Closure Date: 12/02/1998
- Capacity Range: 5,000 to 9,999 Gallons
- Tank Permit Expiration Date: Not reported
- Tank Upgrade Date: Not reported
- Tank Spill Prevention: None
- Tank Overfill Prevention: None
- Tank Material: Not reported
- Tank Construction: Single Wall Tank
- Tank Tightness Test: Not reported
- Tank Corrosion Protection: None
- Tank Manifold: Not reported
- Tank SFC Type: Not reported
- Pipe Material: Not reported
- Pipe Construction: Double Wall Pipe
- Pipe Primary Release Detection: Safe Suction (No Leak Detection)
- Pipe Second Release Detection: Not reported
- Pipe Corrosion Protection: None
- Pipe Pumping System: None
- Responsible Unit: Northwest

Name: FRANK PADAVICH
Address: 1130 E NORTH BEND WAY
City: NORTH BEND
Zip: 98045

- Tank Name: 5
- Tag Number: Not reported
- Tank Status: Removed
- Tank Status Date: 08/06/1996
- Tank Install Date: 02/15/1975
- Tank Closure Date: 12/02/1998
- Capacity Range: 5,000 to 9,999 Gallons
- Tank Permit Expiration Date: Not reported
- Tank Upgrade Date: Not reported
- Tank Spill Prevention: None
- Tank Overfill Prevention: None
- Tank Material: Not reported
- Tank Construction: Single Wall Tank
- Tank Tightness Test: Not reported
- Tank Corrosion Protection: None
- Tank Manifold: Not reported
- Tank SFC Type: Not reported
- Pipe Material: Not reported
- Pipe Construction: Double Wall Pipe
- Pipe Primary Release Detection: Safe Suction (No Leak Detection)
- Pipe Second Release Detection: Not reported
- Pipe Corrosion Protection: None
- Pipe Pumping System: None
- Responsible Unit: Northwest
FRANK PADAVICH (Continued)  U001127767

Dispenser/Pump SFC Type: Not reported

ALL SITES:
Name: FRANK PADAVICH
Facility Id: 37779318

Interaction: 41517
Interaction 1: I
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 100192
Date Interaction: 1975-02-15 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.486028327
Longitude: -121.769396226

Interaction: 89137
Interaction 1: I
Interaction 2: LSC
Ecology Program: HAZWASTE
Program Data: LSC
Facility Alt.: Transmission Plus
Program ID: Not reported
Date Interaction: 2009-04-15 00:00:00
Date Interaction 3: Local Source Cntr 7/09-3
Latitude: 47.486028327
Longitude: -121.769396226

Interaction: 41518
Interaction 1: A
Interaction 2: LUST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: Not reported
Program ID: 100192
Date Interaction: 1999-01-20 00:00:00
Date Interaction 3: LUST Facility
Latitude: 47.486028327
Longitude: -121.769396226

Interaction: 41519
Interaction 1: A
Interaction 2: VOLCLNST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: FRANK PADAVICH
Program ID: NW1966
Date Interaction: 2008-07-04 00:00:00
Date Interaction 3: Voluntary Cleanup Sites
Latitude: 47.486028327
Longitude: -121.769396226
Site 3 of 7 in cluster AS

Actual:
468 ft.

Focus Map:
13

VCP:
Name: FRANK PADAVID
Address: 1130 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
edr_fstat: WA
edr_fzip: 98045
edr_fcnty: KING
edr_zip: Not reported
Facility ID: 37779318
VCP Status: Not reported
VCP: Not reported
Ecology Status: Not reported
NFA Type: Not reported
Date NFA: Not reported
Rank: Not reported
Cleanup Siteid: 5983
Contaminant Name: Petroleum-Other
Soil: Confirmed Above Cleanup Levels

Site 4 of 7 in cluster AS

Actual:
468 ft.

Focus Map:
13

Year: 1994
Name: RONS AUTO SERVICE
Type: General Automotive Repair Shops

1995
RONS AUTO SERVICE
General Automotive Repair Shops

1998
TRANSMISSIONS PLUS INC
General Automotive Repair Shops

1999
TRANSMISSIONS PLUS INC
General Automotive Repair Shops

2000
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2001
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2002
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2003
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2004
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2005
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2006
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2007
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2008
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2009
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2010
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2011
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2012
TRANSMISSIONS PLUS INC
Automotive Transmission Repair Shops

2013
TRANSMISSIONS PLUS INC
General Automotive Repair Shops

2014
TRANSMISSIONS PLUS INC
General Automotive Repair Shops
### Site 5 of 7 in cluster AS

**Target:** 1130 E NORTH BEND WAY  
**Property:** NORTH BEND, WA  98045  

**Actual:** 468 ft.  
**Focus Map:** 13

**Environmental Interest/Information System:**
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015483154) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

---

### Site 6 of 7 in cluster AS

**Target:** 1130 E NORTH BEND WAY  
**Property:** NORTH BEND, WA  

**Actual:** 468 ft.  
**Focus Map:** 13

**RGA LUST:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Facility Name</th>
<th>Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>FRANK PADAVICH</td>
<td>1130 E NORTH BEND WAY</td>
</tr>
<tr>
<td>2011</td>
<td>FRANK PADAVICH</td>
<td>1130 E NORTH BEND WAY</td>
</tr>
<tr>
<td>2010</td>
<td>FRANK PADAVICH</td>
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<tr>
<td>1999</td>
<td>FRANK PADAVICH</td>
<td>1130 E NORTH BEND WAY</td>
</tr>
</tbody>
</table>

---

### Site 7 of 7 in cluster AS

**Target:** 1130 E NORTH BEND WAY  
**Property:** NORTH BEND, WA  

**Actual:** 468 ft.  
**Focus Map:** 13

**RGA HWS:**

<table>
<thead>
<tr>
<th>Year</th>
<th>Facility Name</th>
<th>Address</th>
</tr>
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</tr>
<tr>
<td>2011</td>
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<td>1130 E NORTH BEND WAY</td>
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<td>2010</td>
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<tr>
<td>2009</td>
<td>FRANK PADAVICH</td>
<td>1130 E NORTH BEND WAY</td>
</tr>
<tr>
<td>2008</td>
<td>FRANK PADAVICH</td>
<td>1130 E NORTH BEND WAY</td>
</tr>
</tbody>
</table>
### Site 1 of 11 in cluster AU

**Actual:** 444 ft.

<table>
<thead>
<tr>
<th>Focus Map:</th>
<th>12</th>
</tr>
</thead>
</table>

**Name:** GAS STATION  
**Address:** 721 SW MT SI BLVD  
**City, State, Zip:** NORTH BEND, WA  
**Facility ID:** 512554  
**Medium:** Not reported  
**Material Desc:** PETROLEUM - GASOLINE  
**Material Qty:** 2  
**Material Units:** QUART  
**Date Received:** 08/02/2000  
**Contact Name:** SHELL  
**Incident Date:** Not reported  
**Incident Category Type:** Not reported  
**Incident Category:** Not reported  
**Latitude:** Not reported  
**Longitude:** Not reported  
**Source Type:** Not reported  
**Source:** Not reported  
**Vessel Facility Name 2:** Not reported  
**Recovered Quantity:** Not reported  
**Resp Party Contact:** Not reported  
**Cause:** Not reported  
**Cause Type:** Not reported  
**Resp Party Name:** Not reported

### Site 2 of 11 in cluster AU

**Actual:** 444 ft.

<table>
<thead>
<tr>
<th>Focus Map:</th>
<th>12</th>
</tr>
</thead>
</table>

**Year:**  
**Name:** NORTH BEND 76  
**Type:** Gasoline Service Stations  
2005 NORTH BEND 76  
2006 NORTH BEND 76  
2007 NORTH BEND 76  
2008 NORTH BEND 76  
2009 NORTH BEND 76  
2010 NORTH BEND 76  
2011 NORTH BEND 76  
2012 NORTH BEND 76
### AU191 SAFEWAY FUEL 1528

**Target**
721 SW MT SI BLVD 721 SW MT SI BLVD

**Property**
NORTH BEND, WA  98045

**Site**
Site 3 of 11 in cluster AU

**Actual:**
444 ft.

**Focus Map:**
12

**FINDS:**
Registry ID: 110015395204

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015395204) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

### AU192 76 STATION

**Target**
721 SW MT SI BLVD 721 SW MT SI BLVD

**Property**
NORTH BEND, WA  98045

**Site**
Site 4 of 11 in cluster AU

**Actual:**
444 ft.

**Focus Map:**
12

**RGA LUST:**
2012  76 STATION  721 SW MT SI BLVD
2011  76 STATION  721 SW MT SI BLVD

### AU193 76 STATION

**Target**
721 SW MT SI BLVD 721 SW MT SI BLVD

**Property**
NORTH BEND, WA  98045

**Site**
Site 5 of 11 in cluster AU

**Actual:**
444 ft.

**Focus Map:**
12

**RGA HWS:**
2012  76 STATION  721 SW MT SI BLVD
2011  76 STATION  721 SW MT SI BLVD
## Site 1 of 3 in cluster AV

### ALL SITES:

- **Name:** SAFEWAY STORE 1528
- **Facility Id:** 3485
- **Interaction:**
  - Interaction 1: 107222
  - Interaction 2: A
- **Ecology Program:** HAZWASTE
- **Program Data:** TURBOWASTE
- **Facility Alt.:** Safeway Store 1528
- **Program ID:** WAH000044838
- **Date Interaction:** 2014-02-03 00:00:00
- **Date Interaction 3:** Hazardous Waste Generator
- **Latitude:** 47.487524878000002
- **Longitude:** -121.79191978199999

### WA MANIFEST:

- **Name:** SAFEWAY STORE 1528
- **Address:** 460 SW MT SI BLVD
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility Address 2:** Not reported
- **Facility ID:** 3485
- **EPA ID:** WAH000044838
- **NAICS:** 445110
- **State Waste Code Desc:** D001,D002
- **Federal Waste Code Desc:** WT02
- **Form Comm:** Not reported
- **Data Year:** 2017
- **Permit by Rule:** False
- **Mailing Address 2:** Not reported
- **Treatment by Generator:** False
- **Mixed Radioactive Waste:** False
- **Importer of Hazardous Waste:** False
- **Immediate Recycler:** False
- **Treatment/Storage/Disposal/Recycling Facility:** False
- **Generator of Dangerous Fuel Waste:** False
- **Generator Marketing to Burner:** False
- **Other Marketers (i.e., blender, distributor, etc.):** False
- **Utility Boiler Burner:** False
- **Industry Boiler Burner:** False
- **Industrial Furnace:** False
- **Smelter Defferal:** False
- **Universal Waste:** Not reported
- **Off-Specification:** Not reported
- **LN Address 2:** Not reported
- **Tax Reg #:** 600643521
- **Business Type:** Not reported
- **Mail Name:** Not reported
- **Mailing Address:** 5918 Stoneridge Mall Rd
- **Mailing City, State, Zip:** Pleasanton, CA 94588
- **Legal Organization Name:** Safeway Inc
- **Legal Organization Type:** Private
SAFEWAY STORE 1528 (Continued)

Legal Contact: Not reported
Legal Address: 5918 Stoneridge Mall Rd
Legal Address 2: Not reported
Legal City,State,Zip: Pleasanton, CA 94588
Legal Phone Number: (925)469-7000
Legal Effective Date: 11/20/1996
Land Organization Name: Mountain Valley Center LLC
Land Organization Type: Private
Land Contact: Not reported
Land Address: PO Box 66532
Land City,State,Zip: Burien, WA 98166
Land Phone Number: (206)242-0105
Operator Organization Name: Store Manager
Operator Organization Type: Private
Operator: Not reported
Operator Address: 460 SW Mt Si Blvd
Operator Address 2: Not reported
Operator City,State,Zip: North Bend, WA 98045
Operator Phone Number: (425)831-2122
Operator Effective Date: 11/20/1996
Site Contact: Not reported
Site Contact Address: Not reported
Site Contact Address 2: Not reported
Site Contact Phone Number: Not reported
Site Contact Email: Not reported
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: SAFEWAY STORE 1528
Address: 460 SW MT SI BLVD
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 3485
EPA ID: WAH000044838
NAICS: 445110
State Waste Code Desc: W02
Federal Waste Code Desc: D001,D002
Form Comm: Not reported
Data Year: 2017
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
<table>
<thead>
<tr>
<th><strong>SAFeway STORE 1528 (Continued)</strong></th>
<th><strong>S115348442</strong></th>
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<tbody>
<tr>
<td>Mixed Radioactive Waste:</td>
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<tr>
<td>Importer of Hazardous Waste:</td>
<td>False</td>
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<td>Immediate Recycler:</td>
<td>False</td>
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<td>Treatment/Storage/Disposal/Recycling Facility:</td>
<td>False</td>
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<td>False</td>
</tr>
<tr>
<td>Generator Marketing to Burner:</td>
<td>False</td>
</tr>
<tr>
<td>Other Marketers (i.e., blender, distributor, etc.):</td>
<td>False</td>
</tr>
<tr>
<td>Utility Boiler Burner:</td>
<td>False</td>
</tr>
<tr>
<td>Industry Boiler Burner:</td>
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<td>Industrial Furnace:</td>
<td>False</td>
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<tr>
<td>Smelter Deferral:</td>
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<tr>
<td>Universal Waste:</td>
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<td>Off-Specification:</td>
<td>Not reported</td>
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<tr>
<td>LN Address 2:</td>
<td>Not reported</td>
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<td>Tax Reg #:</td>
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<tr>
<td>Business Type:</td>
<td>Grocery Store</td>
</tr>
<tr>
<td>Mail Name:</td>
<td>Safeway Inc</td>
</tr>
<tr>
<td>Mailing Address:</td>
<td>5918 Stoneridge Mall Rd</td>
</tr>
<tr>
<td>Mailing City,State,Zip:</td>
<td>Pleasanton, CA 94588</td>
</tr>
<tr>
<td>Legal Organization Name:</td>
<td>Safeway Inc</td>
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<tr>
<td>Legal Organization Type:</td>
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<td>5918 Stoneridge Mall Rd</td>
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<tr>
<td>Legal Address 2:</td>
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<td>Legal City,State,Zip:</td>
<td>Pleasanton, CA 94588</td>
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<tr>
<td>Legal Phone Number:</td>
<td>925-469-7000</td>
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<td>Land Organization Name:</td>
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<td>Land Organization Type:</td>
<td>Private</td>
</tr>
<tr>
<td>Land Contact:</td>
<td>co Seahurst Invest Mgmt LLC</td>
</tr>
<tr>
<td>Land Address:</td>
<td>PO Box 66522</td>
</tr>
<tr>
<td>Land City,State,Zip:</td>
<td>Burien, WA 98166</td>
</tr>
<tr>
<td>Land Phone Number:</td>
<td>206-242-0105</td>
</tr>
<tr>
<td>Operator Organization Name:</td>
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<td>Used Oil Transporter:</td>
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SAFeway STORE 1528 (Continued)

Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: SAFEWAY STORE 1528
Address: 460 SW MT SI BLVD
City State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 3485
EPA ID: WAH000044838
NAICS: 445110
State Waste Code Desc: WT02
Federal Waste Code Desc: D001,D002
Form Comm: Not reported
Data Year: 2016
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 600643521
Business Type: Grocery Store
Mail Name: Safeway Inc
Mailing Address: 5918 Stoneridge Mall Rd
Mailing City,State,Zip: Pleasanton, CA 94588
Legal Organization Name: Safeway Inc
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: 5918 Stoneridge Mall Rd
Legal Address 2: Not reported
Legal City,State,Zip: Pleasanton, CA 94588
Legal Phone Number: 925-469-7000
Legal Effective Date: 11/20/1996
Land Organization Name: Mountain Valley Center LLC
Land Organization Type: Private
Land Contact: co Seahurst Invest Mgmt LLC
Land Address: PO Box 66522
Land City,State,Zip: Burien, WA 98166
Land Phone Number: 206-242-0105
Operator Organization Name: Store Manager
Operator Organization Type: Private
Operator: Not reported
SAFEWAY STORE 1528 (Continued)

Operator Address: 460 SW Mt Si Blvd
Operator Address 2: Not reported
Operator City,State,Zip: North Bend, WA 98045
Operator Phone Number: 425-831-2122
Operator Effective Date: 11/20/1996
Site Contact: Store Manager
Site Contact Address: 460 SW Mt Si Blvd
Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: 425-831-2122
Site Contact Email: Not reported
Gen Status Code: SQ3
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Tranports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marker Directs Shipments: False
Used Oil Fuel Marker Meets Specs: False
Site Contact Address 2: Not reported

Name: SAFEWAY STORE 1528
Address: 460 SW MT SI BLVD
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 3485
EPA ID: WAH000044838
NAICS: 445110
State Waste Code Desc: WT02
Federal Waste Code Desc: D001,D002,P075
Form Comm: Not reported
Data Year: 2015
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 600643521
SAFeway STORE 1528 (Continued)

Business Type: Grocery Store
Mail Name: Safeway Inc
Mailing Address: 5918 Stoneridge Mall Rd
Mailing City,State,Zip: Pleasanton, CA 94588
Legal Organization Name: Safeway Inc
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: 5918 Stoneridge Mall Rd
Legal Address 2: Not reported
Legal City,State,Zip: Pleasanton, CA 94588
Legal Phone Number: 925-467-3000
Legal Effective Date: 11/20/1996
Land Organization Name: Mountain Valley Center LLC
Land Organization Type: Private
Land Contact: co Seahurst Invest Mgmt LLC
Land Address: PO Box 66522
Land City,State,Zip: Burien, WA 98166
Land Phone Number: 206-242-0105
Operator Organization Name: Store Manager
Operator Organization Type: Private
Operator: Not reported
Operator Address: 460 SW Mt Si Blvd
Operator Address 2: Not reported
Operator City,State,Zip: North Bend, WA 98045
Operator Phone Number: 425-831-2122
Operator Effective Date: 11/20/1996
Site Contact: Store Manager
Site Contact Address: 460 SW Mt Si Blvd
Site Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: 425-831-2122
Site Contact Email: Not reported
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Transport Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Use Oil Transporter: False
Use Oil Transfer Facility: False
Use Oil Processor: False
Use Oil Refiner: False
Use Oil Fuel Marketer Directs Shipments: False
Use Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: SAFeway STORE 1528
Address: 460 SW MT SI BLVD
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 3485
EPA ID: WAH000044838
NAICS: 445110
State Waste Code Desc: WT02
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SAFEWAY STORE 1528 (Continued)

Tranports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

AV195 SAFEWAY STORE 1528 FINDS 1016782458
Target 460 SW MT SI BLVD ECHO N/A
Property NORTH BEND, WA 98045

Site 2 of 3 in cluster AV

Actual: 446 ft.
Focus Map: 12

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016782458
Registry ID: 110058229670
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110058229670

AV196 RCRA-VDG 1016977544
Target 460 SW MT SI BLVD WAH00004838
Property NORTH BEND, WA 98045

Site 3 of 3 in cluster AV

Actual: 446 ft.
Focus Map: 12

Date form received by agency: 2019-02-14 00:00:00.0
Facility name: SAFEWAY STORE 1528
Facility address: 460 SW MT SI BLVD
NORTH BEND, WA 98045
SAFeway STORE 1528 (Continued)

EPA ID: WAH000044838
Mailing address: 5918 STONERIDGE MALL RD
PLEASANTON, CA 94588
Contact: KEITH POWERS
Contact address: 5918 STONERIDGE MALL RD
PLEASANTON, CA 94588
Contact country: US
Contact telephone: 510-246-0358
Contact email: KEITH.POWERS@SAFEWAY.COM
EPA Region: 10
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name: STORE MANAGER
Owner/operator address: 460 SW MT SI BLVD
PLEASANTON, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-831-2122
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 1996-11-20 00:00:00.
Owner/Op end date: Not reported

Owner/operator name: MOUNTAIN VALLEY CENTER LLC
Owner/operator address: PO BOX 66522
BURIEN, WA 98166
Owner/operator country: US
Owner/operator telephone: 206-242-0105
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 2017-12-31 00:00:00.
Owner/Op end date: Not reported

Owner/operator name: SAFEWAY INC
Owner/operator address: 5918 STONERIDGE MALL RD
PLEASANTON, CA 94588
Owner/operator country: US

EDR ID Number: 1016977544

MAP FINDINGS

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<th>Map ID</th>
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TC5992688.2s Page 331
SAFEWAY STORE 1528 (Continued) 1016977544

Owner/operator telephone: 925-469-7000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 1996-11-20 00:00:00.
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2018-01-11 00:00:00.0
Site name: SAFEWAY STORE 1528
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2017-02-09 00:00:00.0
Site name: SAFEWAY STORE 1528
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2016-01-18 00:00:00.0
Site name: SAFEWAY STORE 1528
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2015-02-10 00:00:00.0
Site name: SAFEWAY STORE 1528
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2014-02-03 00:00:00.0
Site name: SAFEWAY STORE 1528
Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:
- Waste code: D001
  Waste name: IGNITABLE WASTE
- Waste code: D002
  Waste name: CORROSIVE WASTE
- Waste code: P075
SAFEWAY STORE 1528 (Continued)

- Waste name: NICOTINE, & SALTS (OR) PYRIDINE, 3-(1-METHYL-2-PYRROLIDINYL)-(S)-, & SALTS
- Waste code: WT02
- Waste name: Washington State Dangerous Toxic Waste with a toxic constituents concentration greater than or equal to 0.001% and less than 1.0%, determined by biological testing methods or a book designation procedure.

Violation Status: No violations found

197
Target Property
MOUNTAIN VIEW ESTATES NORTH BEND
NORTH BEND, WA 98045

ALLSITES:
Name: MOUNTAIN VIEW ESTATES NORTH BEND
Facility Id: 1577180

Actual: 465 ft.
Focus Map: 17

Interaction: 124198
Interaction 1: A
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: Mountain View Estates North Bend
Program ID: WAR306042
Date Interaction: 2017-10-18 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.487444562
Longitude: -121.7750911

AU198
Target Property
SAFEWAY FUEL 1528
715 SW MT SI BLVD
NORTH BEND, WA 98045

Site 6 of 11 in cluster AU

Actual: 445 ft.
Focus Map: 17

CSCSL:
Name: SAFEWAY FUEL 1528
Address: 721 SW MT SI BLVD
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 92656149
Region: Northwest
Lat/Long: 47.486564 / -121.792781
Clean Up Siteid: 11075
Site Status: Cleanup Started
Contaminant Name: Benzene
Alternate Site Names: MT SI 76,MT SI SHELL,NORTH BEND 76
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: Not reported
Current VCP: Not reported
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
### SAFEWAY FUEL 1528 (Continued)

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<td>Air</td>
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<td>Bedrock</td>
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<td>Responsible Unit</td>
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<tr>
<th>Name</th>
<th>SAFEWAY FUEL 1528</th>
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<tr>
<td>Address</td>
<td>721 SW MT SI BLVD</td>
</tr>
<tr>
<td>City, State, Zip</td>
<td>NORTH BEND, WA 98045</td>
</tr>
<tr>
<td>Facility ID</td>
<td>92656149</td>
</tr>
<tr>
<td>Region</td>
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</tr>
<tr>
<td>Lat/Long</td>
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<td>Clean Up Siteid</td>
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<tr>
<td>Site Status</td>
<td>Cleanup Started</td>
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<tr>
<td>Contaminant Name</td>
<td>Petroleum-Other</td>
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### MAP FINDINGS

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<td>Site Elevation</td>
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TC59992688.2s  Page 334
SAFEWAY FUEL 1528 (Continued)

Alternate Site Names: MT SI 76, MT SI SHELL, NORTH BEND 76
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: Not reported
Current VCP: Not reported
Ground Water: Suspected
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

LUST:
Name: SAFEWAY FUEL 1528
Address: 721 SW MT SI BLVD
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 92656149
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 11075
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: MT SI 76, MT SI SHELL, NORTH BEND 76
Response Section: Northwest
Release Date: 05/29/2007
Lust Date: 07/01/2011
Region: Northwest
Lust ID: 6322
UST ID: 476303
Contaminant Name: Petroleum-Diesel
Ground Water: Suspected
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.486564 / -121.79277

Name: SAFEWAY FUEL 1528
Address: 721 SW MT SI BLVD
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 92656149
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 11075
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: MT SI 76, MT SI SHELL, NORTH BEND 76
Response Section: Northwest
Release Date: 05/29/2007
Lust Date: 07/01/2011
Region: Northwest
Lust ID: 6322
UST ID: 476303
Contaminant Name: Petroleum-Other
Ground Water: Suspected
Surface Water: Not reported
Soil: Remediated-Below
SAFeway FUEL 1528 (Continued)

Name: SAFEWAY FUEL 1528
Address: 721 SW MT SI BLVD
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 92656149
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 11075
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: MT SI 76, MT SI SHELL, NORTH BEND 76
Response Section: Northwest
Release Date: 05/29/2007
Lust Date: 07/01/2011
Region: Northwest
Lust ID: 6322
UST ID: 476303
Contaminant Name: Petroleum-Gasoline
Ground Water: Suspected
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.486564 / -121.79278

UST:
Name: SAFEWAY FUEL 1528
Address: 715 SW MT SI BLVD
City: NORTH BEND

UST:
Name: SAFEWAY FUEL 1528
Address: 721 SW MT SI BLVD
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 92656149
Lust Status Type: LUST - Cleanup Started
Cleanup Site ID: 11075
Cleanup Unit Type: Upland
Process Type: Independent Action
Cleanup Unit Name: MT SI 76, MT SI SHELL, NORTH BEND 76
Response Section: Northwest
Release Date: 05/29/2007
Lust Date: 07/01/2011
Region: Northwest
Lust ID: 6322
UST ID: 476303
Contaminant Name: Benzene
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.486564 / -121.79278
SAFEWAY FUEL 1528 (Continued)

Zip: 98045
Facility ID: 92656149
Site Id: 476303
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.486564
Decimal Longitude: -121.792781

Tank Name: A5375
Tag Number: Removed
Tank Status: 11/14/2006
Tank Status Date: 08/19/1998
Tank Install Date: 02/16/2007
Tank Closure Date: 10,000 to 19,999 Gallons
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: 08/19/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Flexible Piping
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Interstitial Monitoring (or Sump Sensor)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: SAFEWAY FUEL 1528
Address: 715 SW MT SI BLVD
City: NORTH BEND
Zip: 98045

Tank Name: 2
Tag Number: A5375
Tank Status: Removed
Tank Status Date: 11/14/2006
Tank Install Date: 08/19/1998
Tank Closure Date: 02/16/2007
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: 08/19/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
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<td><strong>Name:</strong> SAFEWAY FUEL 1528</td>
<td><strong>Address:</strong> 715 SW MT SI BLVD</td>
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<td><strong>Address:</strong> 715 SW MT SI BLVD</td>
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<td><strong>Zip:</strong> 98045</td>
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**SAFeway FUEL 1528 (Continued)**

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<tr>
<td>Tank Construction</td>
<td>Double Wall Tank</td>
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<tr>
<td>Tank Tightness Test</td>
<td>Part of Automatic Tank Gauging (ATG) System</td>
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<tr>
<td>Tank Corrosion Protection</td>
<td>Corrosion Resistant</td>
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<td>Tank Manifold</td>
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<td>Tank Release Detection</td>
<td>Automatic Tank Gauging</td>
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<td>Tank SFC Type</td>
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<td>Pipe Material</td>
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<td>Pipe Construction</td>
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<td>Pipe Primary Release Detection</td>
<td>Automatic Line Leak Detector (ALLD)</td>
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<td>Pipe Secondary Release Detection</td>
<td>Intersitial Monitoring (or Sump Sensor)</td>
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<td>Pipe Corrosion Protection</td>
<td>Corrosion Resistant</td>
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<td>Pipe Pumping System</td>
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<td>Responsible Unit</td>
<td>Northwest</td>
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<tr>
<td>Dispenser/Pump SFC Type</td>
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**Name:** SAFEWAY FUEL 1528  
**Address:** 715 SW MT SI BLVD  
**City:** NORTH BEND  
**Zip:** 98045  
**Tank Name:** SUPREME/DIES  
**Tag Number:** A5375  
**Tank Status:** Operational  
**Tank Status Date:** 08/18/2008  
**Tank Install Date:** 12/28/2006  
**Tank Closure Date:** Not reported  
**Capacity Range:** 20,000 to 29,999 Gallons  
**Tank Permit Expiration Date:** 10/31/2020  
**Tank Upgrade Date:** Not reported  
**Tank Spill Prevention:** Spill Bucket/Spill Box  
**Tank Overfill Prevention:** Ball Float Valve (vent line)  
**Tank Material:** Steel Clad with Corrosion Resistant Composite  
**Tank Construction:** Double Wall Tank  
**Tank Tightness Test:** Part of Automatic Tank Gauging (ATG) System  
**Tank Corrosion Protection:** Corrosion Resistant  
**Tank Manifold:**   
**Tank Release Detection:** Automatic Tank Gauging  
**Tank SFC Type:**   
**Pipe Material:** Flexible Piping  
**Pipe Construction:** Double Wall Pipe  
**Pipe Primary Release Detection:** Automatic Line Leak Detector (ALLD)  
**Pipe Secondary Release Detection:** Intersitial Monitoring (or Sump Sensor)  
**Pipe Corrosion Protection:** Corrosion Resistant  
**Pipe Pumping System:** Pressurized System  
**Responsible Unit:** Northwest  
**Dispenser/Pump SFC Type:** Not reported  

**Name:** SAFEWAY FUEL 1528  
**Address:** 715 SW MT SI BLVD  
**City:** NORTH BEND  
**Zip:** 98045  
**Tank Name:** SUPREME/DIES  
**Tag Number:** A5375  
**Tank Status:** Operational
SAFeway FUEL 1528 (Continued)  U003528657

Tank Status Date: 08/18/2008
Tank Install Date: 12/28/2006
Tank Closure Date: Not reported
Capacity Range: 20,000 to 29,999 Gallons
Tank Permit Expiration Date: 10/31/2020
Tank Upgrade Date: Not reported
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Flexible Piping
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Interstitial Monitoring (or Sump Sensor)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: SAFeway FUEL 1528
Address: 715 SW MT SI BLVD
City: NORTH BEND
Zip: 98045

Tank Name: UNLEAD
Tag Number: A5375
Tank Status: Operational
Tank Status Date: 08/18/2008
Tank Install Date: 12/28/2006
Tank Closure Date: Not reported
Capacity Range: 20,000 to 29,999 Gallons
Tank Permit Expiration Date: 10/31/2020
Tank Upgrade Date: Not reported
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Flexible Piping
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Interstitial Monitoring (or Sump Sensor)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: SAFeway FUEL 1528
SAFEWAY FUEL 1528 (Continued)

Address: 715 SW MT SI BLVD
City: NORTH BEND
Zip: 98045

Tank Name: UNLEAD
Tag Number: A5375
Tank Status: Operational
Tank Status Date: 08/18/2008
Tank Install Date: 12/28/2006
Tank Closure Date: Not reported
Capacity Range: 20,000 to 29,999 Gallons
Tank Permit Expiration Date: 10/31/2020
Tank Upgrade Date: Not reported
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Ball Float Valve (vent line)
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Flexible Piping
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Interstitial Monitoring (or Sump Sensor)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALLSITES:
Name: SAFEWAY FUEL 1528
Facility Id: 92656149

Interaction: 72316
Interaction 1: A
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 476303
Date Interaction: 1998-08-19 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.48658330000001
Longitude: -121.792766222

Interaction: 72317
Interaction 1: I
Interaction 2: UST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: Not reported
Program ID: 476303
Date Interaction: 2007-05-29 00:00:00
Date Interaction 3: LUST Facility
SAFEWAY FUEL 1528 (Continued)

Latitude: 47.486558330000001
Longitude: -121.79276222

SAFEWAY FUEL 1528
Target 715 SW MT SI BLVD
Property NORTH BEND, WA 98045

Site 7 of 11 in cluster AU

Actual: 445 ft.
Focus Map: 17

SAFEWAY FUEL 1528
Name: SAFEWAY FUEL 1528
Address: 715 SW MT SI BLVD
City,State,Zip: NORTH BEND, WA 98045
DOE Site ID: 476303
Financial Resp Type: GREAT AMERICAN E&S INSURANCE CO
Inception Date: 07/01/2015
Expiration Date: 07/01/2017
Address 2: Not reported
Policy Number: PEL 1849466 06
Effective Date: 07/01/2015
Liability Limit Type: Not reported
Compliance Method: Not reported
Proof of Responsibility Document Flag: Not reported
Retroactive Date: Not reported
Latitude: 47.486564
Longitude: -121.792781

SAFEWAY FUEL 1528
Name: SAFEWAY FUEL 1528
Address: 715 SW MT SI BLVD
City,State,Zip: NORTH BEND, WA 98045
DOE Site ID: 476303
Financial Resp Type: GREAT AMERICAN E&S INSURANCE CO
Inception Date: 11/01/2018
Expiration Date: 11/01/2019
Address 2: Not reported
Policy Number: PEL 1849466 07
Effective Date: 07/01/2017
Liability Limit Type: Not reported
Compliance Method: Not reported
Proof of Responsibility Document Flag: Not reported
Retroactive Date: Not reported
Latitude: 47.486564
Longitude: -121.792781
SAFEWAY FUEL 1528 (Continued)

Retroactive Date: Not reported
Latitude: 47.486564
Longitude: -121.792781

Site 8 of 11 in cluster AU

Actual: 445 ft.
Focus Map: 17

SPILLS:
Name: SAFEWAY
Address: 715 W MOUNT SI BLVD
City,State,Zip: NORTH BEND, WA
Facility ID: 617582
Medium: SURFACE WATER-FRESH
Material Desc: PETROLEUM - GASOLINE
Material Qty: 5
Material Units: GALLON
Date Received: 01/15/2010
Contact Name: Not reported
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

Name: Not reported
Address: 715 W MOUNT SI BLVD
City,State,Zip: NORTH BEND, WA
Facility ID: 614626
Medium: IMPERMEABLE CONTAINMENT
Material Desc: PETROLEUM - GASOLINE
Material Qty: 3
Material Units: GALLON
Date Received: 08/11/2009
Contact Name: UNKNOWN
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported
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### Site 9 of 11 in cluster AU

- **Actual:** 445 ft.
- **Focus Map:** 17

### Focus Map:

- **Date:** 2010
- **Name:** SAFEWAY FUEL 1528
- **Address:** 715 SW MT SI BLVD

### Site 10 of 11 in cluster AU

- **Actual:** 445 ft.
- **Focus Map:** 17

### Focus Map:

- **Date:** 2008
- **Name:** SAFEWAY FUEL #1528
- **Address:** 715 SW MT SI BLVD

### Site 11 of 11 in cluster AU

- **Actual:** 445 ft.
- **Focus Map:** 17

### Focus Map:

- **Date:** 2009
- **Name:** SAFEWAY FUEL CENTER 1528
- **Address:** 715 SW MT SI BLVD

### Site 18 in cluster AU

- **Actual:** 481 ft.

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MT SI BRIDGE 2550A (Continued)

Latitude: Not reported
Longitude: Not reported
 Permit ID: WAG994404
 Permit Version: Not reported
 Permit Status: Active
 Permit SubStatus: Not reported
 Ecology Contact: Not reported
 WRIA: Not reported
 Permit Expiration Date: 07/31/2022
 Effective Date: 12/03/2018
 Days to Expiration: -1020

AW205
Target 448 SE MAPLE DRIVE ENTRYWAY/HALL
Property NORTH BEND, WA

Site 1 of 2 in cluster AW

Actual: 449 ft.
Focus Map: 17

ASBESTOS:
Name: Not reported
Address: 448 SE MAPLE DRIVE ENTRYWAY/HALL
 City,State,Zip: NORTH BEND, WA
 Facility Type: Not reported
 Parent ID: Not reported
 Form ID: 42337##1210Therm932825
 Notice Date: 09/29/2010
 Start Date: 10/05/2010
 Completion Date: 10/05/2010
 Initial: Not reported
 Amended: Not reported
 On Hold: Not reported
 Off Hold: Not reported
 Emergency: Not reported
 Site Hours Start: Not reported
 Site Hours End: Not reported
 Sunday: Not reported
 Monday: Not reported
 Tuesday: Not reported
 Wednesday: Not reported
 Thursday: Not reported
 Friday: Not reported
 Saturday: Not reported
 Contractor ID: Not reported
 Phone: Not reported
 Job Site CAS: Not reported
 Project Form Email: Not reported
 Property Owner Name: Not reported
 Property Owner Agent: Not reported
 Property Owner Company: Thermatech Northwest Inc (ABCN00001210)
 Property Owner Address: Not reported
 Property Owner City: Not reported
 Property Owner State: Not reported
 Property Owner Zip4: Not reported
 Property Owner Phone: Not reported
 Job Site Room: Not reported
 Facility Age: Not reported
 Facility Size: Not reported
 Facility Remodel: Not reported

TC5992688.2s  Page 345
(Continued)

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Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
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Quantity Lin Ft: Not reported
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Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
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Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
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Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Popcorn Ceiling
Supervisor: Joe Agosto ()
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- Mudded Pipe Insulation: Not reported
- Duct Tape: Not reported
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- Outdoors: Not reported
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- Glove Bag: Not reported
- Mini Enclosure: Not reported
- Critical Barriers: Not reported
- Wrap And Cut: Not reported
- Wet Methods: Not reported
- HEPA Vacuum: Not reported
- MANUALMETHODS: Not reported
- Other CM1: Not reported
- Other CM1 Text: Not reported
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- Comments: Not reported
- Date Time Submitted: Not reported
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- Region: 2
- UBI: 601725020
- Notice type: Initial
- Project Type: Popcorn Ceiling
- Supervisor: Joe Agosto ()
- Supervisor Phone: Not reported
- Certificate Status: ACTIVE
- Name: Not reported
- Address: 448 SE MAPLE DRIVE ENTRYWAY/HALL
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- Facility Type: Not reported
- Parent ID: Not reported
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- Start Date: 09/28/2010
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Project Type: Popcorn Ceiling
 Supervisor: Joe Agosto ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE

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Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Popcorn Ceiling
Supervisor: Joe Agosto ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE
Name: Not reported
Address: 448 SE MAPLE DRIVE ENTRYWAY/HALL
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 41800#1210Therm101143
Notice Date: 09/10/2010
Start Date: 09/20/2010
Completion Date: 09/20/2010
Initial: Not reported
Amended: Not reported
On Hold: Not reported
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Emergency: Not reported
Site Hours Start: Not reported
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Tuesday: Not reported
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Contractor ID: Not reported
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Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: Thermatech Northwest Inc (ABCN00001210)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
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Facility Remodel: Not reported
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Popcorn Ceiling: Not reported
CAB: Not reported
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VAT: Not reported
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Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Popcorn Ceiling
Supervisor: Joe Agosto
Supervisor Phone: Not reported
Certificate Status: ACTIVE

(Continued)
**AW206**

**Target**
448 MAPLE DRIVE ALL

**Property**
NORTH BEND, WA 98045

---

**Site 2 of 2 in cluster AW**

**Actual:**
449 ft.

**Focus Map:**
17

**ASBESTOS:**
- **Name:** Not reported
- **Address:** 448 MAPLE DRIVE ALL
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility Type:** SFR
- **Parent ID:** 0
- **Form ID:** 8899771427Affor43032
- **Notice Date:** 08/08/2014
- **Start Date:** 09/08/2014
- **Completion Date:** 09/10/2014
- **Initial:** 1
- **Amended:** Not reported
- **On Hold:** Not reported
- **Off Hold:** Not reported
- **Emergency:** Not reported
- **Site Hours Start:** 8:00 AM
- **Site Hours End:** 2:30 PM
- **Sunday:** Not reported
- **Monday:** 1
- **Tuesday:** 1
- **Wednesday:** Not reported
- **Thursday:** Not reported
- **Friday:** Not reported
- **Saturday:** Not reported
- **Contractor ID:** 4255128750
- **Phone:** 4255128750
- **Job Site CAS:** Anthony Chase
- **Project Form Email:** ci@affenv.net
- **Property Owner Name:** Lynn Jensen
- **Property Owner Agent:** Affordable Environmental, Inc (ABCN00001427)
- **Property Owner Address:** 448 Maple Drive
- **Property Owner City:** North Bend
- **Property Owner State:** WA
- **Property Owner Zip:** 98045
- **Property Owner Phone:** 2536386606
- **Job Site Room:** All
- **Facility Age:** 1970's
- **Facility Size:** 1230
- **Facility Remodel:** 1
- **Facility Demo:** Not reported
- **Facility Repair:** Not reported
- **Facility Maint:** Not reported
- **Removed:** 1
- **Encapsulated:** Not reported
- **Quantity Sq Ft:** 1230
- **Fireproofing:** Not reported
- **Popcorn Ceiling:** 1
- **CAB:** Not reported
- **Sheet Vinyl:** Not reported
- **Asbestos Paper:** Not reported
- **Boiler Insulation:** Not reported
- **Duct Paper:** Not reported

---

**MAP FINDINGS**

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<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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</table>

**WA ASBESTOS**

S119169880

N/A
### Property Details

**Target**: NORTH BEND CITY 1155 E NORTH BEND WAY
**Property**: NORTH BEND, WA 98045

**Actual**: 467 ft.
**Focus Map**: 18

### Map Findings

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<thead>
<tr>
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<th>Elevation</th>
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### Additional Information

- **Negative Pressure Enclosure**: Not reported
- **Glove Bag**: Not reported
- **Critical Barriers**: Not reported
- **Wrap And Cut**: Not reported
- **Wet Methods**: 1
- **HEPA Vacuum**: 1
- **MANUAL METHODS**: 1
  - Other CM1: Not reported
  - Other CM1 Text: Not reported
  - Other CM2: Not reported
  - Other CM2 Text: Not reported
  - Half Mask APR: Not reported
  - Full Face APR: Not reported
  - PAPR: Not reported
  - Type C Continuous: 1
  - Type C Pressure: Not reported
  - Other Resp Pro: 1
  - Other Resp Pro Text: PPE Pursuant to task
- **Comments**: Not reported
- **Date Time Submitted**: 2014-08-08 15:14:46
- **Submitter IP Address**: 67.183.174.255
- **Region**: 2
- **UBI**: 602577245
- **Notice type**: Initial
- **Project Type**: Popcorn Ceiling
- **Supervisor**: Anthony Chase
- **Supervisor Phone**: Not reported
- **Certificate Status**: ACTIVE

### VAT
- Not reported

### Roofing
- Not reported

### Sq Ft Other
- Not reported

### Sq Ft Other Text
- Not reported

### Quantity Lin Ft
- Not reported

### Mag Pipe Insulation
- Not reported

### Air Cell Pipe Insulation
- Not reported

### Ducting Insulation
- Not reported

### Cement Asbestos Pipe
- Not reported

### Mudded Pipe Insulation
- Not reported

### Duct Tape
- Not reported

### Lin Ft Other1
- Not reported

### Lin Ft Other1 Text
- Not reported

### Lin Ft Other2
- Not reported

### Lin Ft Other2 Text
- Not reported

### Indoors
- 1

### Outdoors
- Not reported

### VAT:
- Not reported

### Roofing:
- Not reported

### Sq Ft Other:
- Not reported

### Sq Ft Other Text:
- Not reported

### Quantity Lin Ft:
- Not reported

### Mag Pipe Insulation:
- Not reported

### Air Cell Pipe Insulation:
- Not reported

### Ducting Insulation:
- Not reported

### Cement Asbestos Pipe:
- Not reported

### Mudded Pipe Insulation:
- Not reported

### Duct Tape:
- Not reported

### Lin Ft Other1:
- Not reported

### Lin Ft Other1 Text:
- Not reported

### Lin Ft Other2:
- Not reported

### Lin Ft Other2 Text:
- Not reported

### Indoors:
- 1

### Outdoors:
- Not reported

### Neg Pres Enclosure:
- 1

### Glove Bag:
- Not reported

### Mini Enclosure:
- Not reported

### Critical Barriers:
- Not reported

### Wrap And Cut:
- Not reported

### Wet Methods:
- 1

### HEPA Vacuum:
- 1

### MANUAL METHODS:
- 1
  - Other CM1:
  - Not reported
  - Other CM1 Text:
  - Not reported
  - Other CM2:
  - Not reported
  - Other CM2 Text:
  - Not reported
  - Half Mask APR:
  - Not reported
  - Full Face APR:
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  - PAPR:
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  - Type C Continuous:
  - 1
  - Type C Pressure:
  - Not reported
  - Other Resp Pro:
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  - Other Resp Pro Text
  - PPE Pursuant to task
  - Comments:
  - Not reported
  - Date Time Submitted:
  - 2014-08-08 15:14:46
  - Submitter IP Address:
  - 67.183.174.255
  - Region:
  - 2
  - UBI:
  - 602577245
  - Notice type:
  - Initial
  - Project Type:
  - Popcorn Ceiling
  - Supervisor:
  - Anthony Chase
  - Supervisor Phone:
  - Not reported
  - Certificate Status:
  - ACTIVE

### Target Information

- **RCRA NonGen / NLR FINDS ECHO WA MANIFEST WA NPDES**

- **MAP FINDINGS** S119169880

- **207** WA ALLSITES 1007265732 WAH00022826

- **ALLSITES:**
  - Name:
  - NORTH BEND CITY
  - Facility Id:
  - 5666768
NORTH BEND CITY (Continued)

Interaction: 17257
Interaction 1: HWG
Interaction 2: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: NORTH BEND CITY
Program ID: WAH000022826
Date Interaction: 2004-02-20 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.487504328999997
Longitude: -121.771135226

Interaction: 17258
Interaction 1: HWTRNSFR
Interaction 2: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAH000022826
Date Interaction: 2004-12-31 00:00:00
Date Interaction 3: Haz Waste Transfer Facili
Latitude: 47.487504328999997
Longitude: -121.771135226

Name: NORTH BEND CITY HALL
Facility Id: 71090

RCRA NonGen / NLR:
Date form received by agency: 2009-02-04 00:00:00.0
Facility name: NORTH BEND CITY
Facility address: 1155 E NORTH BEND WAY
NORTH BEND, WA 98045
EPA ID: WAH000022826
Mailing address: PO BOX 896
NORTH BEND, WA, 98045
NORTH BEND, WA 98045
Contact: PAT OSBORNE
Contact address: PO BOX 896
NORTH BEND, WA 98045
Contact country: US
Contact telephone: 425-888-0486
Contact email: PATO@CI.NORTH-BEND.WA.US
EPA Region: 10
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: NORTH BEND CITY
Owner/operator address: PO BOX 896
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-0486
Owner/operator email: Not reported
Owner/operator fax: Not reported
NORTH BEND CITY (Continued)

Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 2002-01-01 00:00:00
Owner/Op end date: Not reported

Owner/operator name: NORTH BEND CITY
Owner/operator address: PO BOX 896
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-0486
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 2008-12-31 00:00:00
Owner/Op end date: Not reported

Owner/operator name: OSBORNE, PAT
Owner/operator address: PO BOX 896 NORTH BEND, WA. 98045
Owner/operator country: US
Owner/operator telephone: 425-888-0486
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 1996-05-20 00:00:00
Owner/Op end date: Not reported

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

Historical Generators:
Date form received by agency: 2009-02-03 00:00:00.0
Site name: NORTH BEND CITY
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2009-02-03 00:00:00.0
Site name: NORTH BEND CITY
NORTH BEND CITY (Continued)

Classification: Not a generator, verified
Date form received by agency: 2008-03-06 00:00:00.0
Site name: NORTH BEND CITY
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2007-12-31 00:00:00.0
Site name: NORTH BEND CITY
Classification: Not a generator, verified
Date form received by agency: 2007-04-05 00:00:00.0
Site name: NORTH BEND CITY
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2006-05-01 00:00:00.0
Site name: NORTH BEND CITY
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2005-12-31 00:00:00.0
Site name: NORTH BEND CITY
Classification: Not a generator, verified
Date form received by agency: 2005-04-18 00:00:00.0
Site name: NORTH BEND CITY
Classification: Not a generator, verified
Date form received by agency: 2005-04-18 00:00:00.0
Site name: NORTH BEND CITY
Classification: Conditionally Exempt Small Quantity Generator
Date form received by agency: 2004-03-05 00:00:00.0
Site name: NORTH BEND CITY
Classification: Not a generator, verified
Violation Status: No violations found

FINDS:
Registry ID: 110064679879
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p__registry_id=110064679879

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.
COMMUNITY WATER SYSTEM
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA...
program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Registry ID: 110070226846
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070226846

Environmental Interest/Information System:
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1007265732
Registry ID: 110070226846
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110070226846

Envid: 1007265732
Registry ID: 110064679879
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110064679879

WA MANIFEST:
Name: NORTH BEND CITY
Address: 1155 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 5666768
EPA ID: WAH000022826
NAICS: 221310
State Waste Code Desc: Not reported
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: 2008
Permit by Rule: False
Mailing Address 2: North Bend, Wa. 98045
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
NORTH BEND CITY  (Continued)

Tax Reg #: 175000595
Business Type: Government
Mail Name: North Bend City
Mailing Address: PO Box 896
Mailing City,State,Zip: North Bend, WA 98045
Legal Organization Name: North Bend City
Legal Organization Type: Municipal
Legal Contact: Not reported
Legal Address: PO Box 896
Legal Address 2: North Bend, WA 98045
Legal Phone Number: (425)888-0486 14
Legal Effective Date: 01/01/2002
Land Organization Name: North Bend City
Land Organization Type: Municipal
Land Contact: Not reported
Land Address: PO Box 896
Land City,State,Zip: North Bend, WA 98045
Land Phone Number: (425)888-0486 14
Operator Organization Name: Not reported
Operator Organization Type: Municipal
Operator: Pat Osborne
Operator Address: PO Box 896
Operator Address 2: North Bend, Wa. 98045
Operator City,State,Zip: North Bend, WA 98045
Operator Phone Number: (425)888-0486 14
Operator Effective Date: 05/20/1996
Site Contact: Pat Osborne
Site Contact Address: PO Box 896
Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: (425)888-0486 14
Site Contact Email: pato@ci.north-bend.wa.us

Gen Status Code: SQG
Monthly Generation: False
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: NORTH BEND CITY
Address: 1155 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 5666768
EPA ID: WAH000022826
NAICS: 221310
## NORRTH BEND CITY (Continued)

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<td>Treatment/Storage/Disposal/Recycling Facility:</td>
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<td>Generator of Dangerous Fuel Waste:</td>
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<td>Generator Marketing to Burner:</td>
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<td>Other Marketers (i.e., blender, distributor, etc.):</td>
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<td>Pat Osborne</td>
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<td>Operator Address:</td>
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<td>(425)888-0486 14</td>
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<tr>
<td>Site Contact Email:</td>
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TC5992688.2s Page 361
NORTH BEND CITY (Continued)

Transport Own Waste: FALSE
Transports Other Waste: FALSE
Recycler Onsite: FALSE
Transfer Facility: FALSE
Other Exemption: Not reported
UW Battery Gen: FALSE
Used Oil Transporter: FALSE
Used Oil Transfer Facility: FALSE
Used Oil Processor: FALSE
Used Oil Refiner: FALSE
Used Oil Fuel Marketer Directs Shipments: FALSE
Used Oil Fuel Marketer Meets Specs: FALSE
Site Contact Address 2: Not reported

Name: NORTH BEND CITY
Address: 1155 E NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 5666768
EPA ID: WAH000022826
NAICS: 221310
State Waste Code Desc: Not reported
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: Not reported
Permit by Rule: No
Mailing Address 2: North Bend Wa. 98045
Treatment by Generator: No
Mixed Radioactive Waste: No
Importer of Hazardous Waste: No
Immediate Recycler: No
Treatment/Storage/Disposal/Recycling Facility: No
Generator of Dangerous Fuel Waste: No
Generator Marketing to Burner: No
Other Marketers (i.e., blender, distributor, etc.): No
Utility Boiler Burner: No
Industry Boiler Burner: No
Industrial Furnace: No
Smelter Defferal: No
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 175000595
Business Type: Government
Mail Name: North Bend City
Mailing Address: PO Box 896
Mailing City, State, Zip: North Bend, WA 98045
Legal Organization Name: North Bend City
Legal Organization Type: Municipal
Legal Contact: Not reported
Legal Address: PO Box 896
Legal Address 2: Not reported
Legal City, State, Zip: North Bend, WA 98045
Legal Phone Number: (425)888-0486 14
Legal Effective Date: 01/01/2002
Land Organization Name: North Bend City
Land Organization Type: Municipal
NORTH BEND CITY (Continued)

<table>
<thead>
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<td>North Bend, WA 98045</td>
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<td>Land Phone Number:</td>
<td>(425)888-0486 14</td>
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<td>Operator Organization Name:</td>
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<td>Pat Osborne</td>
</tr>
<tr>
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<td>PO Box 896</td>
</tr>
<tr>
<td>Operator Address 2:</td>
<td>North Bend Wa. 98045</td>
</tr>
<tr>
<td>Operator City,State,Zip:</td>
<td>North Bend, WA 98045</td>
</tr>
<tr>
<td>Operator Phone Number:</td>
<td>(425)888-0486 14</td>
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<td>05/20/1996</td>
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<tr>
<td>Site Contact:</td>
<td>Pat Osborne</td>
</tr>
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<td>PO Box 896</td>
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<tr>
<td>Contact City,State,Zip:</td>
<td>North Bend, WA 98045</td>
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<tr>
<td>Site Contact Phone Number:</td>
<td>(425)888-0486 14</td>
</tr>
<tr>
<td>Site Contact Email:</td>
<td><a href="mailto:pato@ci.north-bend.wa.us">pato@ci.north-bend.wa.us</a></td>
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<tr>
<td>Site Contact Address 2:</td>
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Name: NORTH BEND CITY
Address: 1155 E NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 5666768
EPA ID: WAH000022826
NAICS: 221310
State Waste Code Desc: Not reported
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: Not reported
Permit by Rule: F
Mailing Address 2: North Bend, Wa. 98045

Treatment by Generator: F
Mixed Radioactive Waste: F
Importer of Hazardous Waste: F
Immediate Recycler: F
Treatment/Storage/Disposal/Recycling Facility: F
Generator of Dangerous Fuel Waste: F
Generator Marketing to Burner: F
Other Marketers (i.e., blender, distributor, etc.): F
Utility Boiler Burner: F
NORTH BEND CITY (Continued)

Industry Boiler Burner: F
Industrial Furnace: F
Smelter Defferal: F
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 175000595
Business Type: Government

Mail Name: North Bend City
Mailing Address: PO Box 896
Mailing City,State,Zip: North Bend, WA 98045
Legal Organization Name: North Bend City
Legal Organization Type: Municipal
Legal Contact: Not reported
Legal Address: PO Box 896
Legal Address 2: Not reported
Legal City,State,Zip: North Bend, WA 98045
Legal Phone Number: (425)888-0486 14
Legal Effective Date: 01/01/2002

Land Organization Name: North Bend City
Land Organization Type: Municipal
Land Contact: Not reported
Land Address: PO Box 896
Land City,State,Zip: North Bend, WA 98045
Land Phone Number: (425)888-0486 14
Operator Organization Name: Not reported
Operator Organization Type: Municipal
Operator: Pat Osborne
Operator Address: PO Box 896
Operator City,State,Zip: North Bend, Wa. 98045
Operator Phone Number: (425)888-0486 14
Operator Effective Date: 05/20/1996

Site Contact: Pat Osborne
Site Contact Address: PO Box 896
Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: (425)888-0486 14
Site Contact Email: pato@ci.north-bend.wa.us
Gen Status Code: SQG
Monthly Generation: F
Batch Generation: F
One Time Generation: F
Transport Own Waste: F
Transports Other Waste: F
Recycler Onsite: F
Transfer Facility: F
Other Exemption: Not reported

Monthly Generation: F
Batch Generation: F
One Time Generation: F
Transport Own Waste: F
Transports Other Waste: F
Recycler Onsite: F
Transfer Facility: F
Other Exemption: Not reported

UW Battery Gen: F
Used Oil Transporter: F
Used Oil Transfer Facility: F
Used Oil Processor: F
Used Oil Refiner: F
Used Oil Fuel Marketer Directs Shipments: F
Used Oil Fuel Marketer Meets Specs: F

Site Contact Address 2: Not reported
### NORTH BEND CITY (Continued)

**NPDES:**
- **Name:** NORTH BEND CITY HALL
- **Address:** 1155 E NORTH BEND WAY
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility Status:** Not reported
- **Facility Type:** Construction SW GP
- **Admin Region:** Headquarters
- **Date Issued:** 11/18/2015
- **Latitude:** Not reported
- **Longitude:** Not reported
- **Permit ID:** WAR306273
- **Permit Version:** Not reported
- **Permit Status:** Active
- **Permit SubStatus:** Not reported
- **Ecology Contact:** Not reported
- **WRIA:** Not reported
- **Permit Expiration Date:** 12/31/2020
- **Effective Date:** 03/12/2018
- **Days to Expiration:** -443

#### AX208 VECTOR CONSTRUCTION
**Property:** WA ALLSITES | S111288983 | N/A

**Site 1 of 2 in cluster AX**

- **Actual:** 448 ft.
- **Focus Map:** 17

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- **Interaction:** 97872
- **Interaction 1:** A
- **Interaction 2:** RSVP
- **Ecology Program:** HAZWASTE
- **Program Data:** RSVP
- **Facility Alt.:** Vector Construction
- **Program ID:** Not reported
- **Date Interaction:** 2011-03-07 00:00:00
- **Date Interaction 3:** Revised Site Visit Progra
- **Latitude:** 47.487146330000002
- **Longitude:** -121.789978222

#### AX209 VECTOR CONSTRUCTION
**Property:** FINDS | 1014910989 | N/A

**Site 2 of 2 in cluster AX**

- **Actual:** 448 ft.
- **Focus Map:** 17

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**Environmental Interest/Information System:**
Washington Facility / Site Identification System (WA-FSIS) provides a
VECTOR CONSTRUCTION (Continued)

means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

AY210 MALONEY GROVE 9 LOT SHORT PLAT
Target 701 MALONEY GROVE AVE SE
Property NORTH BEND, WA 98045

Site 1 of 3 in cluster AY

Actual: 467 ft.
Focus Map: 17

AY211 MALONEY GROVE 9 LOT SHORT PLAT
Target 701 MALONEY GROVE AVE SE
Property NORTH BEND, WA 98045

Site 2 of 3 in cluster AY

AY210 MALONEY GROVE 9 LOT SHORT PLAT
Target 701 MALONEY GROVE AVE SE
Property NORTH BEND, WA 98045

Site 1 of 3 in cluster AY

Actual: 467 ft.
Focus Map: 17

AY211 MALONEY GROVE 9 LOT SHORT PLAT
Target 701 MALONEY GROVE AVE SE
Property NORTH BEND, WA 98045

Site 2 of 3 in cluster AY

Actual: 467 ft.
Focus Map: 17

MAP FINDINGS

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ASBESTOS:
Name: Not reported
Address: 701 MALONEY GROVE AVE SE
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 75478#1172Partn103178
Notice Date: 08/19/2013
Start Date: 08/29/2013
Completion Date: 09/20/2013
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported

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MALONEY GROVE 9 LOT SHORT PLAT  (Continued)  

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MALONEY GROVE 9 LOT SHORT PLAT  (Continued)

- **PAPR:** Not reported
- **Type C Continuous:** Not reported
- **Type C Pressure:** Not reported
- **Other Resp Pro:** Not reported
- **Other Resp Pro Text:** Not reported
- **Comments:** Not reported
- **Date Time Submitted:** Not reported
- **Submitter IP Address:** Not reported
- **Region:** 2
- **UBI:** 601546194
- **Notice type:** Initial
- **Project Type:** Popcorn Ceiling, Sheet Vinyl, Vinyl Asbestos Tile
- **Supervisor:** Wade Lee
- **Supervisor Phone:** Not reported
- **Certificate Status:** EXPIRED

---

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

---

SMITTYS INC

- **Name:** SMITTYS INC
- **Facility Id:** 11055
- **Interaction:** 80146
- **Interaction 1:** A

---

**Site 1 of 7 in cluster AZ**

**Actual:**
**474 ft.**

**Focus Map:**
**18**
SMITTYS INC (Continued)

Interaction 2: RSVP
Ecology Program: HAZWASTE
Program Data: RSVP
Facility Alt.: Smittys Inc
Program ID: Not reported
Date Interaction: 2006-09-24 00:00:00
Date Interaction 3: Revised Site Visit Progra
Latitude: 47.489084882
Longitude: -121.774351309

AZ214   SMITTYS INC
Target 1410 E NORTH BEND WAY
Property NORTH BEND, WA 98045

FINDS 1012294824
N/A

Site 2 of 7 in cluster AZ

FINDS:
 Registry ID: 110040127519
 Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_ registry_id=110040127519

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

AZ215   SNOQUALMIE VALLEY APARTMENTS
Target 42700 SE NORTH BEND WAY
Property NORTH BEND, WA 98045

FINDS 110036488
N/A

Site 3 of 7 in cluster AZ

FINDS:
 Registry ID: 83834
 Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_ registry_id=83834

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
Site 4 of 7 in cluster AZ

Actual: 475 ft.
Focus Map: 18

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Registry ID: 110015493036
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015493036

Environmental Interest/Information System:
US EPA Air Quality System (AQS) contains ambient air pollution data collected by EPA, State, Local, and Tribal air pollution control agencies from thousands of monitoring stations.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Site 5 of 7 in cluster AZ

Actual: 475 ft.
Focus Map: 18

Environmental Interest/Information System:
US EPA Air Quality System (AQS) contains ambient air pollution data collected by EPA, State, Local, and Tribal air pollution control agencies from thousands of monitoring stations.

Click this hyperlink while viewing on your computer to access additional EDR Hist Auto detail in the EDR Site Report.
### Site 6 of 7 in cluster AZ

#### Actual: 475 ft.

**Focus Map:** 18

**UST:**
- **Name:** NORTH BEND RANGER STN
- **Address:** 42404 SE NORTH BEND WAY
- **City:** NORTH BEND
- **Zip:** 98045
- **Facility ID:** 32441422
- **Site Id:** 115
- **UBI:** Not reported
- **Phone Number:** Not reported
- **Decimal Latitude:** 47.483264
- **Decimal Longitude:** -121.76356

- **Tank Name:** 1
- **Tag Number:** Not reported
- **Tank Status:** Removed
- **Tank Status Date:** 08/06/1996
- **Tank Install Date:** 12/31/1964
- **Tank Closure Date:** Not reported
- **Capacity Range:** 111 TO 1,100 Gallons
- **Tank Permit Expiration Date:** Not reported
- **Tank Upgrade Date:** Not reported
- **Tank Spill Prevention:** Not reported
- **Tank Overfill Prevention:** Not reported
- **Tank Material:** Steel
- **Tank Construction:** Not reported
- **Tank Tightness Test:** Not reported
- **Tank Corrosion Protection:** Not reported
- **Tank Manifold:** Not reported
- **Tank Release Detection:** Not reported
- **Tank SFC Type:** Not reported
- **Pipe Material:** Steel
- **Pipe Construction:** Not reported
- **Pipe Primary Release Detection:** Not reported
- **Pipe Second Release Detection:** Not reported
- **Pipe Corrosion Protection:** Not reported
- **Pipe Pumping System:** Not reported
- **Responsible Unit:** Northwest
- **Dispenser/Pump SFC Type:** Not reported

**Name:** NORTH BEND RANGER STN
- **Address:** 42404 SE NORTH BEND WAY
- **City:** NORTH BEND
- **Zip:** 98045

- **Tank Name:** 2
- **Tag Number:** Not reported
- **Tank Status:** Removed
- **Tank Status Date:** 08/06/1996
- **Tank Install Date:** 12/31/1964
- **Tank Closure Date:** Not reported
- **Capacity Range:** Not reported
- **Tank Permit Expiration Date:** Not reported
- **Tank Upgrade Date:** Not reported

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#### MAP FINDINGS

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NORTH BEND RANGER STN (Continued)

Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Steel
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: NORTH BEND RANGER STN
Address: 42404 SE NORTH BEND WAY
City: NORTH BEND
Zip: 98045
Tank Name: 3
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Steel
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALLSITES:
Name: NORTH BEND RANGER STN
Facility Id: 32441422
Interaction: 37925
Interaction 1: I
Interaction 2: UST
AZ219  SNOQUALMIE VALLEY APARTMENTS
Target  42700 SE NORTH BEND WAY
Property NORTH BEND, WA  98045
Site 7 of 7 in cluster AZ
Actual:  475 ft.
Focus Map:  18
FINDS:  1016706240
Registry ID:  110056478565
Facility URL:  http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110056478565

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

BA220  MALONEY GROVE 13
Target  710 MALONEY GROVE AVE SE
Property NORTH BEND, WA  98045
Site 1 of 2 in cluster BA
Actual:  468 ft.
Focus Map:  17
ALLSITES:  MALONEY GROVE 13
Facility Id:  4987
Interaction:  114177
Interaction 1:  
Interaction 2:  constswgp
Ecology Program:  WATQUAL
Program Data:  PARIS
Facility Alt.:  Maloney Grove 13
Program ID:  WAR303313
Date Interaction:  2015-07-31 00:00:00
Date Interaction 3:  Construction SW GP
Latitude:  47.486393528000001
Longitude:  -121.774176174

ASBESTOS:  
Name:  Not reported
MALONEY GROVE 13 (Continued)

Address: 710 MALONEY GROVE AVE SE BEDROOM, LAUNDRY & BATH
City,State,Zip: NORTH BEND, WA 98045
Facility Type: SFR
Parent ID: 0
Form ID: 100116##1427Affor633105
Notice Date: 05/08/2015
Start Date: 05/21/2015
Completion Date: 05/22/2015
Initial: 1
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: 8:00am
Site Hours End: 2:30pm
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: 1
Friday: 1
Saturday: Not reported
Contractor ID: 425.512.8750
Phone: Anthony Chase
Job Site CAS: ci@affenv.net
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Peter
Property Owner Company: Affordable Environmental, Inc (ABCN00001427)
Property Owner Address: PO Box 2993
Property Owner City: Issaquah
Property Owner State: WA
Property Owner Zip4: 98027
Property Owner Phone: 2066192992
Job Site Room: Bedroom, Laundry & Bath
Facility Age: 1970's
Facility Size: 825
Facility Remodel: 1
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 825
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: 1
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
Sq Ft Other Text: Drywall
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
MALONEY GROVE 13 (Continued)  S118147047

Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: 1
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUALMETHODS : 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: 1
Other Resp Pro: Not reported
Other Resp Pro Text: PPE Pursuant to task
Comments: Not reported
Date Time Submitted: 2015-05-08 14:41:33
Submitter IP Address: 73.193.81.219
Region: 2
UBI: 602577245
Notice type: Initial
Project Type: Other Square Footage, Sheet Vinyl
Supervisor: Anthony Chase
Supervisor Phone: Not reported
Certificate Status: ACTIVE

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<th>MALONEY GROVE 13</th>
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Site 2 of 2 in cluster BA

Actual: 468 ft.
Focus Map: 17

ENVIRONMENTAL INTEREST/INFORMATION SYSTEM

Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water...
MALONEY GROVE 13 (Continued)

Quality Programs.
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1018122379
Registry ID: 110064653888
DFR URL: http://echo.epa.gov/detailed-facility-report?id=110064653888

BB222 ROWLEY ENTERPRISE/ MT. SI WA ICR S104487349 WA ALLSITES N/A
Target 43321 MT. SI ROAD SE N/A Property NORTH BEND, WA 98045

Site 1 of 3 in cluster BB

Actual: 484 ft. Focus Map: 18
ICR:
Date Ecology Received Report: 11/19/90
Contaminants Found at Site: Petroleum products
Media Contaminated: Sediment, Groundwater
Waste Management: Handling practices
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 91-20
County Code: 17
Contact: Not reported
Report Title: Not reported

BB23 ROWLEY ENTERPRISES MT SI WA ALLSITES S104971757
Target 43321 MT SI RD SE N/A Property NORTH BEND, WA 98045

Site 2 of 3 in cluster BB

Actual: 484 ft. Focus Map: 18
Name: ROWLEY ENTERPRISES MT SI
Facility Id: 2305
Interaction: 4139
Interaction 1: I
Interaction 2: SCS
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: ROWLEY ENTERPRISES MT SI
Program ID: Not reported
Date Interaction: 1991-01-04 00:00:00
Date Interaction 3: State Cleanup Site
Latitude: 47.48491432600002
Longitude: -121.761945228
ROWLEY ENTERPRISES MT SI (Continued)

CSCSL NFA:

Name: ROWLEY ENTERPRISES MT SI
Address: 43321 MT SI RD SE
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 2305
CS Id: 1609
NFA Date: 03/27/1992
Alternate Site Names: 43321 MT SI RD SE
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Halogenated Organics
Ground Water: Suspected
Surface Water: Not reported
Soil: Suspected
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.48492
Longitude: -121.76196

Name: ROWLEY ENTERPRISES MT SI
Address: 43321 MT SI RD SE
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 2305
CS Id: 1609
NFA Date: 03/27/1992
Alternate Site Names: 43321 MT SI RD SE
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Metals Priority Pollutants
Ground Water: Suspected
Surface Water: Not reported
Soil: Suspected
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.48492
Longitude: -121.76196

Name: ROWLEY ENTERPRISES MT SI
Address: 43321 MT SI RD SE
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 2305
CS Id: 1609
NFA Date: 03/27/1992
Alternate Site Names: 43321 MT SI RD SE
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Non-Halogenated Solvents
Ground Water: Suspected
Surface Water: Not reported
Soil: Suspected
Sediment: Not reported
Air: Not reported
ROWLEY ENTERPRISES MT SI (Continued)

Bedrock: Not reported
Latitude: 47.48492
Longitude: -121.76196

Name: ROWLEY ENTERPRISES MT SI
Address: 43321 MT SI RD SE
City, State, Zip: NORTH BEND, WA 98045
Facility/Site ID: 2305
CS Id: 1609
NFA Date: 03/27/1992
Alternate Site Names: 43321 MT SI RD SE
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum Products-Unspecified
Ground Water: Remediated
Surface Water: Not reported
Soil: Remediated
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.48492
Longitude: -121.76196

BB224 ROWLEY ENTERPRISES MT SI FINDS 1007080570 N/A
Target 43321 MT SI RD SE Property NORTH BEND, WA 98045

Site 3 of 3 in cluster BB

Actual: 484 ft.
Focus Map: 18

FINDS:
Registry ID: 110015572904
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015572904

Environmental Interest/Information System:
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

225 Target Property NORTH BEND, WA
WA SPILLS S120916942 N/A

Actual: 604 ft.
Focus Map: 19
(Continued)

Material Units: Not reported
Date Received: Not reported
Contact Name: Not reported
Incident Date: 06/20/2017
Incident Category Type: Oil Spill
Incident Category: Oil Spill
Latitude: 47.4851
Longitude: -121.7313
Source Type: Vehicle
Source: Construction/utility vehicle
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: REPUBLIC SERVICES

---

226
Target Property NORTH BEND, WA

SPILLS:
Name: Not reported
Address: Not reported
City, State, Zip: NORTH BEND, WA
Facility ID: 91432
Medium: Land
Material Desc: Z-UNKNOWN
Material Qty: Not reported
Material Units: Not reported
Date Received: Not reported
Contact Name: Not reported
Incident Date: 11/19/2016
Incident Category Type: Oil Spill
Incident Category: Oil Spill
Latitude: 47.48440
Longitude: -121.73170
Source Type: Vehicle
Source: Other - Vehicle
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

---

227
Target Property GRANITE LAKES QUARRY

GRANITE LAKES QUARRY MIDDLE FORK RD & GRANITE CREEK RD NORTH BEND, WA 98045

FINDS 1006797233 N/A

FINDS:
Registry ID: 110013672374
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110013672374

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Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a
GRANITE LAKES QUARRY (Continued)

means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

---

228 NEAR 11.7 MILE OF E OF 468TH AVENUE SE
Target Property NEAR 11.7 MILE OF E OF 468TH AVENUE SE
NORTH BEND, WA 98045

US BROWNFIELDS: NEAR 11.7 MILE OF E OF 468TH AVENUE SE
Name: NEAR 11.7 MILE OF E OF 468TH AVENUE SE
Address: NEAR 11.7 MILE OF E OF 468TH AVENUE SE
City, State, Zip: NORTH BEND, WA 98045
Recipient Name: Public Health Seattle & King County
Grant Type: Assessment
Property Number: 2124109001
Parcel size: 1
Latitude: 47.483725
Longitude: -121.781132
HCM Label: Not reported
Map Scale: Not reported
Point of Reference: Not reported
Highlights: Not reported
Datum: Not reported
Acres Property ID: 20541
IC Data Access: Not reported
Start Date: Not reported
Redev Completion Date: Not reported
Completed Date: Not reported
Acres Cleaned Up: Not reported
Cleanup Funding: Not reported
Cleanup Funding Source: Not reported
Assessment Funding: Not reported
Assessment Funding Source: Not reported
Redevelopment Funding: Not reported
Redev. Funding Source: Not reported
Redev. Funding Entity Name: Not reported
Redevelopment Start Date: Not reported
Assessment Funding Entity: Not reported
Cleanup Funding Entity: Not reported
Grant Type: N/A
Accomplishment Type: Not reported
Accomplishment Count: 0
Cooperative Agreement Number: 97093401
Start Date: Not reported
Ownership Entity: Government
Completion Date: Not reported
Current Owner: Jim Franzel, USFS
Did Owner Change: Not reported
Cleanup Required: Not reported
Video Available: Not reported
Photo Available: Not reported
Institutional Controls Required: Not reported
IC Category Proprietary Controls: Not reported
IC Cat. Info. Devices: Not reported
NEAR 11.7 MILE OF E OF 468TH AVENUE SE  (Continued)  1023620280

IC Cat. Gov. Controls: Not reported
IC Cat. Enforcement Permit Tools: Not reported
IC in place date: Not reported
IC in place: U
State/tribal program date: Not reported
State/tribal program ID: Not reported
State/tribal NFA date: Not reported
Air contaminated: Not reported
Air cleaned: Not reported
Asbestos found: Not reported
Asbestos cleaned: Not reported
Controled substance found: Not reported
Controled substance cleaned: Not reported
Drinking water affected: Not reported
Drinking water cleaned: Not reported
Groundwater affected: Not reported
Groundwater cleaned: Not reported
Lead contaminant found: Not reported
Lead cleaned up: Not reported
No media affected: Not reported
Unknown media affected: Not reported
Other cleaned up: Not reported
Other metals found: Not reported
Other metals cleaned: Not reported
Other contaminants found: Not reported
Other contams found description: Not reported
PAHs found: Not reported
PAHs cleaned up: Not reported
PCBs found: Not reported
PCBs cleaned up: Not reported
Petro products found: Not reported
Petro products cleaned: Not reported
Sediments found: Not reported
Sediments cleaned: Not reported
Soil affected: Not reported
Soil cleaned up: Not reported
Surface water cleaned: Not reported
VOCs found: Not reported
VOCs cleaned: Not reported
Cleanup other description: Not reported
Num. of cleanup and re-dev. jobs: Not reported
Past use greenspace acreage: Not reported
Past use residential acreage: Not reported
Surface Water: Not reported
Past use commercial acreage: Not reported
Past use industrial acreage: Not reported
Future use greenspace acreage: Not reported
Future use residential acreage: Not reported
Future use commercial acreage: Not reported
Future use industrial acreage: Not reported
Greenspace acreage and type: Not reported
Superfund Fed. landowner flag: Not reported
Arsenic cleaned up: Not reported
Cadmium cleaned up: Not reported
Chromium cleaned up: Not reported
Copper cleaned up: Not reported
Iron cleaned up: Not reported
NEAR 11.7 MILE OF E OF 468TH AVENUE SE (Continued) 1023620280

mercury cleaned up: Not reported
Nickel cleaned Up: Not reported
No clean up: Not reported
Pesticides cleaned up: Not reported
Selenium cleaned up: Not reported
SVOCs cleaned up: Not reported
Unknown clean up: Not reported
Arsenic contaminant found: Not reported
Cadmium contaminant found: Not reported
Chromium contaminant found: Not reported
Copper contaminant found: Not reported
Iron contaminant found: Not reported
Mercury contaminant found: Not reported
Nickel contaminant found: Not reported
No contaminant found: Not reported
Pesticides contaminant found: Not reported
Selenium contaminant found: Not reported
SVOCs contaminant found: Not reported
Unknown contaminant found: Not reported
Future Use: Multistory
Media affected Bluiding Material: Not reported
Media affected indoor air: Not reported
Building material media cleaned up: Not reported
Indoor air media cleaned up: Not reported
Unknown media cleaned up: Not reported
Vacant Housing Number: 0
Vacant Housing Percent: .0%
Unemployed Number: 49
Unemployed Percent: 3.0%

FINDS:
Registry ID: 110060678510
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110060678510

Environmental Interest/Information System:
US EPA Assessment, Cleanup and Redevelopment Exchange System (ACRES)
is an federal online database for Brownfields Grantees to
electronically submit data directly to EPA.

Click this hyperlink while viewing on your computer to access
additional FINDS: detail in the EDR Site Report.
Site 1 of 2 in cluster BC

Actual: 466 ft.
Focus Map: 17

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Site 2 of 2 in cluster BC

Actual: 466 ft.
Focus Map: 17

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (CIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
MAP FINDINGS

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<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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**231**  
**LEVEL 3 COMMUNICATIONS INC NORTH BEND**  
**WA ALLSITES**  
**Target**  
43411 SE NORTH BEND WAY  
**Property**  
NORTH BEND, WA 98045  
**Actual:**  
491 ft.  
**Focus Map:**  
18  

**ALLSITES:**  
**Name:** LEVEL 3 COMMUNICATIONS INC NORTH BEND  
**Facility Id:** 9011069  
**Interaction:** 23881  
**Interaction 1:** A  
**Interaction 2:** TIER2  
**Ecology Program:** HAZWASTE  
**Program Data:** EPCRA  
**Facility Alt.:** Not reported  
**Program ID:** CRK000052490  
**Date Interaction:** 2003-09-15 00:00:00  
**Date Interaction 2:** Emergency/Haz Chem Rpt T  
**Latitude:** 47.482626781999997  
**Longitude:** -121.762044504  

**FINDS:**  
**Registry ID:** 110022935127  
**Facility URL:** http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_program_facility=2003-09-15 00:00:00&registry_id=110022935127  

**Environmental Interest/Information System:**  
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.  
[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_program_facility=2003-09-15 00:00:00&registry_id=110022935127) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

---

**232**  
**I-90 NORTH BEND CORPORATE PARK**  
**WA NPDES**  
**Target**  
468TH AVE SE BW SE 140TH SE N BEND WAY  
**Property**  
NORTH BEND, WA 98045  
**Actual:**  
546 ft.  
**Focus Map:**  
19  

**NPDES:**  
**Name:** I-90 NORTH BEND CORPORATE PARK  
**Address:** 468TH AVE SE BW SE 140TH SE N BEND WAY  
**City, State, Zip:** NORTH BEND, WA 98045  
**Facility Status:** Active  
**Facility Type:** Construction SW GP  
**Admin Region:** Headquarters  
**Date Issued:** 11/18/2015  
**Latitude:** 47.48226640  
**Longitude:** -121.736423  
**Permit ID:** WAR012243  
**Permit Version:** 3  
**Permit Status:** Active  
**Permit SubStatus:** Coverage Issued  
**Ecology Contact:** Tracie Walters  
**WRIA:** Snohomish  
**Permit Expiration Date:** 12/31/2020  
**Effective Date:** 01/01/2016  
**Days to Expiration:** -443
### Site 1 of 4 in cluster BD

**Actual:** 494 ft.

**Focus Map:** 18

**Site**

**BD233**

**APPLIED PROFESSIONAL SVCS INC NORTH BEND**

**RCRA NonGen / NLR**

**Target**

43530 SE NORTH BEND WAY

**Property**

NORTH BEND, WA 98045

**Date form received by agency:** 2019-03-05 00:00:00.0

**Facility name:** APPLIED PROFESSIONAL SVCS INC NORTH BEND

**Facility address:**

43530 SE NORTH BEND WAY
NORTH BEND, WA 98045

**EPA ID:** WAH000051652

**Contact:** STEVE BROWN

**Contact address:**

43530 SE NORTH BEND WAY
NORTH BEND, WA 98045

**Contact country:** US

**Contact telephone:** 425-888-2590

**Contact email:** STEVEB@APSLOCATES.COM

**EPA Region:** 10

**Classification:** Non-Generator

**Description:** Handler: Non-Generators do not presently generate hazardous waste

### Owner/Operator Summary

**Owner/operator name:** APPLIED PROFESSIONAL SERVICES INC

**Owner/operator address:**

43530 SE NORTH BEND WAY
NORTH BEND, WA 98045

**Owner/operator country:** US

**Owner/operator telephone:** 425-888-2590

**Owner/operator email:** Not reported

**Owner/operator fax:** Not reported

**Owner/operator extension:** Not reported

**Legal status:** Private

**Owner/Operator Type:** Operator

**Owner/Op start date:** 2003-01-01 00:00:00.

**Owner/Op end date:** Not reported

**Owner/operator name:** DOUBLE BS LLC

**Owner/operator address:**

43530 SE NORTH BEND WAY
NORTH BEND, WA 98405

**Owner/operator country:** US

**Owner/operator telephone:** 425-888-2590

**Owner/operator email:** Not reported

**Owner/operator fax:** Not reported

**Owner/operator extension:** Not reported

**Legal status:** Private

**Owner/Operator Type:** Owner

**Owner/Op start date:** 2017-12-31 00:00:00.

**Owner/Op end date:** Not reported

**Owner/operator name:** BROWN, STEVE B

**Owner/operator address:**

43530 SE NORTH BEND WAY
NORTH BEND, WA 98045

**Owner/operator country:** US

**Owner/operator telephone:** 425-888-2590

**Owner/operator email:** Not reported

**Owner/operator fax:** Not reported

**Owner/operator extension:** Not reported

**Legal status:** Private

**Owner/Operator Type:** Owner

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**MAP FINDINGS**

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**MAP FINDINGS:**

**Site:**

**BD233**

**Site 1 of 4 in cluster BD**

**Actual:** 494 ft.

**Focus Map:** 18

**Site Elevation:**

<table>
<thead>
<tr>
<th>Site</th>
<th>Distance</th>
<th>Map ID</th>
<th>Direction</th>
<th>Database(s)</th>
<th>EDR ID Number</th>
<th>EPA ID Number</th>
</tr>
</thead>
</table>
APPLIED PROFESSIONAL SVCS INC NORTH BEND (Continued)

Owner/Op start date: 2005-01-01 00:00:00.
Owner/Op end date: Not reported

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

Historical Generators:
- Date form received by agency: 2018-01-10 00:00:00.0
  Site name: APPLIED PROFESSIONAL SVCS INC NORTH BEND
  Classification: Not a generator, verified

- Date form received by agency: 2016-09-29 00:00:00.0
  Site name: APPLIED PROFESSIONAL SVCS INC NORTH BEND
  Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:
- Waste code: WT01
  Waste name: Washington State Extremely Hazardous Toxic Waste with a toxic constituents concentration greater than or equal to 1.0%, determined by biological testing methods or a book designation procedure.

- Waste code: WT02
  Waste name: Washington State Dangerous Toxic Waste with a toxic constituents concentration greater than or equal to 0.001% and less than 1.0%, determined by biological testing methods or a book designation procedure.

Violation Status: No violations found

Site 2 of 4 in cluster BD

Actual: 494 ft.
### APPLIED PROFESSIONAL SVCS INC NORTH BEND (Continued)

<table>
<thead>
<tr>
<th>NAICS:</th>
<th>541360</th>
</tr>
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<tbody>
<tr>
<td>State Waste Code Desc:</td>
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<tr>
<td>Federal Waste Code Desc:</td>
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<tr>
<td>Data Year:</td>
<td>2017</td>
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<tr>
<td>Permit by Rule:</td>
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<tr>
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<tr>
<td>Treatment by Generator:</td>
<td>False</td>
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<tr>
<td>Mixed Radioactive Waste:</td>
<td>False</td>
</tr>
<tr>
<td>Importer of Hazardous Waste:</td>
<td>False</td>
</tr>
<tr>
<td>Immediate Recycler:</td>
<td>False</td>
</tr>
<tr>
<td>Treatment/Storage/Disposal/Recycling Facility:</td>
<td>False</td>
</tr>
<tr>
<td>Generator of Dangerous Fuel Waste:</td>
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</tr>
<tr>
<td>Generator Marketing to Burner:</td>
<td>False</td>
</tr>
<tr>
<td>Other Marketers (i.e., blender, distributor, etc.):</td>
<td>False</td>
</tr>
<tr>
<td>Utility Boiler Burner:</td>
<td>False</td>
</tr>
<tr>
<td>Industry Boiler Burner:</td>
<td>False</td>
</tr>
<tr>
<td>Industrial Furnace:</td>
<td>False</td>
</tr>
<tr>
<td>Smelter Deferral:</td>
<td>False</td>
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<tr>
<td>Universal Waste:</td>
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</tr>
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<tr>
<td>LN Address 2:</td>
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<td>Tax Reg #:</td>
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<tr>
<td>Mail Name:</td>
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<tr>
<td>Mailing Address:</td>
<td>43530 SE North Bend Way</td>
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<tr>
<td>Mailing City,State,Zip:</td>
<td>North Bend, WA 98045</td>
</tr>
<tr>
<td>Legal Organization Name:</td>
<td>Brown, Steve B</td>
</tr>
<tr>
<td>Legal Organization Type:</td>
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<tr>
<td>Legal Address 2:</td>
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<tr>
<td>Legal City,State,Zip:</td>
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<tr>
<td>Legal Phone Number:</td>
<td>(425)888-2590</td>
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<td>01/01/2005</td>
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<tr>
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<td>Operator Organization Name:</td>
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<tr>
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<tr>
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<td>(425)888-2590</td>
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APPLIED PROFESSIONAL SVCS INC NORTH BEND (Continued)

Name: APPLIED PROFESSIONAL SVCS INC NORTH BEND
Address: 43530 SE NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 15772
EPA ID: WAH000051652
NAICS: 541360
State Waste Code Desc: Not reported
Federal Waste Code Desc: Not reported
Form Comm: No waste generated
Data Year: 2017
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 601684968
Business Type: Utility Locating
Mail Name: Not reported
Mailing Address: 43530 SE North Bend Way
Mailing City,State,Zip: North Bend, WA 98045
Legal Organization Name: Not reported
Legal Organization Type: Private
Legal Contact: Steve B Brown
Legal Address: 43530 SE North Bend Way
Legal Address 2: Not reported
Legal City,State,Zip: North Bend, WA 98045
Legal Phone Number: 425-888-2590
Legal Effective Date: 01/01/2005
Land Organization Name: Double BS LLC
### Applied Professional Services Inc, North Bend

**Site Information**
- **Site Type**: Private
- **Operator**: Not reported
- **Contact**: Steve Brown
- **Address**: 43530 SE North Bend Way, North Bend, WA 98045
- **Phone Number**: 425-888-2590

**Environmental Information**
- **RCRAInfo**: A national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

*Click this hyperlink* while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
APPLIED PROFESSIONAL SVCS INC NORTH BEND (Continued) 1022288038

ECHO:
Envid: 1022288038
Registry ID: 110069632712
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110069632712

BD236 APPLIED PROFESSIONAL SVCS INC NORTH BEND WA ALLSITES S118955262 N/A
Property 43530 SE NORTH BEND WAY NORTH BEND, WA 98045

Site 4 of 4 in cluster BD
Actual: 494 ft.
Focus Map: 18

ALLSITES:
Name: APPLIED PROFESSIONAL SVCS INC NORTH BEND
Facility Id: 15772

Interaction: 119688
Interaction 1: HWG
Interaction 2: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Applied Professional Svcs Inc North Bend
Program ID: WAH000051652
Date Interaction: 2016-09-29 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.481904071000002
Longitude: -121.758417138

Interaction: 124505
Interaction 1: A
Interaction 2: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Applied Professional Svcs Inc North Bend
Program ID: WAH000051652
Date Interaction: 2017-12-31 00:00:00
Date Interaction 3: Haz Waste Management Acti
Latitude: 47.481904071000002
Longitude: -121.758417138

BE237 NORTH BEND COTTAGES WA ALLSITES S118344725 N/A
Property NORTH BEND, WA 98045

Site 1 of 3 in cluster BE
Actual: 491 ft.
Focus Map: 18

ALLSITES:
Name: NORTH BEND COTTAGES
Facility Id: 15681

Interaction: 115769
Interaction 1: I
Interaction 2: CONSTSWP
Ecology Program: WATQUAL
Program Data: PARIS
NORTH BEND COTTAGES (Continued)

Facility Alt.: North Bend Cottages
Program ID: WAR303546
Date Interaction: 2015-11-02 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.480955721000001
Longitude: -121.76142810100001

Environmental Interest/Information System:
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (CIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
EnvId: 1018314215
Registry ID: 110067183559
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110067183559

239 DUMP SITE 444TH AVE SE NORTH BEND, WA 98045
WA ALLSITES S110037712 N/A

ALLSITES:
Name: DUMP SITE
Facility Id: 12463

Interaction: 80511
Interaction 1: A
Interaction 2: RSVP
Ecology Program: HAZWASTE
Program Data: RSVP
Facility Alt.: Dump Site
Program ID: Not reported
Date Interaction: 2008-10-01 00:00:00
Date Interaction 3: Revised Site Visit Progra
Latitude: 47.480865782000002
Longitude: -121.747785732
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<td></td>
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</tr>
</tbody>
</table>

**MAP FINDINGS**

### ALLSITES:
- **Name:** CEDAR FALLS SOUTH
- **Actual:** 475 ft.
- **Focus Map:** 18

#### Interaction:
- **Interaction 1:** A
- **Ecology Program:** WATQUAL
- **Program Data:** PARIS
- **Facility Alt.:** Cedar Falls South
- **Program ID:** WAR305260
- **Date Interaction:** 2017-03-03 00:00:00
- **Latitude:** 47.480654512999998
- **Longitude:** -121.77096569

### NPDES:
- **Name:** CEDAR FALLS SOUTH
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility Type:** Construction SW GP
- **Admin Region:** Headquarters
- **Date Issued:** 11/18/2015
- **Latitude:** Not reported
- **Longitude:** Not reported
- **Permit ID:** WAR305260
- **Permit Status:** Active
- **Permit Expiration Date:** 12/31/2020
- **Effective Date:** 04/17/2017
- **Days to Expiration:** -443

### ASBESTOS:
- **Name:** Not reported
- **Address:** 13306 427TH AVE SE
- **Facility Type:** Residential
- **Parent ID:** 0
- **Form ID:** 148537#1577Puget325547
- **Notice Date:** 07/25/2017
- **Start Date:** 07/31/2017
- **Completion Date:** 08/03/2017
- **Initial:** 1
- **Amended:** Not reported
- **On Hold:** Not reported
- **Off Hold:** Not reported
Emergency: Not reported
Site Hours Start: 8:00 a.m.
Site Hours End: 5:00 p.m.
Sunday: Not reported
Monday: 1
Tuesday: 1
Wednesday: 1
Thursday: 1
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: 4257576872
Job Site CAS: Jason Shearouse
Project Form Email: dan@pugetsoundabatement.com
Property Owner Name: Mike Day
Property Owner Agent: Not reported
Property Owner Company: Puget Sound Abatement LLC (ABCN00001577)
Property Owner Address: 13306 427th Ave SE
Property Owner City: North Bend
Property Owner State: WA
Property Owner Zip4: 98045
Property Owner Phone: 425-757-6873
Job Site Room: Not reported
Facility Age: 1975
Facility Size: 1980
Facility Remodel: Not reported
Facility Demo: 1
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 4633
Fireproofing: Not reported
Popcorn Ceiling: 1
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
Sq Ft Other Text: Drywall texture
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Muddled Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: 1
(Continued)

- **Glove Bag:** Not reported
- **Mini Enclosure:** Not reported
- **Critical Barriers:** 1
- **Wrap And Cut:** Not reported
- **Wet Methods:** 1
- **HEPA Vacuum:** 1
- **MANUALMETHODS:** 1
- **Other CM1:** Not reported
- **Other CM1 Text:** Not reported
- **Other CM2:** Not reported
- **Other CM2 Text:** Not reported
- **Half Mask APR:** Not reported
- **Full Face APR:** Not reported
- **PAPR:** Not reported
- **Type C Continuous:** Not reported
- **Type C Pressure:** 1
- **Other Resp Pro:** Not reported
- **Other Resp Pro Text:** Not reported

**Comments:** Need to abate on these days due to contractor's scheduling

- **Date Time Submitted:** 2017-07-25 13:46:14
- **Submitter IP Address:** 65.152.183.35
- **Region:** 2
- **UBI:** 603345715
- **Notice type:** Initial
- **Project Type:** Other Square Footage, Popcorn Ceiling
- **Supervisor:** Jason Shearouse
- **Supervisor Phone:** Not reported
- **Certificate Status:** ACTIVE

**Name:** Not reported
**Address:** 13306 427TH AVE SE
**City, State, Zip:** NORTHBEND, WA 98045
**Facility Type:** Residential
**Parent ID:** 0
**Form ID:** 154606#1643SEATT829876
**Notice Date:** 01/28/2018
**Start Date:** 01/29/2018
**Completion Date:** 01/31/2018
**Initial:** 1
**Amended:** Not reported
**On Hold:** Not reported
**Off Hold:** Not reported
**Emergency:** 1
**Site Hours Start:** 9:30
**Site Hours End:** 3:00
**Sunday:** Not reported
**Monday:** 1
**Tuesday:** 1
**Wednesday:** 1
**Thursday:** Not reported
**Friday:** Not reported
**Saturday:** Not reported
**Contractor ID:** Not reported
**Phone:** 206-557-0369
**Job Site CAS:** Juan Espinoza
**Project Form Email:** seattleasbestos@hotmail.com
**Property Owner Name:** John Day Homes LLC
Property Owner Agent: Not reported
Property Owner Company: SEATTLE ASBESTOS ENVIRONMENTAL (ABCN00001643)
Property Owner Address: P.O. box 2930
Property Owner City: Northbend
Property Owner State: WA
Property Owner Zip4: 98045
Property Owner Phone: 425-941-8019
Job Site Room: Not reported
Facility Age: 1975
Facility Size: 1650
Facility Remodel: Not reported
Facility Demo: 1
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: 3000
Quantity Sq Ft: 3000
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: 1
Sq Ft Other Text: drywall
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Muddled Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: Not reported
Neg Pres Enclosure: 1
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: 1
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUALMETHODS: 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: 1
PAPR: Not reported
Type C Continuous: 1
### FINDS:
- **ID Number:** 1025477031
- **Property:** NORTH BEND, WA 98045
- **FINDS:**
  - **Registry ID:** http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_facility=110070554524
- **EPA ID Number:** N/A

### Environmental Interest/Information System:
- **US National Pollutant Discharge Elimination System (NPDES) module of BE242 WA SPILLS S121065190**

### Site 3 of 3 in cluster BE
- **Target:** CEDAR FALLS WAY
- **Property:** NORTH BEND, WA
- **Actual:** 492 ft.
- **Focus Map:** 18

### BE242 WA SPILLS S122369746 N/A
- **Name:** CEDAR FALLS WAY
- **Address:** NORTH BEND, WA
- **City, State, Zip:** NORTH BEND, WA 99891
- **Facility ID:** 98891
- **Medium:** OILY WATER MIXTURE
- **Material Qty:** 0.5
- **Material Units:** Gals
- **Date Received:** Not reported
- **Contact Name:** Not reported
- **Incident Date:** 04/13/2018
- **Incident Category Type:** Oil Spill
- **Incident Category:** Not reported
- **Latitude:** 47.48061
- **Longitude:** -121.76099
- **Source Type:** Not reported
- **Source:** Not reported
- **Vessel Facility Name2:** Not reported
- **Recovered Quantity:** Not reported
- **Resp Party Contact:** Not reported
- **Cause:** Not reported
- **Cause Type:** Not reported
- **Resp Party Name:** Not reported

### TC5992688.2s Page 396
CEDAR RIVER PARTNERS LLC (Continued)

the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1025477031
Registry ID: 110070554524
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110070554524

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<th>13315 433RD CT SE</th>
<th>NORTH BEND, WA 98045</th>
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<tr>
<td>Site 1 of 3 in cluster BF</td>
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UIC: 1025477031

Name: MT SI VISTA (I 1) (D90697)
Address: 13315 433RD CT SE
City, State, Zip: NORTH BEND, WA 98045
Site Number: 19760
Owner Name: King County WLKD-DSS - Mt Si Vista (I-1) (D90697)
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.480291
Longitude: 122.76235
Well Name: 14130
Registration Type: Municipal Stormwater
Construction Date: 06/20/1979
Construction Type: Drywell
Depth: 2

<table>
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<th>BF245</th>
<th>13315 433RD CT SE KITCHEN</th>
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<tr>
<td>Site 2 of 3 in cluster BF</td>
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Actual: 489 ft.

Name: Not reported
Address: 13315 433RD CT SE KITCHEN
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 50724##1210Therm843830
Notice Date: 07/13/2011
Start Date: 07/26/2011
Completion Date: 07/26/2011
Initial: Not reported
Amended: Not reported
On Hold: Not reported
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<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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<td>S125590558</td>
</tr>
</tbody>
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(Continued)

| Off Hold: | Not reported |
| Emergency: | Not reported |
| Site Hours Start: | Not reported |
| Site Hours End: | Not reported |
| Sunday: | Not reported |
| Monday: | Not reported |
| Tuesday: | Not reported |
| Wednesday: | Not reported |
| Thursday: | Not reported |
| Friday: | Not reported |
| Saturday: | Not reported |
| Contractor ID: | Not reported |
| Phone: | Not reported |
| Job Site CAS: | Not reported |
| Project Form Email: | Not reported |
| Property Owner Name: | Not reported |
| Property Owner Agent: | Thermatech Northwest Inc (ABCN00001210) |
| Property Owner Company: | Not reported |
| Property Owner Address: | Not reported |
| Property Owner City: | Not reported |
| Property Owner State: | Not reported |
| Property Owner Zip4: | Not reported |
| Property Owner Phone: | Not reported |
| Job Site Room: | Not reported |
| Facility Age: | Not reported |
| Facility Size: | Not reported |
| Facility Remodel: | Not reported |
| Facility Demo: | Not reported |
| Facility Repair: | Not reported |
| Facility Maint: | Not reported |
| Removed: | Not reported |
| Encapsulated: | Not reported |
| Quantity Sq Ft: | Not reported |
| Fireproofing: | Not reported |
| Popcorn Ceiling: | Not reported |
| CAB: | Not reported |
| Sheet Vinyl: | Not reported |
| Asbestos Paper: | Not reported |
| Boiler Insulation: | Not reported |
| Duct Paper: | Not reported |
| VAT: | Not reported |
| Roofing: | Not reported |
| Sq Ft Other: | Not reported |
| Sq Ft Other Text: | Not reported |
| Quantity Lin Ft: | Not reported |
| Mag Pipe Insulation: | Not reported |
| Air Cell Pipe Insulation: | Not reported |
| Ducting Insulation: | Not reported |
| Cement Asbestos Pipe: | Not reported |
| Muddled Pipe Insulation: | Not reported |
| Duct Tape: | Not reported |
| Lin Ft Other1: | Not reported |
| Lin Ft Other1 Text: | Not reported |
| Lin Ft Other2: | Not reported |
| Lin Ft Other2 Text: | Not reported |
| Indoors: | Not reported |
| Outdoors: | Not reported |
(Continued)

Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Sheet Vinyl
Supervisor: David Agosto 
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 13315 433RD CT SE KITCHEN
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 51159#1210Therm737235
Notice Date: 07/26/2011
Start Date: 07/26/2011
Completion Date: 07/26/2011
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Thermatech Northwest Inc (ABCN090001210)
Property Owner Company: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
### 1. BPA NORTH BEND RADIO STATION

**Target:** END OF RATTLESNAKE MT RD  
**Property:** SNOQUALMIE, WA 98065  
**Actual:** 494 ft.  
**Focus Map:** 18

- **Interaction:** TIER2  
- **Ecology Program:** HAZWASTE  
- **Program Data:** EPCRA  
- **Facility Alt.:** BPA NORTH BEND RADIO STATION  
- **Program ID:** CRK000077180  
- **Date Interaction:** 2011-02-10 00:00:00  
- **Date Interaction 3:** Emergency/Haz Chem Rpt TI

### 2. MT SI VISTA (I 1) (D90697)

**Target:** 13315 433RD CT SE  
**Property:** NORTH BEND, WA 98045  
**Actual:** 489 ft.  
**Focus Map:** 18

- **UIC:** MT SI VISTA (I 1) (D90697)  
- **Name:** 13315 433RD CT SE  
- **Address:** NORTH BEND, WA 98045  
- **City, State, Zip:**  
- **Site Number:** 19760  
- **Owner Name:** King County WLRD-DSS - Mt Si Vista (I-1) (D90697)  
- **Well Status:** Active  
- **EPA Well Type:** 5H1 - Stormwater  
- **Latitude:** 47.480293  
- **Longitude:** 122.7619  
- **Well Name:** 14130-2  
- **Registration Type:** Municipal Stormwater  
- **Construction Date:** 06/20/1979  
- **Construction Type:** Drywell  
- **Depth:** 2

### (Continued)

- **Type C Continuous:** Not reported  
- **Type C Pressure:** Not reported  
- **Other Resp Pro:** Not reported  
- **Other Resp Pro Text:** Not reported  
- **Comments:** Not reported  
- **Date Time Submitted:** Not reported  
- **Submitter IP Address:** Not reported  
- **Region:** 2  
- **UBI:** 601725020  
- **Notice type:** Initial  
- **Project Type:** Sheet Vinyl  
- **Supervisor:** David Agosto ()  
- **Supervisor Phone:** Not reported  
- **Certificate Status:** ACTIVE

### Summary

**Location:** BPA NORTH BEND RADIO STATION  
**Location Type:** Facility  
**Ownership Type:** Private  
**Well Status:** Active  
**EPA Well Type:** 5H1 - Stormwater  
**Latitude:** 47.480293  
**Longitude:** 122.7619  
**Well Name:** 14130-2  
**Registration Type:** Municipal Stormwater  
**Construction Date:** 06/20/1979  
**Construction Type:** Drywell  
**Depth:** 2
BPA NORTH BEND RADIO STATION (Continued)

Lat: 47.479715325999997
Lon: -121.75998722999999

BG248 PSE RATTLESNAKE MT MIC
Target 1441 389TH AVE SE
Property NORTH BEND, WA 98045

Site 2 of 4 in cluster BG

Actual: 494 ft.
Focus Map: 18

Inter: 47886
Int 1: A
Int 2: TIER2

Ecol Prog: HAZWASTE
Prog Data: EPCRA
Fac Alt: Not reported
Prog ID: CRK000010130

Date Int 1: 1988-01-01 00:00:00
Date Int 2: Emergency/Haz Chem Rpt T
Lat: 47.479715325999997
Lon: -121.75998722999999

FINDS:
Reg ID: 110015464013
Fac URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015464013

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

BG249 AT&T WA0330 RTGWAQ3550
Target RATTLESNAKE LEDGE RR
Property NORTH BEND, WA 98045

Site 3 of 4 in cluster BG

Actual: 494 ft.
Focus Map: 18

Inter: 38968
Int 1: I
Int 2: TIER2

Ecol Prog: HAZWASTE
AT&T WA0330 RTGWAQ3550 (Continued)

Program Data: EPCRA
Facility Alt.: Not reported
Program ID: CRK000022620
Date Interaction: 1989-01-01 00:00:00
Date Interaction 3: Emergency/Haz Chem Rpt Ti
Latitude: 47.479715325999997
Longitude: -121.75998722999999

FINDS:
Registry ID: 110015490182
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015490182

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

BG250 AT&T NORTHBEND WA0005 53000 SE FROUSE RIDGE RD NORTH BEND, WA 98045

Site 4 of 4 in cluster BG

Actual: 494 ft.
Focus Map: 18

Interaction: 45461
Interaction 1: A
Interaction 2: TIER2
Ecology Program: HAZWASTE
Program Data: EPCRA
Facility Alt.: Not reported
Program ID: CRK000022620
Date Interaction: 1991-01-01 00:00:00
Date Interaction 3: Emergency/Haz Chem Rpt Ti
Latitude: 47.479715325999997
Longitude: -121.75998722999999

FINDS:
Registry ID: 110015471158
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015471158

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
AT&T NORTHBEND WAS240 GRCAWAR0010 (Continued)

Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

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251

TARGET:

Property: TANNER ROAD SUBDIVISION

ALLSITES:

Name: TANNER ROAD SUBDIVISION

Facility Id: 7047

Interaction: 123655
Interaction 1: A
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: Tanner Road Subdivision
Program ID: WAR305910
Date Interaction: 2017-09-01 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.479499408999999
Longitude: -121.73644065800001

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252

TARGET:

Property: KING COUNTY DEPT OF TRANSPORTATION - 4430 337 PL S

UIC:

Name: KING COUNTY DEPT OF TRANSPORTATION - 4430 337 PL S

Address: 4430 337 PL SE
City, State, Zip: RENTON, WA
Site Number: 30271
Owner Name: King County Dept of Transportation
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.47944
Longitude: 121.76364
Well Name: 20769
Registration Type: Municipal Stormwater
Construction Date: 10/01/1992
Construction Type: Infiltration trench with perforated pipe
Depth: 3
Site 1 of 4 in cluster BH

Actual: 497 ft.

Focus Map: 18

BH253 CHINOOK LUMBER
Target 436TH AVE SE @ CEDAR FALLS WAY
Property NORTH BEND, WA 98045

UIC: CHINOOK LUMBER
Name: CHINOOK LUMBER
Address: 436TH AVE SE @ CEDAR FALLS WAY
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33530
Owner Name: Chinook Lumber
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.479233
Longitude: 121.75706
Well Name: IT-3
Registration Type: Industrial or Commercial Facilities
Construction Date: 06/01/2017
Construction Type: Infiltration trench with perforated pipe
Depth: 5

Site 2 of 4 in cluster BH

Actual: 497 ft.

Focus Map: 18

BH254 CHINOOK LUMBER
Target 436TH AVE SE @ CEDAR FALLS WAY
Property NORTH BEND, WA 98045

UIC: CHINOOK LUMBER
Name: CHINOOK LUMBER
Address: 436TH AVE SE @ CEDAR FALLS WAY
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33530
Owner Name: Chinook Lumber
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.479233
Longitude: 121.75706
Well Name: IT-4
Registration Type: Industrial or Commercial Facilities
Construction Date: 06/01/2017
Construction Type: Infiltration trench with perforated pipe
Depth: 5

Site 3 of 4 in cluster BH

Actual: 497 ft.

Focus Map: 18

BH255 CHINOOK LUMBER
Target 436TH AVE SE @ CEDAR FALLS WAY
Property NORTH BEND, WA 98045

UIC: CHINOOK LUMBER
Name: CHINOOK LUMBER
Address: 436TH AVE SE @ CEDAR FALLS WAY
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33530
Owner Name: Chinook Lumber
Well Status: Active
EPA Well Type: 5H1 - Stormwater

TC5992688.2s Page 405
CHINOOK LUMBER (Continued)

Latitude: 47.478954
Longitude: 121.75683
Well Name: IT-2
Registration Type: Industrial or Commercial Facilities
Construction Date: 06/01/2017
Construction Type: Infiltration trench with perforated pipe
Depth: 11

BH256

CHINOOK LUMBER

Target 436TH AVE SE @ CEDAR FALLS WAY
Property NORTH BEND, WA 98045

Site 4 of 4 in cluster BH

Actual: 497 ft.
Focus Map: 18

UIC:
Name: CHINOOK LUMBER
Address: 436TH AVE SE @ CEDAR FALLS WAY
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33530
Owner Name: Chinook Lumber
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.478926
Longitude: 121.75773
Well Name: IT-1
Registration Type: Industrial or Commercial Facilities
Construction Date: 06/01/2017
Construction Type: Infiltration trench with perforated pipe
Depth: 10

SUN RISE VIEW

Target 42621 SE 134TH PL
Property NORTH BEND, WA 98045

Site 1 of 3 in cluster BI

Actual: 480 ft.
Focus Map: 18

FINDS:
Registry ID: 110070501604
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070501604

Environmental Interest/Information System:
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1024707067
Registry ID: 110070501604
SUN RISE VIEW (Continued)

DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110070501604

BI258
Target 42621 134TH PL
Property NORTH BEND, WA

Site 2 of 3 in cluster BI

Actual: 480 ft.
Focus Map: 18

ASBESTOS:
Name: Not reported
Address: 42621 134TH PL
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 134981#395176398
Notice Date: 12/10/2018
Start Date: 12/20/2018
Completion Date: 12/21/2018
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: AFFORDABLE ENVIRONMENTAL, INC (MOUNTLAKE TERRACE) (ABCN00001427)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 602577245
Notice type: Initial
Project Type: Sheet Vinyl
Supervisor: Anthony Chase (ABAS00008156) ACTIVE
Supervisor Phone: Not reported
Certificate Status: ACTIVE
B259

SUN RISE VIEW

42621 SE 134TH PL

NORTH BEND, WA 98045

Site 3 of 3 in cluster BI

Actual: 480 ft.

Focus Map: 18

ALLSITES:

Name: SUN RISE VIEW

Facility Id: 72303

NPDES:

Name: SUN RISE VIEW

Address: 42621 SE 134TH PL

City,State,Zip: NORTH BEND, WA 98045

Facility Status: Not reported

Facility Type: Construction SW GP

Site Number: 19761

 Permit ID: WAR307403

 Permit Version: Not reported

 Permit Status: Active

 Permit SubStatus: Not reported

 Ecology Contact: Not reported

 WRIA: Not reported

 Permit Expiration Date: 12/31/2020

 Effective Date: 01/09/2019

 Days to Expiration: -443

260

MT SI VISTA (I-2) (D90698)

13500 434RD AVE SE

NORTH BEND, WA 98045

UIC:

Name: MT SI VISTA (I-2) (D90698)

Address: 13500 434RD AVE SE

City,State,Zip: NORTH BEND, WA 98045

Site Number: 19761

 Owner Name: King County WLRD-DSS - Mt Si Vista (I-2) (D90698)

 Well Status: Active

 EPA Well Type: 5H1 - Stormwater

 Latitude: 47.478889

 Longitude: 121.759722

 Well Name: 14131

 Registration Type: Municipal Stormwater

 Construction Date: 06/20/1979

 Construction Type: Drywell

 Depth: 2
261 CHINOOK LUMBER
Target 436TH AVE SE CEDAR FALLS WAY
Property NORTH BEND, WA  98045

ALLSITES:
Name: CHINOOK LUMBER
Facility Id: 17491

Focus Map: 18
Interaction: 122195
Interaction 1: A
Interaction 2: UIC
Ecology Program: WATQUAL
Program Data: UIC
Facility Alt.: Chinook Lumber
Program ID: 33530
Date Interaction: 2017-06-01 00:00:00
Date Interaction 3: Underground Injection Con
Latitude: 47.478601980999997
Longitude: -121.758258539

262 WA ASBESTOS S125590643
Target 13513 434TH AVE SE, BATHROOM
Property NORTH BEND, WA

ASBESTOS:
Name: Not reported
Address: 13513 434TH AVE SE, BATHROOM
City,State,Zip: NORTH BEND, WA

Focus Map: 18
Form ID: 40446##1487Leada414145
Notice Date: 07/29/2010
Start Date: 07/28/2010
Completion Date: 07/28/2010
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: Lead and Asbestos Removal Inc (ABCN000001487)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
| Property Owner Phone:                  | Not reported |
| Job Site Room:                        | Not reported |
| Facility Age:                         | Not reported |
| Facility Size:                        | Not reported |
| Facility Remodel:                     | Not reported |
| Facility Demo:                        | Not reported |
| Facility Repair:                      | Not reported |
| Facility Maint.                       | Not reported |
| Removed:                             | Not reported |
| Encapsulated:                        | Not reported |
| Quantity Sq Ft:                      | Not reported |
| Fireproofing:                         | Not reported |
| Popcorn Ceiling:                     | Not reported |
| CAB:                                  | Not reported |
| Sheet Vinyl:                         | Not reported |
| Asbestos Paper:                      | Not reported |
| Boiler Insulation:                   | Not reported |
| Duct Paper:                          | Not reported |
| VAT:                                  | Not reported |
| Roofing:                             | Not reported |
| Sq Ft Other:                         | Not reported |
| Sq Ft Other Text:                    | Not reported |
| Quantity Lin Ft:                     | Not reported |
| Mag Pipe Insulation:                 | Not reported |
| Air Cell Pipe Insulation:            | Not reported |
| Ducting Insulation:                  | Not reported |
| Cement Asbestos Pipe:                | Not reported |
| Muddled Pipe Insulation:             | Not reported |
| Duct Tape:                           | Not reported |
| Lin Ft Other1:                       | Not reported |
| Lin Ft Other1 Text:                  | Not reported |
| Lin Ft Other2:                       | Not reported |
| Lin Ft Other2 Text:                  | Not reported |
| Indoors:                             | Not reported |
| Outdoors:                            | Not reported |
| Neg Pres Enclosure:                  | Not reported |
| Glove Bag:                           | Not reported |
| Mini Enclosure:                      | Not reported |
| Critical Barriers:                   | Not reported |
| Wrap And Cut:                        | Not reported |
| Wet Methods:                         | Not reported |
| HEPA Vacuum:                         | Not reported |
| MANUALMETHODS                        | Not reported |
| Other CM1:                           | Not reported |
| Other CM1 Text:                      | Not reported |
| Other CM2:                           | Not reported |
| Other CM2 Text:                      | Not reported |
| Half Mask APR:                       | Not reported |
| Full Face APR:                       | Not reported |
| PAPR:                                | Not reported |
| Type C Continuous:                   | Not reported |
| Type C Pressure:                     | Not reported |
| Other Resp Pro:                      | Not reported |
| Other Resp Pro Text:                 | Not reported |
| Comments:                            | Not reported |
| Date Time Submitted:                 | Not reported |
| Submitter IP Address:                | Not reported |

**MAP FINDINGS**

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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<td>S125590643</td>
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</tbody>
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**NOTES**
(Continued)

Region: 2
UBI: 602878044
Notice type: Initial
Project Type: Vinyl Asbestos Tile
Supervisor: Arturo Vargas ()
Supervisor Phone: Not reported
Certificate Status: EXPIRED

Name: Not reported
Address: 13513 434TH AVE SE, BATHROOM
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 40409##1487Leada304909
Notice Date: 07/27/2010
Start Date: 07/28/2010
Completion Date: 07/28/2010
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: Lead and Asbestos Removal Inc (ABCN00001487)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Not reported
Asbestos Paper:
Boiler Insulation:
Duct Paper:
VAT:
Roofing:
Sq Ft Other:
Sq Ft Other Text:
Quantity Lin Ft:
Mag Pipe Insulation:
Air Cell Pipe Insulation:
Ducting Insulation:
Cement Asbestos Pipe:
Mudded Pipe Insulation:
Duct Tape:
Lin Ft Other1:
Lin Ft Other1 Text:
Lin Ft Other2:
Lin Ft Other2 Text:
Indoors:
Outdoors:
Neg Pres Enclosure:
Glove Bag:
Mini Enclosure:
Critical Barriers:
Wrap And Cut:
Wet Methods:
HEPA Vacuum:
MANUALMETHODS:
Other CM1:
Other CM1 Text:
Other CM2:
Other CM2 Text:
Half Mask APR:
Full Face APR:
PAPR:
Type C Continuous:
Type C Pressure:
Other Resp Pro:
Other Resp Pro Text:
Comments:
Date Time Submitted:
Submitter IP Address:
Region:
UBI:
Notice type:
Project Type:
Supervisor:
Supervisor Phone:
Certificate Status:

S125590643

(Continued)
Site 1 of 2 in cluster BJ

Actual: 505 ft.

MINES VIOLATIONS:
Name: 3 LAKES QUARRY
Address: 43909 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility ID: Not reported

MINES VIOLATIONS:
Violation Number: 6344594
Mine ID: 4503566
Contractor ID: Not reported
Date Issued: 06/28/2004
Action Type: 104(a)
Type of Issue: Citation
S and S: N
Term Date: 06/28/2004
Title 30 Code of Federal Regulations: 56.1000

Site 2 of 2 in cluster BJ

Actual: 505 ft.

MINES VIOLATIONS:
Name: 3 LAKES QUARRY
Address: 43909 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility ID: Not reported

MINES VIOLATIONS:
Violation Number: 6344594
Mine ID: 4503566
Contractor ID: Not reported
Date Issued: 06/28/2004
Action Type: 104(a)
Type of Issue: Citation
S and S: N
Term Date: 06/28/2004
Title 30 Code of Federal Regulations: 56.1000
3 LAKES QUARRY (Continued)

Proposed Penalty: 60.00
Assessment Amount: 60.00
Paid Penalty Amount: 60.00
Assessment Case Status: Proposed
Assessment Status: Closed
Year: 2004
Address Type: MineLocation
PO Box: Not reported
Address: 43909 SE TANNER RD
City: NORTH BEND
State: WA
Operator: GDN Enterprises, Inc
Zip: 98045
Mine Controller Name: Geoff D Nestor
Name: 3 LAKES QUARRY
Ownership Date: 06/24/2004
Mine Status: Abandoned
Status Date: 06/04/2006
Primary Site Description: Crushed, Broken Stone NEC
Mine Type: Surface
State 2: WA
County: KING

Violation Number: 6355912
Mine ID: 4503566
Contractor ID: Not reported
Date Issued: 01/10/2005
Action Type: 104(a)
Type of Issue: Citation
S and S: N
Term Date: 01/10/2005
Title 30 Code of Federal Regulations: 50.30(a)

Proposed Penalty: 60.00
Assessment Amount: 60.00
Paid Penalty Amount: 0.00
Assessment Case Status: Proposed
Assessment Status: Received
Year: 2005
Address Type: MineLocation
PO Box: Not reported
Address: 43909 SE TANNER RD
City: NORTH BEND
State: WA
Operator: GDN Enterprises, Inc
Zip: 98045
Mine Controller Name: Geoff D Nestor
Name: 3 LAKES QUARRY
Ownership Date: 06/24/2004
Mine Status: Abandoned
Status Date: 06/04/2006
Primary Site Description: Crushed, Broken Stone NEC
Mine Type: Surface
State 2: WA
County: KING

Violation Number: 6363402
Mine ID: 4503566
3 LAKES QUARRY (Continued) 1024926209

Contractor ID: Not reported
Date Issued: 06/28/2004
Action Type: 104(a)
Type of Issue: Citation
S and S: N
Term Date: 07/20/2004
Title 30 Code of Federal Regulations: 46.3(a)
Proposed Penalty: 60.00
Assessment Amount: 60.00
Paid Penalty Amount: 60.00
Assessment Case Status: Proposed
Assessment Status: Closed
Year: 2004
Address Type: MineLocation
PO Box: Not reported
Address: 43909 SE TANNER RD
City: NORTH BEND
State: WA
Operator: GDN Enterprises, Inc
Zip: 98045
Mine Controller Name: Geoff D Nestor
Name: 3 LAKES QUARRY
Ownership Date: 06/24/2004
Abandoned Mine Status: Abandoned
Status Date: 06/04/2006
Primary Site Description: Crushed, Broken Stone NEC
Mine Type: Surface
State 2: WA
County: KING

Violation Number: 6363425
Mine ID: 4503566
Contractor ID: Not reported
Date Issued: 09/08/2004
Action Type: 104(a)
Type of Issue: Citation
S and S: N
Term Date: 12/13/2004
Title 30 Code of Federal Regulations: 56.18010
Proposed Penalty: 60.00
Assessment Amount: 60.00
Paid Penalty Amount: 60.00
Assessment Case Status: Proposed
Assessment Status: Closed
Year: 2004
Address Type: MineLocation
PO Box: Not reported
Address: 43909 SE TANNER RD
City: NORTH BEND
State: WA
Operator: GDN Enterprises, Inc
Zip: 98045
Mine Controller Name: Geoff D Nestor
Name: 3 LAKES QUARRY
Ownership Date: 06/24/2004
Mine Status: Abandoned
Status Date: 06/04/2006
3 LAKES QUARRY (Continued)  

Primary Site Description: Crushed, Broken Stone NEC  
Mine Type: Surface  
State 2: WA  
County: KING  

Violation Number: 6363426  
Mine ID: 4503566  
Contractor ID: Not reported  
Date Issued: 09/08/2004  
Action Type: 104(a)  
Type of Issue: Citation  
S and S: N  
Term Date: 09/08/2004  
Title 30 Code of Federal Regulations: 50.10  
Proposed Penalty: 60.00  
Assessment Amount: 60.00  
Paid Penalty Amount: 60.00  
Assessment Case Status: Proposed  
Assessment Status: Closed  
Year: 2004  
Address Type: MineLocation  
PO Box: Not reported  
Address: 43909 SE TANNER RD  
City: NORTH BEND  
State: WA  
Operator: GDN Enterprises, Inc  
Zip: 98045  
Mine Controller Name: Geoff D Nestor  
Name: 3 LAKES QUARRY  
Ownership Date: 06/24/2004  
Mine Status: Abandoned  
Status Date: 06/04/2006  
Primary Site Description: Crushed, Broken Stone NEC  
Mine Type: Surface  
State 2: WA  
County: KING  

265  
CEDAR RIVER PARTNERS LLC  
44124 SE NORTH BEND WAY  
NORTH BEND, WA  98045  

ALLSITES:  
Name: CEDAR RIVER PARTNERS LLC  
Facility id: 69013  

Actual: 506 ft.  
Focus Map: 18  

ASBESTOS:  
Name: Not reported  
Address: 44124 SE NORTH BEND WAY  
City,State,Zip: NORTH BEND, WA  
Facility Type: Not reported  
Parent ID: Not reported  
Form ID: 145712#339600036  
Notice Date: 07/30/2019  
Start Date: 07/22/2019  
Completion Date: 08/06/2019  
Initial: Not reported
CEDAR RIVER PARTNERS LLC (Continued)

Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: WRECKING BALL DEMOLITION, LLC (EVERETT) (ABCN00001436)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
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VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
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Mag Pipe Insulation: Not reported
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Lin Ft Other1: Not reported
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Lin Ft Other2 Text: Not reported
CEDAR RIVER PARTNERS LLC (Continued)

Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601878379
Notice type: Initial
Project Type: Cement Asbestos Board (CAB), Popcorn Ceiling
Supervisor: Will McIntosh (ABAS00034089) ACTIVE
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 44124 SE NORTH BEND WAY
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 145712#339600036
Notice Date: 07/12/2019
Start Date: 07/22/2019
Completion Date: 07/26/2019
Initial: Not reported
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Site Hours Start: Not reported
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Sunday: Not reported
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Contractor ID: Not reported
Phone: Not reported
CEDAR RIVER PARTNERS LLC (Continued)

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CEDAR RIVER PARTNERS LLC (Continued)

Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601878379
Notice type: Initial
Project Type: Cement Asbestos Board (CAB), Popcorn Ceiling
Supervisor: Cody Chestnut (ABAS00028791) ACTIVE
Supervisor Phone: Not reported
Certificate Status: ACTIVE

NPDES:
Name: CEDAR RIVER PARTNERS, LLC
Address: 44124 SE NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Status: Not reported
Facility Type: Construction SW GP
Admin Region: Headquarters
Date Issued: 11/18/2015
Latitude: Not reported
Longitude: Not reported
Permit ID: WAR307958
Permit Version: Not reported
Permit Status: Active
Permit SubStatus: Not reported
Ecology Contact: Not reported
WRIA: Not reported
Permit Expiration Date: 12/31/2020
Effective Date: 05/27/2019
Days to Expiration: -443

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MAP FINDINGS

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266
MT SI VISTA (I 3) (D90699)
Target
13532 433RD PLACE SE
Property
NORTH BEND, WA 98045

UIC:

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<th>491 ft.</th>
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Focus Map: 18

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<td>Address:</td>
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<td>Site Number:</td>
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<td>Owner Name:</td>
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BK267  ALLIED BLDG SUPPLIES  WA SPILLS  S107154187
Target  43516 SE 136TH ST  N/A
Property  NORTH BEND, WA

Site 1 of 8 in cluster BK

Actual:  497 ft.
Focus Map:  18

| Interaction | 124864 |
| Interaction 1 | A |
| Interaction 2 | UIC |
| Ecology Program | WATQUAL |
| Program Data | UIC |
| Facility Alt. | River Run |
| Program ID | 33837 |
| Date Interaction | 2018-05-01 00:00:00 |
| Date Interaction 3 | Underground Injection Con |
| Latitude | 47.477373747000000 |
| Longitude | -121.75884481600001 |

Name:  ALLIED BLDG SUPPLIES
Facility Id:  33837

BK268  RIVER RUN  WA ALLSITES  S121442368
Target  43600 SE 136TH STREET  WA NPDES  N/A
Property  NORTH BEND, WA  98045

Site 2 of 8 in cluster BK

Actual:  497 ft.
Focus Map:  18

| Interaction | 124864 |
| Interaction 1 | A |
| Interaction 2 | UIC |
| Ecology Program | WATQUAL |
| Program Data | UIC |
| Facility Alt. | River Run |
| Program ID | 33837 |
| Date Interaction | 2018-05-01 00:00:00 |
| Date Interaction 3 | Underground Injection Con |
| Latitude | 47.477373747000000 |
| Longitude | -121.75884481600001 |

Name:  RIVER RUN 2
Facility Id:  77447

NPDES:
Name:  RIVER RUN 2
RIVER RUN (Continued)  

Address: 43600 SE 136TH ST  
City,State,Zip: NORTH BEND, WA 98045  
Facility Status: Not reported  
Facility Type: Construction SW GP  
Admin Region: Headquarters  
Date Issued: 11/18/2015  
Latitude: Not reported  
Longitude: Not reported  
Permit ID: WAR306832  
Permit Version: Not reported  
Permit Status: Active  
Permit SubStatus: Not reported  
Ecology Contact: Not reported  
WRIA: Not reported  
Permit Expiration Date: 12/31/2020  
Effective Date: 07/31/2018  
Days to Expiration: -443  

Site 3 of 8 in cluster BK  

Actual: 497 ft.  
Focus Map: 18  
UIC: RIVER RUN  
Name: RIVER RUN  
Address: 43600 SE 136TH STREET  
City,State,Zip: NORTH BEND, WA 98045  
Site Number: 33837  
Owner Name: North Bend Associates, LLC  
Well Status: Active  
EPA Well Type: 5H1 - Stormwater  
Latitude: 47.478249  
Longitude: 121.75672  
Well Name: Basin 2  
Registration Type: Non-Municipal Stormwater  
Construction Date: 05/01/2018  
Construction Type: Infiltration trench with perforated pipe  
Depth: 5  

Site 4 of 8 in cluster BK  

Actual: 497 ft.  
Focus Map: 18  
UIC: RIVER RUN  
Name: RIVER RUN  
Address: 43600 SE 136TH STREET  
City,State,Zip: NORTH BEND, WA 98045  
Site Number: 33837  
Owner Name: North Bend Associates, LLC  
Well Status: Active  
EPA Well Type: 5H1 - Stormwater  
Latitude: 47.478132  
Longitude: 121.7568
RIVER RUN (Continued)

Well Name: Basin 4
Registration Type: Non-Municipal Stormwater
Construction Date: 05/01/2018
Construction Type: Infiltration trench with perforated pipe
Depth: 6

BK271  RIVER RUN
Target  43600 SE 136TH STREET
Property NORTH BEND, WA  98045

Site 5 of 8 in cluster BK

Actual: UIC:
497 ft.

Focus Map: Name: RIVER RUN
18 Address: 43600 SE 136TH STREET
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33837
Owner Name: North Bend Associates, LLC
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.478216
Longitude: 121.75803
Well Name: Basin 1
Registration Type: Non-Municipal Stormwater
Construction Date: 05/01/2018
Construction Type: Infiltration trench with perforated pipe
Depth: 6

BK272  RIVER RUN
Target  43600 SE 136TH STREET
Property NORTH BEND, WA  98045

Site 6 of 8 in cluster BK

Actual: UIC:
497 ft.

Focus Map: Name: RIVER RUN
18 Address: 43600 SE 136TH STREET
City,State,Zip: NORTH BEND, WA 98045
Site Number: 33837
Owner Name: North Bend Associates, LLC
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.477852
Longitude: 121.75674
Well Name: Basin 6
Registration Type: Non-Municipal Stormwater
Construction Date: 05/01/2018
Construction Type: Infiltration trench with perforated pipe
Depth: 5
Site 7 of 8 in cluster BK

UIC: RIVER RUN
Name: 43600 SE 136TH STREET
Address: NORTH BEND, WA 98045
City, State, Zip: 33837
Site Number:
Owner Name: North Bend Associates, LLC
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.477923
Longitude: 121.75764
Well Name: Basin 7
Registration Type: Non-Municipal Stormwater
Construction Date: 05/01/2018
Construction Type: Infiltration trench with perforated pipe
Depth:

Name: RIVER RUN
Address: 43600 SE 136TH STREET
City, State, Zip: NORTH BEND, WA 98045
Sitename: North Bend Associates, LLC
Well Status: Proposed
EPA Well Type: 5H1 - Stormwater
Latitude: 47.477671
Longitude: 121.75849
Well Name: RAB Basin 1
Registration Type: Municipal Stormwater
Construction Date: 09/01/2019
Construction Type: Infiltration trench with perforated pipe
Depth:

Site 8 of 8 in cluster BK

UIC: RIVER RUN
Name: 43600 SE 136TH STREET
Address: NORTH BEND, WA 98045
City, State, Zip: 34073
Site Number:
Owner Name: City of North Bend
Well Status: Proposed
EPA Well Type: 5H1 - Stormwater
Latitude: 47.47803
Longitude: 121.75616
Well Name: Basin 3
Registration Type: Non-Municipal Stormwater
Construction Date: 05/01/2018
Construction Type: Infiltration trench with perforated pipe
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PUGET SOUND POWER & LIGHT CO (Continued)  

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Site 5 of 6 in cluster BL

Actual: 507 ft.

Focus Map: 18

LUST:
Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 65553121
Lust Status Type: LUST - NFA
Cleanup Site ID: 10054
Cleanup Unit Type: Not reported
Process Type: Not reported
Cleanup Unit Name: PUGET SOUND POWER & LIGHT CO,PUGET SOUND POWER & LIGHT CO NORTH BEND
Response Section: Northwest
Release Date: 05/05/1995
Lust Date: 10/03/2011
Region: Northwest
Lust ID: 3859
UST ID: 9173
Contaminant Name: Benzene
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.476044 / -121.74933

Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 65553121
Lust Status Type: LUST - NFA
Cleanup Site ID: 10054
Cleanup Unit Type: Not reported
Process Type: Not reported
Cleanup Unit Name: PUGET SOUND POWER & LIGHT CO,PUGET SOUND POWER & LIGHT CO NORTH BEND
Response Section: Northwest
Release Date: 05/05/1995
Lust Date: 10/03/2011
Region: Northwest
Lust ID: 3859
UST ID: 9173
**PUGET SOUND POWER & LIGHT CO (Continued)**

Contaminant Name: Petroleum-Other
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.476044 / -121.74933

Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 65553121
Lust Status Type: LUST - NFA
Cleanup Site ID: 10054
Cleanup Unit Type: Not reported
Process Type: Not reported
Cleanup Unit Name: PUGET SOUND POWER & LIGHT CO, PUGET SOUND POWER & LIGHT CO NORTH BEND
Response Section: Northwest
Release Date: 05/05/1995
Lust Date: 10/03/2011
Region: Northwest
Lust ID: 3859
UST ID: 9173

Contaminant Name: Metals - Other
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.476044 / -121.74933

Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 65553121
Lust Status Type: LUST - NFA
Cleanup Site ID: 10054
Cleanup Unit Type: Not reported
Process Type: Not reported
Cleanup Unit Name: PUGET SOUND POWER & LIGHT CO, PUGET SOUND POWER & LIGHT CO NORTH BEND
Response Section: Northwest
Release Date: 05/05/1995
Lust Date: 10/03/2011
Region: Northwest
Lust ID: 3859
UST ID: 9173

Contaminant Name: Petroleum-Diesel
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.476044 / -121.74933
PUGET SOUND POWER & LIGHT CO (Continued) U000923013

Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 65553121
Lust Status Type: LUST - NFA
Cleanup Site ID: 10054
Cleanup Unit Type: Not reported
Process Type: Not reported
Cleanup Unit Name: PUGET SOUND POWER & LIGHT CO, PUGET SOUND POWER & LIGHT CO NORTH BEND
Response Section: Northwest
Release Date: 05/05/1995
Lust Date: 10/03/2011
Region: Northwest
Lust ID: 3859
UST ID: 9173
Contaminant Name: Petroleum-Gasoline
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.476044 / -121.74933

UST:
Name: PUGET SOUND POWER & LIGHT CO
Address: 44429 SE TANNER RD
City: NORTH BEND
Zip: 98045
Facility ID: 65553121
Site Id: 9173
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.476044
Decimal Longitude: -121.74933

Tank Name: 1
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 07/01/1978
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: Automatic Shutoff (fill pipe)
Tank Material: Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: None
Tank Manifold: Not reported
Tank Release Detection: Statistical Inventory Reconciliation
Tank SFC Type: Not reported
Pipe Material: Steel
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Safe Suction (No Leak Detection)
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**PUGET SOUND POWER & LIGHT CO (Continued)**

**Pipe Second Release Detection:** Not reported
**Pipe Corrosion Protection:** None
**Pipe Pumping System:** Gravity Delivery System (No Pump)
**Responsible Unit:** Northwest
**Dispenser/Pump SFC Type:** Not reported

**Name:** PUGET SOUND POWER & LIGHT CO
**Address:** 44429 SE TANNER RD
**City:** NORTH BEND
**Zip:** 98045

| Tank Name: | 2 |
| Tag Number: | Not reported |
| Tank Status: | Removed |
| Tank Status Date: | 08/06/1996 |
| Tank Install Date: | 07/01/1978 |
| Tank Closure Date: | Not reported |
| Capacity Range: | Not reported |
| Tank Permit Expiration Date: | Not reported |
| Tank Upgrade Date: | Not reported |
| Tank Spill Prevention: | None |
| Tank Overfill Prevention: | Automatic Shutoff (fill pipe) |
| Tank Material: | Steel |
| Tank Construction: | Single Wall Tank |
| Tank Tightness Test: | Not reported |
| Tank Corrosion Protection: | None |
| Tank Manifold: | Not reported |
| Tank Release Detection: | Statistical Inventory Reconciliation |
| Tank SFC Type: | Not reported |
| **Pipe Material:** | Steel |
| **Pipe Construction:** | Single Wall Pipe |
| **Pipe Primary Release Detection:** | Safe Suction (No Leak Detection) |
| **Pipe Second Release Detection:** | Not reported |
| **Pipe Corrosion Protection:** | None |
| **Pipe Pumping System:** | Gravity Delivery System (No Pump) |
| **Responsible Unit:** | Northwest |
| **Dispenser/Pump SFC Type:** | Not reported |

**Name:** PUGET SOUND POWER & LIGHT CO
**Address:** 44429 SE TANNER RD
**City:** NORTH BEND
**Zip:** 98045

| Tank Name: | 3 |
| Tag Number: | Not reported |
| Tank Status: | Removed |
| Tank Status Date: | 08/06/1996 |
| Tank Install Date: | 12/31/1964 |
| Tank Closure Date: | Not reported |
| Capacity Range: | 111 TO 1,100 Gallons |
| Tank Permit Expiration Date: | Not reported |
| Tank Upgrade Date: | Not reported |
| Tank Spill Prevention: | Not reported |
| Tank Overfill Prevention: | Not reported |
| Tank Material: | Steel |
| Tank Construction: | Not reported |
| Tank Tightness Test: | Not reported |
### PUGET SOUND POWER & LIGHT CO (Continued)

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<td>Dispenser/Pump SFC Type</td>
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### ICR

- Date Ecology Received Report: 10/28/02
- Contaminants Found at Site: Petroleum products
- Media Contaminated: Soil
- Waste Management: Tank
- Region: North Western
- Type of Report Ecology Received: Final cleanup report
- Site Register Issue: 98-54
- County Code: 17
- Contact: Not reported
- Report Title: Site Assessment/Characterization

### ALL SITES:

#### PUGET SOUND POWER & LIGHT CO NORTH BEND

- Name: PUGET SOUND POWER & LIGHT CO NORTH BEND
- Facility Id: 65553121

| Interaction | 57208 |
| Interaction 1: | I |
| Interaction 2: | UST |
| Ecology Program: | TOXICS |
| Program Data: | UST |
| Facility Alt.: | Not reported |
| Program ID: | 9173 |
| Date Interaction: | 2000-03-20 00:00:00 |
| Date Interaction 3: | Underground Storage Tank |
| Latitude: | 47.476038326000001 |
| Longitude: | -121.74931823199999 |

| Interaction | 57207 |
| Interaction 1: | I |
| Interaction 2: | LUST |
| Ecology Program: | TOXICS |
| Program Data: | ISIS |
| Facility Alt.: | Not reported |
| Program ID: | 9173 |
| Date Interaction: | 1995-05-05 00:00:00 |
| Date Interaction 3: | LUST Facility |
| Latitude: | 47.476038326000001 |
| Longitude: | -121.74931823199999 |
CSCSL NFA:
Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 65553121
CS Id: 10054
NFA Date: 10/03/2011
Alternate Site Names: PUGET SOUND POWER & LIGHT CO, PUGET SOUND POWER & LIGHT CO NORTH BEND
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Benzene
Ground Water: Not reported
Surface Water: Not reported
Soil: Remedi-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.476044
Longitude: -121.749333

Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 65553121
CS Id: 10054
NFA Date: 10/03/2011
Alternate Site Names: PUGET SOUND POWER & LIGHT CO, PUGET SOUND POWER & LIGHT CO NORTH BEND
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Metals - Other
Ground Water: Not reported
Surface Water: Not reported
Soil: Remedi-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.476044
Longitude: -121.749333

Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 65553121
CS Id: 10054
NFA Date: 10/03/2011
Alternate Site Names: PUGET SOUND POWER & LIGHT CO, PUGET SOUND POWER & LIGHT CO NORTH BEND
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Diesel
Ground Water: Not reported
Surface Water: Not reported
Soil: Remedi-Below
Sediment: Not reported
Air: Not reported
MAP FINDINGS

PUGET SOUND POWER & LIGHT CO (Continued)  U000923013

Bedrock: Not reported
Latitude: 47.476044
Longitude: -121.749333

Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 65553121
CS Id: 10054
NFA Date: 10/03/2011
Alternate Site Names: PUGET SOUND POWER & LIGHT CO,PUGET SOUND POWER & LIGHT CO NORTH BEND
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Gasoline
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.476044
Longitude: -121.749333

Name: PUGET POWER TANNER MILL
Address: 44429 SE TANNER RD
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 65553121
CS Id: 10054
NFA Date: 10/03/2011
Alternate Site Names: PUGET SOUND POWER & LIGHT CO,PUGET SOUND POWER & LIGHT CO NORTH BEND
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Other
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.476044
Longitude: -121.749333

MAP FINDINGS

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Site 6 of 6 in cluster BL

Actual: RGA HWS:
2011  PUGET POWER TANNER MILL  44429 SE TANNER RD

Focus Map: 18
Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
BN283
Target 43030 SE 137TH PL THROUGHOUT
Property NORTH BEND, WA 98045

Site 1 of 2 in cluster BN

Actual: 484 ft.
Focus Map: 18

ASBESTOS:
Name: Not reported
Address: 43030 SE 137TH PL THROUGHOUT
City, State, Zip: NORTH BEND, WA 98045
Facility Type: House
Parent ID: 0
Form ID: 118181#1427Affor549883
Notice Date: 06/22/2016
Start Date: 07/13/2016
Completion Date: 07/14/2016
Initial: 1
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: 8:00 AM
Site Hours End: 3:00 PM
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: 1
Thursday: 1
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: 425-512-8750
Job Site CAS: Anthony Chase
Project Form Email: js@affenv.net
Property Owner Name: Matt Perkins
Property Owner Agent: Affordable Environmental, Inc (ABCN00001427)
Property Owner Address: 14725 SE 36th St Suite 100
Property Owner City: Bellevue
Property Owner State: WA
Property Owner Zip4: 98006
Property Owner Phone: 425-452-0345
Job Site Room: Throughout
Facility Age: 1970’s
Facility Size: 1200
Facility Remodel: Not reported
Facility Demo: 1
Facility Repair: Not reported
Facility Maint: Not reported
Removed: 1
Encapsulated: Not reported
Quantity Sq Ft: 770
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: 1
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: 1
Sq Ft Other: 1
Sq Ft Other Text: window caulking
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Muddled Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: 1
Outdoors: 1
Neg Pres Enclosure: 1
Glove Bag: Not reported
Mini Enclosure: 1
Critical Barriers: 1
Wrap And Cut: Not reported
Wet Methods: 1
HEPA Vacuum: 1
MANUALMETHODS: 1
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: 1
Full Face APR: 1
PAPR: Not reported
Type C Continuous: 1
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: 2016-06-22 13:12:44
Submitter IP Address: 73.193.81.219
Region: 2
UBI: 602577245
Notice type: Initial
Project Type: Other Square Footage, Roofing, Sheet Vinyl
Supervisor: Anthony Chase
Supervisor Phone: Not reported
Certificate Status: ACTIVE

BN284 WARE AMSITES S119169732
Target Property NORTH BEND, WA 98045

Site 2 of 2 in cluster BN

Actual: 484 ft.
Focus Map: 18

ALL SITES:
Name: CEDAR LANDING PHASES 1 2 & 3
Facility Id: 20099
Interaction: 118293
CEDAR LANDING PHASES 1, 2 & 3 (Continued)

Interaction 1: A
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: Cedar Landing Phases 1, 2 & 3
Program ID: WAR304150
Date Interaction: 2016-05-06 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.476230100000002
Longitude: -121.765360648

Site 1 of 2 in cluster BO

Actual: 519 ft.

Focus Map: 19

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016782522
Registry ID: 110058230347
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110058230347

286
Target 13803 424TH AVE SE CHIMNEY, GARAGE DOOR, KITCHEN/LIVING ROOM
Property NORTH BEND, WA

ASBESTOS:
Name: Not reported
Address: 13803 424TH AVE SE CHIMNEY, GARAGE DOOR, KITCHEN/LIVING ROOM
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Other linear footage, Other Square Footage, Vinyl Asbestos Tile
Supervisor: Mike Guiley ()
Supervisor Phone: Not reported
Certificate Status: ACTIVE
Name: Not reported
Address: 13803 424TH AVE SE CHIMNEY, GARAGE DOOR, KITCHEN/LIVING ROOM
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 69536#1210Therm655353
Notice Date: 03/20/2013
Start Date: 03/23/2013
Completion Date: 03/23/2013
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: Thermatech Northwest Inc (ABCN00001210)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Mudded Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
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Lin Ft Other2 Text: Not reported
Indoors: Not reported
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Wrap And Cut: Not reported
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HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
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### Site 1 of 2 in cluster BP

**Target:** DAVID PIT  
**Property:** NORTH BEND, WA  98045  
**Actual:** 553 ft.  
**Focus Map:** 19

- **Deposit identification Number:** Not reported
- **City,State,Zip:** NORTH BEND, WASHINGTON 98045
- **URL:** https://mrdata.usgs.gov/mrds/show-mrds.php?dep_id=10132078
- **Region:** United States
- **Country:** Sand and Gravel, Construction
- **Ore Minerals or Materials:** Not reported
- **Gangue Minerals or Materials:** Not reported
- **Other Minerals or Materials:** Not reported

### Site 2 of 2 in cluster BO

**Target:** TANNERWOOD  
**Property:** NORTH BEND, WA  98045  
**Actual:** 520 ft.  
**Focus Map:** 19

- **Deposit identification Number:** Not reported
- **City,State,Zip:** NORTH BEND, WASHINGTON 98045
- **URL:** Not reported
- **Region:** Sand and Gravel, Construction
- **Country:** Not reported
- **Primary Commodities:** Not reported
- **Secondary Commodities:** Not reported
- **Tertiary Commodities:** Not reported
- **Operation Type:** Not reported
- **Deposit Type:** Not reported
- **Production Size:** Not reported
- **Development Status:** Not reported
- **Ore Minerals or Materials:** Not reported
- **Gangue Minerals or Materials:** Not reported
- **Other Minerals or Materials:** Not reported

---

(Continued)
DAVID PIT (Continued)

Ore Body Form: Not reported
Working Type: Not reported
Mineral Deposit Model: Not reported
Alteration Processes: Not reported
Concentration Processes: Not reported
Previous Names: Dept of Highways
Ore Controls: Not reported
Reporter: Ridenour, James
Host Rock Unit Name: Not reported
Host Rock Type: Not reported
Associated Rock Unit Name: Not reported
Associated Rock Type Code: Not reported
Structural Characteristics: Not reported
Tectonic Setting: Not reported
References: Not reported
First Production Year: Not reported
Began Before/After FPY: Not reported
Last Production Year: Not reported
Ended Before/After LPY: Not reported
Year Discovered: Not reported
Found Before/After YD: Not reported
Production History: Not reported
Discovery Information: Not reported
Latitude: 47.47561
Longitude: -121.73871

289
Target 13739 436TH AVE SE
Property NORTH BEND, WA

SPILLS:
Name: Not reported
Address: 13739 436TH AVE SE
City,State,Zip: NORTH BEND, WA
Facility ID: 642978
Medium: SOIL
Material Desc: PETROLEUM - MINERAL OIL
Material Qty: 10
Material Units: GALLON
Date Received: 08/06/2013
Contact Name: UNKNOWN
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported
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<td>468TH AVE</td>
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### Site 2 of 2 in cluster BP

**Target:**

- **ULID NO 6 SEWER PIPE INSTALL**
- **Name:** ULID NO 6 SEWER PIPE INSTALL
- **Facility Id:** 12559

**Interaction:** 91689

**Interaction 1:** A

**Interaction 2:** ENFORFNL

**Ecology Program:** WATQUAL

**Program Data:** DMS

**Facility Alt.:** Not reported

**Program ID:** Not reported

**Date Interaction:** 2010-03-16 00:00:00

**Date Interaction 3:** Enforcement Final

**Latitude:** 47.475545046000001

**Longitude:** -121.74553319499999

**Interactions:**

- **Interaction:** 89675
- **Interaction 1:** I
- **Interaction 2:** CONSTSWGP
- **Ecology Program:** WATQUAL
- **Program Data:** PARIS
- **Facility Alt.:** ULID NO. 6-SEWER PIPE INSTALL
- **Program ID:** WAR011863
- **Date Interaction:** 2010-01-06 00:00:00
- **Date Interaction 3:** Construction SW GP
- **Latitude:** 47.475545046000001
- **Longitude:** -121.74553319499999

---

**FINDS:**

- **Registry ID:** 110015565681

---

**BP291**

**MAS RESOURCES INC JOHNSON PIT**

**Target:**

- **TANNER RD**
- **NORTH BEND, WA 98045**

**Site 2 of 2 in cluster BP**

**Actual:**

- **ULID NO 6 SEWER PIPE INSTALL**
- **Name:** MAS RESOURCES INC JOHNSON PIT
- **Facility Id:** 759689

**Interaction:** 80766

**Interaction 1:** I

**Interaction 2:** SANDGP

**Ecology Program:** WATQUAL

**Program Data:** PARIS

**Facility Alt.:** Not reported

**Program ID:** WAG503157

**Date Interaction:** 1999-08-06 00:00:00

**Date Interaction 3:** Sand and Gravel GP

**Latitude:** 47.47548428799997

**Longitude:** -121.73936259200001

---

**FINDS:**

- **Registry ID:** 110015565681
MAS RESOURCES INC JOHNSON PIT  (Continued)  1007079851

Facility URL:  http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110015565681

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

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<th>292</th>
<th>TANNER FALLS RECLAMATION AND PARK</th>
<th>NORTH BEND, WA  98045</th>
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<tbody>
<tr>
<td>Actual: 524 ft.</td>
<td>19</td>
<td>Focus Map:</td>
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**ALLSITES:**
Name: TANNER FALLS RECLAMATION AND PARK
Facility Id: 13623

**Interaction:** 107647
Interaction 1: A
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: Tanner Falls Reclamation and Park
Program ID: WAR301698
Date Interaction: 2014-02-21 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.475369246
Longitude: -121.743745569

**NPDES:**
Name: TANNER FALLS RECLAMATION AND PARK
Address: SE 140TH ST WEST OF TANNERWOOD WAY SE
City,State,Zip: NORTH BEND, WA 98045
Facility Status: Active
Facility Type: Construction SW GP
Admin Region: Headquarters
Date Issued: 11/18/2015
Latitude: 47.47537358
Longitude: -121.743780
Permit ID: WAR301698
Permit Version: 1
Permit Status: Active
Permit SubStatus: Coverage Issued
Ecology Contact: Tracie Walters
WRIA: Snohomish
Permit Expiration Date: 12/31/2020
Effective Date: 01/01/2016
Days to Expiration: -443
### Site 1 of 3 in cluster BQ

**BQ293**  
Target Property: WA DOT NORTH BEND  
Address: 45000 SE 140TH ST  
City, State, Zip: NORTH BEND, WA 98045  
Actual: 532 ft.  
Focus Map: 19

<table>
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<tr>
<th>Actual</th>
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<th>VCP:</th>
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</table>
| 532 ft. | 19 | Name: WA DOT NORTH BEND  
Address: 45000 SE 140TH ST  
City, State, Zip: NORTH BEND, WA 98045  
edr_fstat: WA  
edr fizip: 98045  
edr_fcnty: KING  
edr Zip: Not reported  
Facility ID: 26445399  
VCP Status: Not reported  
VCP: NFA  
Ecology Status: Not reported  
NFA Type: Not reported  
Date NFA: 2005-03-08  
Rank: Not reported  
Cleanup Site ID: 3496  
Contaminant Name: Metals Priority Pollutants  
Soil: Remediated |

---

### Site 2 of 3 in cluster BQ

**BQ294**  
Target Property: WA DOT NORTH BEND  
Address: 45000 SE 140TH ST  
City, State, Zip: NORTH BEND, WA 98045  
Actual: 532 ft.  
Focus Map: 19

<table>
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</table>
| 532 ft. | 19 | Name: WA DOT NORTH BEND  
Address: 45000 SE 140TH ST  
City, State, Zip: NORTH BEND, WA 98045  
edr_fstat: WA  
edr fizip: 98045  
edr_fcnty: KING  
edr Zip: Not reported  
Facility ID: 26445399  
VCP Status: Not reported  
VCP: NFA  
Ecology Status: Not reported  
NFA Type: Not reported  
Date NFA: 2005-03-08  
Rank: Not reported  
Cleanup Site ID: 3496  
Contaminant Name: Petroleum Products-Unspecified  
Soil: Remediated |
WA DOT NORTH BEND (Continued)

Date Interaction: 1998-09-24 00:00:00
Date Interaction 3: State Cleanup Site
Latitude: 47.475401325
Longitude: -121.744154233

Interaction: 35043
Interaction 1: I
Interaction 2: VOLCLNST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: WA DOT NORTH BEND
Program ID: NW1315
Date Interaction: 2004-08-31 00:00:00
Date Interaction 3: Voluntary Cleanup Sites
Latitude: 47.475401325
Longitude: -121.744154233

CSCSL NFA:
Name: WA DOT NORTH BEND
Address: 45000 SE 140TH ST
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 26445399
CS Id: 3496
NFA Date: 03/08/2005
Alternate Site Names: CASCADE DENSIFIED FUEL,STATE OF WASHINGTON DOT NORTH BEND,TANNER PIT SITE,WSDOT NORTHBEND
NFA Reason: NFA-Voluntary Cleanup Program Review
Site Status: NFA
Region: Northwest
Contaminant Name: Metals Priority Pollutants
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.475407
Longitude: -121.744169

Name: WA DOT NORTH BEND
Address: 45000 SE 140TH ST
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 26445399
CS Id: 3496
NFA Date: 03/08/2005
Alternate Site Names: CASCADE DENSIFIED FUEL,STATE OF WASHINGTON DOT NORTH BEND,TANNER PIT SITE,WSDOT NORTHBEND
NFA Reason: NFA-Voluntary Cleanup Program Review
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum Products-Unspecified
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated
Sediment: Not reported
WA DOT NORTH BEND (Continued) 1007073556

Air: Not reported
Bedrock: Not reported
Latitude: 47.475407
Longitude: -121.744169

FINDS:
Registry ID: 110015501900
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_regis
registry_id=110015501900

Environmental Interest/Information System:
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

BQ295 WA DOT NORTHBEND WA RGA HWS S115347757
Target 45000 SE 140TH ST N/A
Property NORTH BEND, WA
Site 3 of 3 in cluster BQ
Actual: RGA HWS: 2004 WA DOT NORTHBEND 45000 SE 140TH ST
Focus Map: 19

296 AT&T WIRELESS TANNER WA ALLSITES 1008919892
Target 16550 487TH AVE SE FINDS N/A
Property NORTH BEND, WA 98045

ALLSITES:
Name: AT&T WIRELESS TANNER
Facility Id: 8479624

Interaction: 127880
Interaction 1: 1
Interaction 2: TIER2
Ecology Program: HAZWASTE
Program Data: EPCRA
Facility Alt.: AT&T WIRELESS TANNER
Program ID: CRK000056010
Date Interaction: 2002-01-01 00:00:00
Date Interaction 3: Emergency/Haz Chem Rpt TI
Latitude: 47.47513179100003
Longitude: -121.747473822

Interaction: 127881
Interaction 1: A
Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
### Site 2 of 2 in cluster BR

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<td>Site</td>
<td>ECHO</td>
<td>ECHO</td>
<td>N/A</td>
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</tbody>
</table>

#### FINDS: 110040626793

Registry ID: 110040626793

**Environmental Interest/Information System:** Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

**Click this hyperlink** while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**ECHO:**
- Envld: 1012224640
- Registry ID: 110040626793

---

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Target Property</th>
<th>Site</th>
<th>EDR ID Number</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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<tbody>
<tr>
<td>299</td>
<td>NW CASCADES INC</td>
<td>WA SPILLS</td>
<td>S110336416</td>
<td>S110336416</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>13805 457TH AVE SE</td>
<td>NORTH BEND, WA</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

#### SPILLS:
- Name: NW CASCADES INC
- Address: 13805 457TH AVE SE
- City, State, Zip: NORTH BEND, WA
- Facility ID: 619178
- Medium: IMPERMEABLE CONTAINMENT
- Material Desc: PETROLEUM - UNKNOWN
- Material Qty: Not reported
- Material Units: GALLON
- Date Received: 04/11/2010
- Contact Name: Not reported
- Incident Date: Not reported
- Incident Category Type: Not reported
- Incident Category: Not reported
- Latitude: Not reported
- Longitude: Not reported
- Source Type: Not reported
- Source: Not reported
- Vessel Facility Name2: Not reported
- Recovered Quantity: Not reported
- Resp Party Contact: Not reported
- Cause: Not reported
NW CASCADES INC (Continued)  

Cause Type: Not reported  
Resp Party Name: Not reported

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<tr>
<th>Site Elevation</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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<td>300 CEDAR LANDING PHASES 1 2 &amp; 3</td>
<td>FINDS 1023666486</td>
<td>N/A</td>
</tr>
<tr>
<td>Target UNSPECIFIED</td>
<td>ECHO N/A</td>
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<tr>
<td>Property NORTH BEND, WA 98045</td>
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FINDS:  
Registry ID: 110070080669  
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110070080669

Environmental Interest/Information System:  
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.  

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:  
Envid: 1023666486  
Registry ID: 110070080669  
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110070080669

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<tr>
<th>Site 1 of 2 in cluster BS</th>
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<tr>
<td>Actual: 554 ft.</td>
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<tr>
<td>Sic Code(s): 144200</td>
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<tr>
<td>Sic Code(s): 000000</td>
</tr>
<tr>
<td>Sic Code(s): 000000</td>
</tr>
<tr>
<td>Mine ID: 4503732</td>
</tr>
<tr>
<td>Entity Name: TANNER FALLS</td>
</tr>
<tr>
<td>Company: FURY SITE WORKS INC</td>
</tr>
<tr>
<td>Status: 4</td>
</tr>
<tr>
<td>Status Date: 20150904</td>
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<tr>
<td>Operation Class: 2</td>
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<tr>
<td>Number of Shops: 0</td>
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<td>Number of Plants: 0</td>
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<td>Latitude Degree: 47</td>
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<td>Longitude Minutes: 44</td>
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<td>Longitude Seconds: 21</td>
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</table>
### FURY SITE WORKS INC (Continued)

**Number of Pits:** 000

---

**BS302**  
**Site 2 of 2 in cluster BS**

**Mine ID:** 4503732  
**Mine Name:** TANNER FALLS  
**Mine Address:** 45100 NE 140TH SE  
**City, State, Zip:** NORTH BEND, WA 98045  
**Primary SIC Code:** Not reported  
**Mine Type:** Surface  
**Mine Status Description:** Abandoned  
**Mine Status Date:** 9/4/2015  
**Coal (C) or Metal (M) Mine:** M  
**Controller ID:** 0114441  
**Controller Name:** John R Day  
**Operator ID:** 0134493  
**Operator name:** Fury Site Works Inc  
**Address of Record Street:** 43520 SE North Bend Way  
**Address of Record PO Box:** Not reported  
**Address of Record City:** North Bend  
**Address of Record State:** WA  
**Address of Record Zip Code:** 980452118  
**Assessment Address Street:** Not reported  
**Assessment Address PO Box:** Not reported  
**Assessment Address City:** NORTH BEND  
**Assessment Address State:** WA  
**Assessment Address Zip Code:** 980452118  
**Mine Health and Safety Address Street:** Not reported  
**Mine Health and Safety Address PO Box:** 2118  
**Mine Health and Safety Address City:** North Bend  
**Mine Health and Safety Address State:** WA  
**Mine Health and Safety Address Zip Code:** 980452118  
**Longitude:** -121.739167  
**Latitude:** 47.475

---

**303**  
**KING COUNTY SHORT PLAT S0195076/S048**

**WA UIC:** S114423597  
**Target:** 44139 SE 136TH ST  
**Property:** NORTH BEND, WA  
**Number of Pits:** 000

---

**UIC:**  
**Name:** KING COUNTY SHORT PLAT S0195076/S048  
**Address:** 44139 SE 136TH ST  
**City, State, Zip:** NORTH BEND, WA  
**Site Number:** 19783  
**Owner Name:** King County WLRD - DSS  
**Well Status:** Active  
**EPA Well Type:** 5H1 - Stormwater  
**Latitude:** 47.475278  
**Longitude:** 121.750833  
**Well Name:** 14153  
**Registration Type:** Municipal Stormwater
KING COUNTY SHORT PLAT S0195076/S048 (Continued) S114423597

Construction Date: 11/14/1995
Construction Type: Other
Depth: 2

BT304 M.C. ANDERSON TRUCKING WA ICR S103508144
Target 44700 NORTH BEND WAY N/A
Property NORTH BEND, WA 98045

Site 1 of 6 in cluster BT
Actual: 530 ft.
Focus Map: 19

ICR:
Date Ecology Received Report: 02/21/91
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 91-23
County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 09/30/91
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Not reported
Site Register Issue: 92-08
County Code: 17
Contact: Not reported
Report Title: Not reported

BT305 CHAMPION INTERNATIONAL CORP WA ALLSITES S109557180
Target 200 FT S OF MIDDLE FK RD ON N/A
Property NORTH BEND, WA 98045

Site 2 of 6 in cluster BT
Actual: 527 ft.
Focus Map: 19

ALLSITES:
Name: CHAMPION INTERNATIONAL CORP
Facility Id: 79177226

Interaction: 64984
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WA0000928291
Date Interaction: 1994-11-10 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.47460318099999
Longitude: -121.74308073
CHAMPION INTERNATIONAL CORP (Continued)

interaction: 126185
interaction 1: A
interaction 2: HWG
ecology program: HAZWASTE
program data: TURBOWASTE
facility alt.: Champion International Corp
program ID: WA000928291
date interaction: 1994-12-31 00:00:00
date interaction 3: Hazardous Waste Generator
latitude: 47.474603180999999
longitude: -121.74308073

BT306
Target: 44711 SE NORTHBEND WAY
Property: NORTH BEND, WA 98045
Site 3 of 6 in cluster BT
Actual: 527 ft.
Focus Map: 19
FINDS: 1007075509

Environmental Interest/Information System:
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

BT307
Target: 44711 SE NORTHBEND WAY/PO BOX 354
Property: NORTH BEND, WA
Site 4 of 6 in cluster BT
Actual: 527 ft.
Focus Map: 19
RGA LUST:
2010 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2009 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2008 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2007 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2006 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2005 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2004 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2003 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2002 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2001 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
2000 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
1999 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
1998 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
1997 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
1995 MC ANDERSON TRUCKING 44711 SE NORTHBEND WAY/PO BOX 354
BT308  CHAMPION INTERNATIONAL CORP  WA RGA LUST  S115438784
Target 44711 SE NORTHBEND  N/A
Property NORTH BEND, WA

Site 5 of 6 in cluster BT
Actual: RGA LUST: 1996  MC ANDERSON  44711 SE NORTHBEND
Focus Map: 19

BT309  CHAMPION INTERNATIONAL CORP  RCRA NonGen / NLR  1000982915
Target 200 FT S OF MIDDLE FK RD ON  FINDS  WA0000928291
Property NORTH BEND, WA  98045

Site 6 of 6 in cluster BT
Actual: RCRA NonGen / NLR: 1995-01-01 00:00:00.0
Focus Map: 19

Owner/Operator Summary:
Owner/operator name: CHAMPION INTERNATIONAL CORP
Owner/operator address: RAILROAD RD RR R O W
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 1996-05-01 00:00:00.
Owner/Op end date: Not reported

Owner/operator name: CHAMPION INTERNATIONAL CORP
Owner/operator address: 200 FT S OF MIDDLE FK RD ON RR R O W
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
CHAMPION INTERNATIONAL CORP (Continued)

Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: DEJARLAIS, GARY
Owner/operator address: 1011 E MAIN AVE STE 303 RR R O W
PUYALLUP, WA 98372
Owner/operator country: US
Owner/operator telephone: 253-841-7991
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 1995-01-01 00:00:00.0
Site name: CHAMPION INTERNATIONAL CORP
Classification: Not a generator, verified
Violation Status: No violations found

FINDS:
Registry ID: 110008214495
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110008214495

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means to query and display data maintained by the Washington
Department of Ecology. This system contains key information for each
facility/site that is currently, or has been, of interest to the Air
Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water
Quality Programs.
RCRAInfo is a national information system that supports the Resource
Conservation and Recovery Act (RCRA) program through the tracking of
events and activities related to facilities that generate, transport,
and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA
program staff to track the notification, permit, compliance, and
corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access
additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000982915
Registry ID: 110008214495
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110008214495

310 WA SPILLS S123671730 N/A
Target 457TH AVE S Property NORTH BEND, WA 98045
Actual: 631 ft.
Focus Map: 19
SPILLS:
Name: Not reported
Address: 457TH AVE S
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 105017
Medium: Impermeable Containment
Material Desc: HYDRAULIC OIL
Material Qty: 3
Material Units: Gals
Date Received: Not reported
Contact Name: Not reported
Incident Date: 03/22/2019
Incident Category Type: Oil Spill
Incident Category: Oil Spill
Latitude: 47.47457
Longitude: -121.73069
Source Type: Vehicle
Source: Commercial Truck
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Republic Services

311 WA ASBESTOS S125601702 N/A
Target 45312 SE 140TH STREET Property NORTH BEND, WA
Actual: 566 ft.
Focus Map: 19
ASBESTOS:
Name: Not reported
Address: 45312 SE 140TH STREET
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 39418##1172Partn862772
Notice Date: 06/25/2010
Start Date: 07/06/2010
Completion Date: 07/08/2010
Initial: Not reported
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<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>EDR ID Number</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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</table>

(Continued)

![Table with columns and rows containing various entries like Amended, On Hold, Off Hold, Emergency, Site Hours Start, Site Hours End, Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Contractor ID, Phone, Job Site CAS, Project Form Email, Property Owner Name, Property Owner Agent, Property Owner Company, Property Owner Address, Property Owner City, Property Owner State, Property Owner Zip4, Property Owner Phone, Job Site Room, Facility Age, Facility Size, Facility Remodel, Facility Demo, Facility Repair, Facility Maint, Removed, Encapsulated, Quantity Sq Ft, Fireproofing, Popcorn Ceiling, CAB, Sheet Vinyl, Asbestos Paper, Boiler Insulation, Duct Paper, VAT, Roofing, Sq Ft Other, Sq Ft Other Text, Quantity Lin Ft, Mag Pipe Insulation, Air Cell Pipe Insulation, Ducting Insulation, Cement Asbestos Pipe, Muddled Pipe Insulation, Duct Tape, Lin Ft Other1, Lin Ft Other1 Text, Lin Ft Other2, Lin Ft Other2 Text. The entries are all Not reported except for Property Owner Company which is Partners Construction Inc (ABCN00001172).]
(Continued)

Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601546194
Notice type: Initial
Project Type: Popcorn Ceiling
Supervisor: Phil Sheridan
Supervisor Phone: Not reported
Certificate Status: EXPIRED

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<th>IRON HORSE PARK</th>
<th>WA UST</th>
<th>U003604813</th>
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<tbody>
<tr>
<td>Target</td>
<td>I 90 EXIT 32</td>
<td>NORTH BEND, WA 98045</td>
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Site 1 of 2 in cluster BU

Actual: 504 ft.
Focus Map: 18

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<tbody>
<tr>
<td>Name: IRON HORSE PARK</td>
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<tr>
<td>Address: I 90 EXIT 32</td>
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<tr>
<td>City: NORTH BEND</td>
</tr>
<tr>
<td>Zip: 98045</td>
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<tr>
<td>Facility ID: 17443974</td>
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<td>Site Id: 496557</td>
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<tr>
<td>UBI: Not reported</td>
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<td>Phone Number: Not reported</td>
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<tr>
<td>Decimal Latitude: 47.473935</td>
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<tr>
<td>Decimal Longitude: -121.75972</td>
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<td>Tank Name: 1</td>
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<td>Tag Number: Not reported</td>
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<td>Tank Status: Removed</td>
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<tr>
<td>Tank Status Date: 12/10/1999</td>
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<td>Tank Install Date: 01/01/1900</td>
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<tr>
<td>Tank Closure Date: Not reported</td>
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<td>Capacity Range: Not reported</td>
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<td>Tank Permit Expiration Date: Not reported</td>
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IRON HORSE PARK (Continued) U003604813

Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Not reported
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Site 2 of 2 in cluster BU

BU313 IRON HORSE PARK WA ALLSITES 1007075030
Target  I90 EXIT 32 FINDS N/A
Property NORTH BEND, WA 98045

Actual: 503 ft.

Focus Map: 18

ALLSITES:
Name: IRON HORSE PARK
Facility Id: 17443974

Interaction: 29946
Interaction 1: I
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 496557
Date Interaction: 1999-05-06 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.473929327
Longitude: -121.75970522999999

FINDS:
Registry ID: 110015516743
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015516743

Environmental Interest/Information System:
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Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
### 314 WA SPILLS S118641852

**Target:** I-90 WESTBOUND MILEPOST 34 JUST EAST OF NORTH BEND  
**Property:** NORTH BEND, WA

**SPILLS:**
- **Name:** Not reported  
- **Address:** I-90 WESTBOUND MILEPOST 34 JUST EAST OF NORTH BEND  
- **City, State, Zip:** NORTH BEND, WA  
- **Facility ID:** 89066  
- **Medium:** Land  
- **Material Desc.:** DIESEL/MARINE GAS OIL  
- **Material Qty.:** 60  
- **Material Units:** Not reported  
- **Date Received:** Not reported  
- **Contact Name:** Not reported  
- **Incident Date:** 05/05/2016  
- **Incident Category Type:** Oil Spill  
- **Incident Category:** Oil Spill

**Source:** Commercial Truck  
- **Vessel Facility Name:** Not reported  
- **Recovered Quantity:** Not reported  
- **Resp Party Contact:** Not reported  
- **Cause:** Not reported  
- **Cause Type:** Not reported  
- **Resp Party Name:** JERRY SAUNDERS  
- **Response Section:**  
  - **Latitude:** 47.4734  
  - **Longitude:** -121.7418

**Vehicle Source Type:** Commercial Truck

### 315 MC ANDERSON TRUCKING U000594632

**Target:** 44711 SE NORTHBEND WAY/PO BOX 354  
**Property:** NORTH BEND, WA 98045

**LUST:**
- **Name:** MC ANDERSON TRUCKING  
- **Address:** 44711 SE NORTHBEND WAY  
- **City, State, Zip:** NORTH BEND, WA 98045  
- **Facility ID:** 14722754  
- **Lust Status Type:** LUST - NFA  
- **Cleanup Site ID:** 8053  
- **Cleanup Unit Type:** Not reported  
- **Process Type:** Not reported  
- **Cleanup Unit Name:** Not reported  
- **Response Section:** Northwest  
- **Release Date:** 12/10/1990  
- **Lust Date:** 10/03/2011  
- **Region:** Northwest  
- **Lust ID:** 856  
- **UST ID:** 10533  
- **Contaminant Name:** Petroleum-Diesel  
- **Ground Water:** Not reported  
- **Surface Water:** Not reported  
- **Soil:** Remediated-Below  
- **Sediment:** Not reported  
- **Air:** Not reported  
- **Bedrock:** Not reported  
- **Lat/Long:** 47.473305 / -121.74073

**Name:** MC ANDERSON TRUCKING
MC ANDERSON TRUCKING (Continued)

Address: 44711 SE NORTHBEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 14722754
Lust Status Type: LUST - NFA
Cleanup Site ID: 8053
Cleanup Unit Type: Not reported
Process Type: Not reported
Cleanup Unit Name: Not reported
Response Section: Northwest
Release Date: 12/10/1990
Lust Date: 10/03/2011
Region: Northwest
Lust ID: 856
UST ID: 10533
Contaminant Name: Petroleum-Other
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.473305 / -121.74073

UST:
Name: MC ANDERSON TRUCKING
Address: 44711 SE NORTHBEND WAY/PO BOX 354
City: NORTH BEND
Zip: 98045
Facility ID: 14722754
Site Id: 10533
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.473305
Decimal Longitude: -121.740739

Tank Name: 1
Tag Number: Not reported
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Closure Date: Not reported
Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Above Ground Piping
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
MC ANDERSON TRUCKING (Continued) U000594632

Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALLSITES:
Name: MC ANDERSON TRUCKING
Facility Id: 14722754

Interaction: 28329
Interaction 1: A
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 10533
Date Interaction: 2000-03-20 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.473299324999999
Longitude: -121.740724234

Interaction: 28328
Interaction 1: I
Interaction 2: LUST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: Not reported
Program ID: 10533
Date Interaction: 1990-12-10 00:00:00
Date Interaction 3: LUST Facility
Latitude: 47.473299324999999
Longitude: -121.740724234

CSCSL NFA:
Name: MC ANDERSON TRUCKING
Address: 44711 SE NORTHBEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 14722754
CS Id: 8053
NFA Date: 10/03/2011
Alternate Site Names: Not reported
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Diesel
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.473305
Longitude: -121.740739
### MC ANDERSON TRUCKING (Continued)

<table>
<thead>
<tr>
<th>Name:</th>
<th>MC ANDERSON TRUCKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>44711 SE NORTHBEND WAY</td>
</tr>
<tr>
<td>City, State, Zip:</td>
<td>NORTH BEND, WA 98045</td>
</tr>
<tr>
<td>Facility/Site Id:</td>
<td>11385314</td>
</tr>
<tr>
<td>CS Id:</td>
<td>8053</td>
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<tr>
<td>NFA Date:</td>
<td>10/03/2011</td>
</tr>
<tr>
<td>Alternate Site Names:</td>
<td>Not reported</td>
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<tr>
<td>NFA Reason:</td>
<td>NFA-Initial Investigation</td>
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<tr>
<td>Site Status:</td>
<td>NFA</td>
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<tr>
<td>Region:</td>
<td>Northwest</td>
</tr>
<tr>
<td>Contaminant Name:</td>
<td>Petroleum-Other</td>
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<tr>
<td>Ground Water:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Surface Water:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Soil:</td>
<td>Remediated-Below</td>
</tr>
<tr>
<td>Sediment:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Air:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Bedrock:</td>
<td>Not reported</td>
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<tr>
<td>Latitude:</td>
<td>47.473305</td>
</tr>
<tr>
<td>Longitude:</td>
<td>-121.740739</td>
</tr>
</tbody>
</table>

### Site 1 of 3 in cluster BV

<table>
<thead>
<tr>
<th>Name:</th>
<th>ESTATE OF DANIEL H CAHILL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address:</td>
<td>45120 SE NORTH BEND WAY</td>
</tr>
<tr>
<td>City, State, Zip:</td>
<td>NORTH BEND, WA 98045</td>
</tr>
<tr>
<td>Facility Address 2:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Facility ID:</td>
<td>11385314</td>
</tr>
<tr>
<td>EPA ID:</td>
<td>WAR000008474</td>
</tr>
<tr>
<td>NAICS:</td>
<td>332812</td>
</tr>
<tr>
<td>State Waste Code Desc:</td>
<td>WT02</td>
</tr>
<tr>
<td>Federal Waste Code Desc:</td>
<td>F002</td>
</tr>
</tbody>
</table>

**Data Year:** 2017

Waste was generated in 2017 but did not manifest and ship off site until 2018.
ESTATE OF DANIEL H CAHILL (Continued)

Mail Name: Not reported
Mailing Address: 1525 N Kentucky St
Mailing City, State, Zip: Arlington, VA 22205-2824
Legal Organization Name: Not reported
Legal Organization Type: Private
Legal Contact: Val Drilevich
Legal Address: 29712 226th Ave SE
Legal Address 2: Not reported
Legal City, State, Zip: Black Diamond, WA 98010
Legal Phone Number: 3602707605
Legal Effective Date: 01/01/2000
Land Organization Name: Not reported
Land Organization Type: Private
Land Contact: Val Drilevich
Land Address: 29712 226th Ave SE
Land City, State, Zip: Black Diamond, WA 98010
Land Phone Number: 3602707605
Operator Organization Name: Not reported
Operator Organization Type: Private
Operator: Val Drilevich
Operator Address: 29712 226th Ave SE
Operator Address 2: Not reported
Operator City, State, Zip: Black Diamond, WA 98010
Operator Phone Number: 3602707605
Operator Effective Date: 01/01/2000
Site Contact: Val Drilevich
Site Contact Address: 29712 226th Ave SE
Contact City, State, Zip: Black Diamond, WA 98010
Site Contact Phone Number: 3602707605
Site Contact Email: Not reported
Gen Status Code: LQG
Monthly Generation: False
Batch Generation: False
One Time Generation: True
Transport Own Waste: False
Transport Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: ESTATE OF DANIEL H CAHILL
Address: 45120 SE NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 11385314
EPA ID: WAR000008474
NAICS: 332812
State Waste Code Desc: WT02
Federal Waste Code Desc: F002
Form Comm: Waste was generated in 2017 but did not manifest and ship off site until 2018.
Data Year: 2017
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: NA
Business Type: Not reported
Mail Name: Not reported
Mailing Address: 1525 N Kentucky St
Mailing City,State,Zip: Arlington, VA 22205
Legal Organization Name: Drilevich, Val
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: 29712 226th Ave SE
Legal Address 2: Not reported
Legal City,State,Zip: Black Diamond, WA 98010
Legal Phone Number: (360)270-7605
Legal Effective Date: 01/01/2000
Land Organization Name: Drilevich, Val
Land Organization Type: Private
Land Contact: Not reported
Land Address: 29712 226th Ave SE
Land City,State,Zip: Black Diamond, WA 98010
Land Phone Number: (360)270-7605
Operator Organization Name: Drilevich, Val
Operator Organization Type: Private
Operator: Not reported
Operator Address: 29712 226th Ave SE
Operator Address 2: Not reported
Operator City,State,Zip: Black Diamond, WA 98010
Operator Phone Number: (360)270-7605
Operator Effective Date: 01/01/2000
Site Contact: Val Drilevich
Site Contact Address: 29712 226th Ave SE
Contact City,State,Zip: Black Diamond, WA 98010
Site Contact Phone Number: (360)270-7605
Site Contact Email: Not reported
Gen Status Code: LQG
Monthly Generation: False
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Estate of Daniel H Cahill (Continued)

Tranports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipment: False
Used Oil Fuel Marketer Meets Spec: False
Site Contact Address 2: Not reported

BV317
Target
Property

ENGINEERED COATING SYSTEMS
45120 SE NORTH BEND WAY
NORTH BEND, WA

Site 2 of 3 in cluster BV

Actual: 569 ft.
Focus Map: 19

RGA HWS:
2012 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY
2011 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY
2010 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY
2009 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY
2008 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY
2007 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY
2006 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY
2005 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY
2004 ENGINEERED COATING SYSTEMS 45120 SE NORTH BEND WAY

BV318
Target
Property

ESTATE OF DANIEL H CAHILL
45120 SE NORTH BEND WAY
NORTH BEND, WA 98045

Site 3 of 3 in cluster BV

Actual: 569 ft.
Focus Map: 19

HSL:
Name: ENGINEERED COATING SYSTEMS
Address: Not reported
City, State, Zip: NORTH BEND, WA
edr_fstat: WA
edr_fzip: Not reported
edr_fcnty: KING
edr_zip: Not reported
Facility Type: Hazardous Sites List
Facility Status: Awaiting Cleanup
FSID Number: 11385314
Rank: 1
Region: NW
EDR Link ID: 11385314
Region Decode: NORTHWEST REGIONAL OFFICE

CSCSL:
Name: ENGINEERED COATING SYSTEMS
Address: 45120 SE NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
<table>
<thead>
<tr>
<th>Facility ID:</th>
<th>11385314</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region:</td>
<td>Northwest</td>
</tr>
<tr>
<td>Lat/Long:</td>
<td>47.47198 / -121.73574</td>
</tr>
<tr>
<td>Clean Up Siteid:</td>
<td>3888</td>
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<tr>
<td>Site Status:</td>
<td>Awaiting Cleanup</td>
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<tr>
<td>Contaminant Name:</td>
<td>Corrosive Wastes</td>
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<tr>
<td>Alternate Site Names:</td>
<td>CASCADE MANUFACTURING, ENGINEERING COATING SYSTEMS</td>
</tr>
<tr>
<td>Site Rank:</td>
<td>1 - Highest Assessed Risk</td>
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<tr>
<td>Has Institutional Control:</td>
<td>Not reported</td>
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<tr>
<td>Past VCP:</td>
<td>Not reported</td>
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<tr>
<td>Current VCP:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Ground Water:</td>
<td>Suspected</td>
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<tr>
<td>Surface Water:</td>
<td>Not reported</td>
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<tr>
<td>Soil:</td>
<td>Suspected</td>
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<tr>
<td>Sediment:</td>
<td>Not reported</td>
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<tr>
<td>Air:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Bedrock:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Responsible Unit:</td>
<td>Northwest</td>
</tr>
</tbody>
</table>

| Name: | ENGINEERED COATING SYSTEMS |
| Address: | 45120 SE NORTH BEND WAY |
| City, State, Zip: | NORTH BEND, WA 98045 |
| Facility ID: | 11385314 |
| Region: | Northwest |
| Lat/Long: | 47.47198 / -121.73574 |
| Clean Up Siteid: | 3888 |
| Site Status: | Awaiting Cleanup |
| Contaminant Name: | Halogenated Organics |
| Alternate Site Names: | CASCADE MANUFACTURING, ENGINEERING COATING SYSTEMS |
| Site Rank: | 1 - Highest Assessed Risk |
| Has Institutional Control: | Not reported |
| Past VCP: | Not reported |
| Current VCP: | Not reported |
| Ground Water: | Suspected |
| Surface Water: | Not reported |
| Soil: | Confirmed Above Cleanup Levels |
| Sediment: | Not reported |
| Air: | Not reported |
| Bedrock: | Not reported |
| Responsible Unit: | Northwest |

| Name: | ENGINEERED COATING SYSTEMS |
| Address: | 45120 SE NORTH BEND WAY |
| City, State, Zip: | NORTH BEND, WA 98045 |
| Facility ID: | 11385314 |
| Region: | Northwest |
| Lat/Long: | 47.47198 / -121.73574 |
| Clean Up Siteid: | 3888 |
| Site Status: | Awaiting Cleanup |
| Contaminant Name: | Metals Priority Pollutants |
| Alternate Site Names: | CASCADE MANUFACTURING, ENGINEERING COATING SYSTEMS |
| Site Rank: | 1 - Highest Assessed Risk |
| Has Institutional Control: | Not reported |
| Past VCP: | Not reported |
| Current VCP: | Not reported |
| Ground Water: | Suspected |
| Surface Water: | Not reported |

TC5992688.2s Page 469
ESTATE OF DANIEL H CAHILL (Continued)

Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

Name: ENGINEERED COATING SYSTEMS
Address: 45120 SE NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 11385314
Region: Northwest
Lat/Long: 47.47198 / -121.73574
Clean Up Siteid: 3888
Site Status: Awaiting Cleanup
Contaminant Name: Non-Halogenated Solvents
Alternate Site Names: CASCADE MANUFACTURING, ENGINEERING COATING SYSTEMS
Site Rank: 1 - Highest Assessed Risk
Has Institutional Control: Not reported
Past VCP: Not reported
Current VCP: Not reported
Ground Water: Suspected
Surface Water: Not reported
Soil: Suspected
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

ALLSITES:
Name: ENGINEERED COATING SYSTEMS
Facility Id: 11385314

Interaction: 125093
Interaction 1: I
Interaction 2: HWOTHER
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Estate of Daniel H Cahill
Program ID: WAR000008474
Date Interaction: 2016-12-31 00:00:00
Date Interaction 3: Haz Waste Management Act
Latitude: 47.471974324999998
Longitude: -121.735725235

Interaction: 26156
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAR000008474
Date Interaction: 1996-03-13 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.471974324999998
Longitude: -121.735725235
ESTATE OF DANIEL H CAHILL (Continued)

Interaction: 124250
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Estate of Daniel H Cahill
Program ID: WAR000008474
Date Interaction: 2016-08-29 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.471974324999998
Longitude: -121.735725235

Interaction: 26157
Interaction 1: A
Interaction 2: SCS
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: Engineered Coating Systems
Program ID: Not reported
Date Interaction: 1999-06-03 00:00:00
Date Interaction 3: State Cleanup Site
Latitude: 47.471974324999998
Longitude: -121.735725235

RCRA NonGen / NLR:
Date form received by agency: 2018-02-16 00:00:00.0
Facility name: ESTATE OF DANIEL H CAHILL
Facility address: 45120 SE NORTH BEND WAY
NORTH BEND, WA 98045
EPA ID: WAR000008474
Mailing address: 1525 N KENTUCKY ST
ARLINGTON, WA 22205
Contact: ROBERT CAHILL
Contact address: 1525 N KENTUCKY ST
ARLINGTON, VA 22205
Contact country: US
Contact telephone: 703-403-9770
Contact email: ROB.311.CAHILL@GMAIL.COM
EPA Region: 10
Land type: Private
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: DRALLEVICH, VAL
Owner/operator address: 29712 226TH AVE SE
BLACK DIAMOND, WA 98010
Owner/operator country: US
Owner/operator telephone: 360-270-7605
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
ESTATE OF DANIEL H CAHILL (Continued)

Owner/Op start date: Not reported
Owner/Op end date: Not reported
Owner/operator name: DRLLEVICH, VAL
Owner/operator address: 29712 226TH AVE SE
BLACK DIAMOND, WA 98010
Owner/operator country: US
Owner/operator telephone: 360-270-7605
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner/Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: DRLLEVICH, VAL
Owner/operator address: 29712 226TH AVE SE
BLACK DIAMOND, WA 98010
Owner/operator country: US
Owner/operator telephone: 360-270-7605
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner/Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

Historical Generators:
- Date form received by agency: 2018-02-15 00:00:00.0
- Site name: ESTATE OF DANIEL H CAHILL
- Classification: Large Quantity Generator

- Date form received by agency: 2018-02-15 00:00:00.0
- Site name: ESTATE OF DANIEL H CAHILL
- Classification: Large Quantity Generator

- Date form received by agency: 2018-02-13 00:00:00.0

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ESTATE OF DANIEL H CAHILL (Continued)

Site name: ESTATE OF DANIEL H CAHILL
Classification: Not a generator, verified
Date form received by agency: 2017-12-15 00:00:00.0
Site name: ESTATE OF DANIEL H CAHILL
Classification: Large Quantity Generator
Date form received by agency: 1997-06-07 00:00:00.0
Site name: ENGINEERED COATING SYSTEMS
Classification: Not a generator, verified
Date form received by agency: 1997-06-06 00:00:00.0
Site name: ENGINEERED COATING SYSTEMS
Classification: Not a generator, verified
Date form received by agency: 1997-06-06 00:00:00.0
Site name: ENGINEERED COATING SYSTEMS
Classification: Not a generator, verified
Date form received by agency: 1997-06-06 00:00:00.0
Site name: ENGINEERED COATING SYSTEMS
Classification: Not a generator, verified
Date form received by agency: 1997-02-10 00:00:00.0
Site name: ENGINEERED COATING SYSTEMS
Classification: Small Quantity Generator
Date form received by agency: 1996-03-13 00:00:00.0
Site name: ENGINEERED COATING SYSTEMS
Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:

1. Waste code: F002
   - Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

2. Waste code: WT02
   - Waste name: Washington State Dangerous Toxic Waste with a toxic constituents concentration greater than or equal to 0.001% and less than 1.0%, determined by biological testing methods or a book designation procedure.

Violation Status: No violations found

FINDS:
Registry ID: 110005404400
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registery_id=110005404400
Estate of Daniel H Cahill (Continued)

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1001092193
Registry ID: 110005404400
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110005404400

319 WA SPILLS S120066787 N/A

NORTH BEND, WA

SPILLS:
Name: Not reported
Address: Not reported
City, State, Zip: NORTH BEND, WA
Facility ID: 91696
Medium: Impermeable Containment
Material Desc: DIESEL/MARINE GAS OIL
Material Qty: 30
Material Units: Not reported
Date Received: Not reported
Contact Name: Not reported
Incident Date: 12/14/2016
Incident Category Type: Oil Spill
Incident Category: Oil Spill
Latitude: 47.47290
Longitude: -121.76120
Source Type: Vehicle
Source: Commercial Truck
Vessel Facility Name2: Not reported
Recovered Quantity: 30
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: NETWORK TRANSPORTATION LLC
320

Target Property

321

Target Property

322

Target Property
I90 CORPORATE PARK (Continued)

Date Interaction 3: Voluntary Cleanup Sites
Latitude: 47.472295322000001
Longitude: -121.71869623800001

CSCSL NFA:
Name: I90 CORPORATE PARK
Address: 46501 & 46511 SE NORTHBEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 8801624
CS Id: 3381
NFA Date: 08/26/2008
Alternate Site Names: PUGET WESTERN'S FORRISTER PROPERTY
NFA Reason: NFA-Voluntary Cleanup Program Review
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum Products-Unspecified
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.472301
Longitude: -121.718711

FINDS:
Registry ID: 110036139862
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110036139862

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

323 SNOQUALMIE VALLEY SCHOOL DIST WA ALLSITES 1000838598
Target 46837 SE MIDDLE FORK RD RCRA NonGen / NLR WAD988513859
Property NORTH BEND, WA 98045 FINDS ECHO

ALLSITES:
Actual: 720 ft.
Focus Map: 20

Interaction: 70358
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAD988513859
SNOQUALMIE VALLEY SCHOOL DIST (Continued) 1000838598

Date Interaction: 1992-11-09 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.474794324999998
Longitude: -121.742055233

RCRA NonGen / NLR:
Date form received by agency: 1997-06-27 00:00:00.0
Facility name: SNOQUALMIE VALLEY SCHOOL DIST
Facility address: 46837 SE MIDDLE FORK RD
NORTH BEND, WA 98045
EPA ID: WAD988513859
Mailing address: PO BOX 400
SNOQUALMIE, WA 98065
Contact: DON GRINA
Contact address: PO BOX 400
SNOQUALMIE, WA 98065
Contact country: US
Contact telephone: 425-888-0351
Contact email: Not reported
EPA Region: 10
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: PARSONS, KEN
Owner/operator address: PO BOX 1058
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-0478
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: SNOQUALMIE VALLEY SCHOOL DIST
Owner/operator address: 46837 SE MIDDLE FORK RD
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: PARSONS, KEN
Owner/operator address: PO BOX 1058
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-0478
SNOQUALMIE VALLEY SCHOOL DIST (Continued)

Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 1997-05-30 00:00:00.0
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 1997-06-26 00:00:00.0
Site name: SNOQUALMIE VALLEY SCHOOL DIST
Classification: Not a generator, verified

Date form received by agency: 1997-06-26 00:00:00.0
Site name: SNOQUALMIE VALLEY SCHOOL DIST
Classification: Not a generator, verified

Date form received by agency: 1997-06-26 00:00:00.0
Site name: SNOQUALMIE VALLEY SCHOOL DIST
Classification: Not a generator, verified

Date form received by agency: 1993-12-31 00:00:00.0
Site name: SNOQUALMIE VALLEY SCHOOL DIST
Classification: Small Quantity Generator
Violation Status: No violations found

FINDS:
Registry ID: 110005380792
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110005380792

Environmental Interest/Information System:
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.
SNOQUALMIE VALLEY SCHOOL DIST (Continued)

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
EnvId: 1000838598
Registry ID: 110005380792
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110005380792

<table>
<thead>
<tr>
<th>UIC: CEDAR VILLAGE DIVISION 2 (D90643)</th>
<th>WA UIC S121083652</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name: CEDAR VILLAGE DIVISION 2 (D90643)</td>
<td>19757</td>
</tr>
<tr>
<td>Address: 14219 443RED PLACE SE</td>
<td></td>
</tr>
<tr>
<td>City, State, Zip: NORTH BEND, WA 98045</td>
<td></td>
</tr>
<tr>
<td>Owner Name: King County WLKD DSS Cedar Village Division 2 (D90643)</td>
<td>19757</td>
</tr>
<tr>
<td>Well Status: Active</td>
<td></td>
</tr>
<tr>
<td>EPA Well Type: 5H1 - Stormwater</td>
<td></td>
</tr>
<tr>
<td>Latitude: 47.471667</td>
<td></td>
</tr>
<tr>
<td>Longitude: 121.7475</td>
<td></td>
</tr>
<tr>
<td>Well Name: 14127</td>
<td></td>
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<tr>
<td>Registration Type: Municipal Stormwater</td>
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<tr>
<td>Construction Date: 12/24/1984</td>
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<tr>
<td>Construction Type: Other</td>
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</tr>
<tr>
<td>Depth: 2</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>BW325 CASCADE GOLF COURSE</th>
<th>FINDS 1007076016</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property: NORTH BEND, WA 98045</td>
<td></td>
</tr>
</tbody>
</table>

Site 1 of 2 in cluster BW

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
### Site 2 of 2 in cluster BW

#### Actual: 502 ft.

**Focus Map:** 18

<table>
<thead>
<tr>
<th>UST: CASCADE GOLF COURSE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name:</strong> CASCADE GOLF COURSE</td>
</tr>
<tr>
<td><strong>Address:</strong> 14303 436 AVE SE</td>
</tr>
<tr>
<td><strong>City:</strong> NORTH BEND</td>
</tr>
<tr>
<td><strong>Zip:</strong> 98045</td>
</tr>
<tr>
<td><strong>Facility ID:</strong> 12124286</td>
</tr>
<tr>
<td><strong>Site Id:</strong> 8168</td>
</tr>
<tr>
<td><strong>UBI:</strong> Not reported</td>
</tr>
<tr>
<td><strong>Phone Number:</strong> Not reported</td>
</tr>
<tr>
<td><strong>Decimal Latitude:</strong> 47.472034</td>
</tr>
<tr>
<td><strong>Decimal Longitude:</strong> -121.7598</td>
</tr>
</tbody>
</table>

- **Tank Name:** 1
- **Tag Number:** Not reported
- **Tank Status:** Closure in Process
- **Tank Status Date:** 08/06/1996
- **Tank Install Date:** 12/31/1964
- **Tank Closure Date:** Not reported
- **Capacity Range:** 111 TO 1,100 Gallons
- **Tank Permit Expiration Date:** Not reported
- **Tank Upgrade Date:** Not reported
- **Tank Spill Prevention:** Not reported
- **Tank Overfill Prevention:** Not reported
- **Tank Material:** Steel
- **Tank Construction:** Not reported
- **Tank Tightness Test:** Not reported
- **Tank Corrosion Protection:** Not reported
- **Tank Manifold:** Not reported
- **Tank Release Detection:** Not reported
- **Tank SFC Type:** Not reported
- **Pipe Material:** Not reported
- **Pipe Construction:** Not reported
- **Pipe Primary Release Detection:** Not reported
- **Pipe Second Release Detection:** Not reported
- **Pipe Corrosion Protection:** Not reported
- **Pipe Pumping System:** Not reported
- **Responsive Unit:** Northwest
- **Dispencer/Pump SFC Type:** Not reported

#### ALLSITES:

- **Name:** CASCADE GOLF COURSE
- **Facility Id:** 12124286

<table>
<thead>
<tr>
<th>Interaction: 26563</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Interaction 1:</strong> I</td>
</tr>
<tr>
<td><strong>Interaction 2:</strong> UST</td>
</tr>
<tr>
<td><strong>Ecology Program:</strong> TOXICS</td>
</tr>
<tr>
<td><strong>Program Data:</strong> UST</td>
</tr>
<tr>
<td><strong>Facility Alt.:</strong> Not reported</td>
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<tr>
<td><strong>Program ID:</strong> 8168</td>
</tr>
<tr>
<td><strong>Date Interaction:</strong> 2000-02-29 00:00:00</td>
</tr>
<tr>
<td><strong>Date Interaction 3:</strong> Underground Storage Tank</td>
</tr>
<tr>
<td><strong>Latitude:</strong> 47.47202832699997</td>
</tr>
</tbody>
</table>
CASCADE GOLF COURSE  (Continued)

Longitude:  -121.759785231

327  PSE  WA SPILLS  S110066814
Target  43816 SE 143RD ST  N/A
Property  NORTH BEND, WA
SPILLS:
Name:  PSE
Address:  43816 SE 143RD ST
City,State,Zip:  NORTH BEND, WA
Facility ID:  616707
Medium:  SOIL
Material Desc:  PETROLEUM - MINERAL OIL
Material Qty:  40
Material Units:  GALLON
Date Received:  11/23/2009
Contact Name:  Not reported
Incident Date:  Not reported
Incident Category Type:  Not reported
Incident Category:  Not reported
Latitude:  Not reported
Longitude:  Not reported
Source Type:  Not reported
Source:  Not reported
Vessel Facility Name2:  Not reported
Recovered Quantity:  Not reported
Resp Party Contact:  Not reported
Cause:  Not reported
Cause Type:  Not reported
Resp Party Name:  Not reported

BX328  EM MATSON JR CO INC  WA ALLSITES  1007123415
Target  45620 SE NORTH BEND WAY  FTTS  N/A
Property  NORTH BEND, WA  98045
Site 1 of 7 in cluster BX
ALLSITES:
Name:  EM MATSON JR CO INC
Facility Id:  798308
Interaction:  7323
Interaction 1:  A
Interaction 2:  TIER2
Ecology Program:  HAZWASTE
Program Data:  EPCRA
Facility Alt.:  Not reported
Program ID:  CRK0000053890
Date Interaction:  2003-09-15 00:00:00
Date Interaction 3:  Emergency/Haz Chem Rpt TI
Latitude:  47.470205348999997
Longitude:  -121.73091417400001

Interaction:  106553
EM MATSON JR CO INC (Continued)

Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Matson LLC Div of Central Garden & Pet
Program ID: WAH000044444
Date Interaction: 2013-11-08 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.470205348999997
Longitude: -121.73091417400001

FTTS INSPI:
Inspection Number: 200209273685 1
Region: 10
Inspection Date: 09/27/02
Inspector: JANUCH
Violation occurred: No
Investigation Type: General Product Review
Investigation Reason: Neutral Scheme, Region
Legislation Code: FIFRA
Facility Function: Producer

HIST FTTS INSPI:
Inspection Number: 200209273685 1
Region: 10
Inspection Date: Not reported
Inspector: JANUCH
Violation occurred: No
Investigation Type: General Product Review
Investigation Reason: Neutral Scheme, Region
Legislation Code: FIFRA
Facility Function: Producer

WA MANIFEST:
Name: MATSON LLC DIV OF CENTRAL GARDEN & PET
Address: 45620 SE NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 798308
EPA ID: WAH000044444
NAICS: 325320
State Waste Code Desc: WT02
Federal Waste Code Desc: Not reported
Form Comm: Not reported
Data Year: 2013
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
EM MATSON JR CO INC (Continued)

Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: 602310161
Tax Reg #: 602310161
Business Type: Formulating
Mail Name: Matson LLC
Mailing Address: PO Box 1820
Mailing City,State,Zip: North Bend, WA 98045
Legal Organization Name: Central Garden & Pet
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: PO Box 1820
Legal Address 2: Not reported
Legal City,State,Zip: North Bend, WA 98045
Legal Phone Number: 925-948-4000
Legal Effective Date: 01/01/2007
Land Organization Name: Matson-Grassman LLC
Land Organization Type: Private
Land Contact: Not reported
Land Address: PO Box 1820
Land City,State,Zip: North Bend, WA 98045
Land Phone Number: 425-888-6212
Operator Organization Name: Matson LLC
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 1820
Operator Address 2: Not reported
Operator City,State,Zip: North Bend, WA 98045
Operator Phone Number: 425-888-6212
Operator Effective Date: 01/01/1998
Site Contact: Ken Matson
Site Contact Address: PO Box 1820
Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: 425-888-6212
Site Contact Email: kmatson@central.com
Gen Status Code: LQG
Monthly Generation: False
Batch Generation: False
One Time Generation: True
Transport Own Waste: False
Transport Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
EM MATSON JR CO INC (Continued)

Site Contact Address 2: Not reported

---

BX329 MATSON, LLC
Target 45620 SE N BEND WAY
Property NORTH BEND, WA 98045

Site 2 of 7 in cluster BX

Actual: 614 ft.
Focus Map: 19

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>BX329</td>
<td></td>
<td></td>
<td></td>
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Site Contact Address 2: Not reported

MAP FINDINGS

<table>
<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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<tbody>
<tr>
<td>BX329</td>
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</tr>
</tbody>
</table>

EM MATSON JR CO INC (Continued)

Facility Name: EM MATSON JR CO INC
Address: 45620 SE NORTH BEND WAY
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: Not reported

Facility Name: EM MATSON JR CO INC
Address: 45620 SE NORTH BEND WAY
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: Not reported

Facility Name: EM MATSON JR CO INC
Address: 45620 SE NORTH BEND WAY
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: Not reported

Facility Name: EM MATSON JR CO INC
Address: 45620 SE NORTH BEND WAY
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: Not reported

Facility Name: EM MATSON JR CO INC
Address: 45620 SE NORTH BEND WAY
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: Not reported

Facility Name: EM MATSON JR CO INC
Address: 45620 SE NORTH BEND WAY
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: Not reported

---

EM MATSON JR CO INC

ICIS: 1007123415

FINDS: 1016307416
ECHO: N/A
MATSON, LLC (Continued) 1016307416

Facility Name: EM MATSON JR CO INC
Address: 45620 SE NORTH BEND WAY
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: Not reported

FINDS:
Registry ID: 110015737862
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110015737862

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.
HAZARDOUS WASTE BIENNIAL REPORTER
SSTS (Section Seven Tracking System) evolved from the FIFRA and TSCA Enforcement System (FATES). SSTS tracks the registration of all pesticide-producing establishments and tracks annually the types and amounts of pesticides, active ingredients, and related devices that are produced, sold, or distributed each year.
ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA’s programs. The vision for ICIS is to replace EPA’s independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016307416
Registry ID: 110015737862
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110015737862
Site 3 of 7 in cluster BX

| Actual: 614 ft. | Focus Map: 19 |

**SSTS:**
- **Name:** MATSON, LLC
- **Address:** 45620 SE N BND WAY
- **City, State, Zip:** NORTH BEND, WA 98045
- **Report Year:** 2013
- **Registration Number:** 8119-WA-1

**Pre 2016:**
- **Registration Number:** 8119-WA-1
- **Name:** MATSON, LLC
- **Address:** 45620 SE N BND WAY
- **Address 2:** Not reported
- **Country Code:** USA
- **Country:** United States
- **Contact Name:** JOSH MATSON
- **Contact Title:** DIRECTOR OF OPERATIONS
- **Contact Telephone:** (253) 258-3110
- **Contact Email:** JMATSON@CENTRAL.COM
- **Product Name:** CORRY’S INSECT KILLER & CORRY’S/DEADLINE BUG BAIT
- **Product Code:** Not reported
- **EPA Product Registration Number:** 8119-5
- **Product Type:** 2 - End Use Product
- **Product Classification:** 61 - Molluscicide (e.g. slug bait)
- **Product Use:** Not reported
- **Market Type:** USA
- **Product Unit of Measure:** Not reported
- **Region:** 10
- **Zero Production:** Not reported
- **RUP:** 2 - All Other Products

**Registration Number:** 8119-WA-1
- **Name:** MATSON, LLC
- **Address:** 45620 SE N BND WAY
- **Address 2:** Not reported
- **Country Code:** USA
- **Country:** United States
- **Contact Name:** JOSH MATSON
- **Contact Title:** DIRECTOR OF OPERATIONS
- **Contact Telephone:** (253) 258-3110
- **Contact Email:** JMATSON@CENTRAL.COM
- **Product Name:** CORRY’S SLUG & SNAIL DEATH & ABN
- **Product Code:** Not reported
- **EPA Product Registration Number:** 8119-11
- **Product Type:** 2 - End Use Product
- **Product Classification:** 61 - Molluscicide (e.g. slug bait)
- **Product Use:** Not reported
- **Market Type:** USA
- **Product Unit of Measure:** Not reported
- **Region:** 10
- **Zero Production:** Not reported
- **RUP:** 2 - All Other Products

**Report Year:** Not reported
MATSON, LLC (Continued)

Registration Number: 8119-WA-1
Report Year: 2012
Registration Number: 8119-WA-1

Pre 2016:

Registration Number: 8119-WA-1
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
Country Code: USA
Country: United States
Contact Name: JOSH MATSON
Contact Title: DIRECTOR OF OPERATIONS
Contact Telephone: (253) 258-3110
Contact Email: JMATSON@CENTRAL.COM
Product Name: CORRY'S SLUG & SNAIL PELLETS
Product Code: Not reported
EPA Product Registration Number: 8119-13
Product Type: 2 - End Use Product
Product Classification: 61 - Molluscicide (e.g. slug bait)
Product Use: Not reported
Market Type: USA
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: 2 - All Other Products

Registration Number: 8119-WA-1
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
Country Code: USA
Country: United States
Contact Name: JOSH MATSON
Contact Title: DIRECTOR OF OPERATIONS
Contact Telephone: (253) 258-3110
Contact Email: JMATSON@CENTRAL.COM
Product Name: DEADLINE RAINTOUGH SLUG & SNAIL KILLER
Product Code: Not reported
EPA Product Registration Number: 8119-9
Product Type: 3 - Repackages/Relabeled
Product Classification: 61 - Molluscicide (e.g. slug bait)
Product Use: Not reported
Market Type: USA
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: 2 - All Other Products

Registration Number: 8119-WA-1
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
Country Code: USA
Country: United States
Contact Name: JOSH MATSON
Contact Title: DIRECTOR OF OPERATIONS
MATSON, LLC (Continued)

Contact Telephone: (253) 258-3110
Contact Email: JMATSON@CENTRAL.COM
Product Name: CORRY'S INSECT KILLER & CORRY'S/DEADLINE BUG BAIT AND ABN
Product Code: Not reported
EPA Product Registration Number: 8119-5-33116
Product Type: 2 - End Use Product
Product Classification: 61 - Molluscicide (e.g. slug bait)
Product Use: Not reported
Market Type: USA
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: 2 - All Other Products

Report Year: 2009
Registration Number: 008119-WA-001

Pre 2016:
Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: KEN MATSON DIRECTOR OF OPERATIONS P: 425-888-6212 E: KMATSON@CENTRAL.COM
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: COOKE PEST GRANULES
Product Code: Not reported
EPA Product Registration Number: 8119-5-33116
Product Type: 2
Product Classification: 61
Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: No
RUP: 2

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: KEN MATSON DIRECTOR OF OPERATIONS P: 425-888-6212 E: KMATSON@CENTRAL.COM
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S INSECT KILLER & CORRY'S/DEADLINE BUG BAIT
Product Code: Not reported
EPA Product Registration Number: 8119-5
Product Type: 2
Product Classification: 61
MATSON, LLC (Continued)

Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: No
RUP: 2

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: KEN MATSON DIRECTOR OF OPERATIONS P: 425-888-6212 E: KMATSON@CENTRAL.COM
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: LILLY MILLER MOSS OUT!
Product Code: Not reported
EPA Product Registration Number: 802-591
Product Type: 3
Product Classification: 59
Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: No
RUP: 2

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: KEN MATSON DIRECTOR OF OPERATIONS P: 425-888-6212 E: KMATSON@CENTRAL.COM
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: LILLY MILLER SLUG & SNAIL BAIT
Product Code: Not reported
EPA Product Registration Number: 8119-11-33116
Product Type: 2
Product Classification: 61
Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: No
RUP: 2

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
**MATSON, LLC (Continued)**

| Country Code: | Not reported |
| Country: | Not reported |
| Contact Name: | KEN MATSON DIRECTOR OF OPERATIONS P: 425-888-6212 E: KMATSON@CENTRAL.COM |
| Contact Title: | Not reported |
| Contact Telephone: | Not reported |
| Contact Email: | Not reported |
| Product Name: | LILLY MILLER SLUG & SNAIL MINI-PELLETS |
| Product Code: | Not reported |
| EPA Product Registration Number: | 8119-13-33116 |
| Product Type: | 2 |
| Product Classification: | 61 |
| Product Use: | Not reported |
| Market Type: | 1 |
| Product Unit of Measure: | Not reported |
| Region: | Not reported |
| Zero Production: | No |
| RUP: | 2 |

| Registration Number: | 008119-WA-001 |
| Name: | MATSON, LLC |
| Address: | 45620 SE N BND WAY |
| Address 2: | Not reported |
| Country Code: | Not reported |
| Country: | Not reported |
| Contact Name: | KEN MATSON DIRECTOR OF OPERATIONS P: 425-888-6212 E: KMATSON@CENTRAL.COM |
| Contact Title: | Not reported |
| Contact Telephone: | Not reported |
| Contact Email: | Not reported |
| Product Name: | MOSS B WARE |
| Product Code: | Not reported |
| EPA Product Registration Number: | 10699-1 |
| Product Type: | 3 |
| Product Classification: | 59 |
| Product Use: | Not reported |
| Market Type: | 1 |
| Product Unit of Measure: | Not reported |
| Region: | Not reported |
| Zero Production: | No |
| RUP: | 2 |

<p>| Registration Number: | 008119-WA-001 |
| Name: | MATSON, LLC |
| Address: | 45620 SE N BND WAY |
| Address 2: | Not reported |
| Country Code: | Not reported |
| Country: | Not reported |
| Contact Name: | KEN MATSON DIRECTOR OF OPERATIONS P: 425-888-6212 E: <a href="mailto:KMATSON@CENTRAL.COM">KMATSON@CENTRAL.COM</a> |
| Contact Title: | Not reported |
| Contact Telephone: | Not reported |
| Contact Email: | Not reported |
| Product Name: | CORRY’S SLUG &amp; SNAIL DEATH &amp; ABN |
| Product Code: | Not reported |
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<td>Contact Title:</td>
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MATSON, LLC (Continued)

Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: KEN MATSON DIRECTOR OF OPERATIONS P: 425-888-6212 E: KMATSON@CENTRAL.COM
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: ELIMINATOR SLUG & SNAIL BAIT II
Product Code: Not reported
EPA Product Registration Number: 8119-11-59144
Product Type: 2
Product Classification: 61
Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: No
RUP: 2

Report Year: 2011
Registration Number: 8119-WA-1

Pre 2016:
Registration Number: 8119-WA-1
Name: MATSON, LLC
Address: 45620 SE N BND WAY
Address 2: Not reported
Country Code: USA
Country: United States
Contact Name: JOSH MATSON
Contact Title: DIRECTOR OF OPERATIONS
Contact Telephone: (253) 258-3110
Contact Email: JMATSON@CENTRAL.COM
Product Name: CORRY'S SLUG & SNAIL DEATH & ABN (SUPP - 59144)
Product Code: Not reported
EPA Product Registration Number: 8119-11-59144
Product Type: 2 - End Use Product
Product Classification: 61 - Molluscicide (e.g. slug bait)
Product Use: Not reported
Market Type: USA and Foreign
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: 2 - All Other Products

Report Year: Not reported
Registration Number: 8119-WA-1
### Site 4 of 7 in cluster BX

**Actual:** 614 ft.

**Focus Map:**
- **Map ID:** BX331
- **Direction:** EDR
- **Distance:** 19
- **Database(s):** SSTS
- **EDR ID Number:** 1005428217
- **EPA ID Number:** N/A

**Site:**
- **Name:** E. M. MATSON JR CO., INC.
- **Address:** 45620 S.E. N BEND WAY
- **City, State, Zip:** NORTH BEND, WA 98045
- **Report Year:** 1996
- **Registration Number:** 008119WA 001

**Pre 2016:**
- **Registration Number:** 008119WA 001
- **Name:** E. M. MATSON JR CO., INC.
- **Address:** 45620 S.E. N BEND WAY
- **Address 2:** Not reported
- **Country Code:** Not reported
- **Country:** Not reported
- **Contact Name:** Not reported
- **Contact Title:** Not reported
- **Contact Telephone:** Not reported
- **Contact Email:** Not reported
- **Product Name:** CORRY'S SLUG & SNAIL DEATH
- **Product Code:** 1
- **EPA Product Registration Number:** 00811900001
- **Product Type:** 2
- **Product Classification:** 20
- **Product Use:** 1
- **Market Type:** 2
- **Product Unit of Measure:** P
- **Region:** Not reported
- **Zero Production:** Not reported
- **RUP:** Not reported

**Registration Number:** 008119WA 001
- **Name:** E. M. MATSON JR CO., INC.
- **Address:** 45620 S.E. N BEND WAY
- **Address 2:** Not reported
- **Country Code:** Not reported
- **Country:** Not reported
- **Contact Name:** Not reported
- **Contact Title:** Not reported
- **Contact Telephone:** Not reported
- **Contact Email:** Not reported
- **Product Name:** CORRY'S SLUG, SNAIL & INSECT KILLER
- **Product Code:** 1
- **EPA Product Registration Number:** 00811900005
- **Product Type:** 2
- **Product Classification:** 20
- **Product Use:** 1
- **Market Type:** 1
- **Product Unit of Measure:** P
- **Region:** Not reported
- **Zero Production:** Not reported
- **RUP:** Not reported
Site 5 of 7 in cluster BX

**Actual:** 614 ft.

**Focus Map:** 19

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<tr>
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<tr>
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<td>NORTH BEND, WA 98045</td>
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<tr>
<td>City, State, Zip</td>
<td>NORTH BEND 98045</td>
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**Pre 2016:**

| Registration Number | 008119WA 001 |
| Name | E.M. MATSON, JR. CO., INC. |
| Address | 45620 S.E. N BEND WAY |
| Address 2 | Not reported |
| Country Code | Not reported |
| Country | Not reported |
| Contact Name | Not reported |
| Contact Title | Not reported |
| Contact Telephone | Not reported |
| Contact Email | Not reported |
| Product Name | CORRY'S SLUG & SNAIL DEATH_ETC. |
| Product Code | 1 |
| EPA Product Registration Number | 00811900001 |
| Product Type | 2 |
| Product Classification | 01 |
| Product Use | 2 |
| Market Type | 2 |
| Product Unit of Measure | Not reported |
| Region | Not reported |
| Zero Production | Not reported |
| RUP | Not reported |

| Registration Number | 008119WA 001 |
| Name | E.M. MATSON, JR. CO., INC. |
| Address | 45620 S.E. N BEND WAY |
| Address 2 | Not reported |
| Country Code | Not reported |
| Country | Not reported |
| Contact Name | Not reported |
| Contact Title | Not reported |
| Contact Telephone | Not reported |
| Contact Email | Not reported |
| Product Name | CORRY'S SLUG, SNAIL & INSECT KILLER |
| Product Code | 1 |
| EPA Product Registration Number | 00811900005 |
| Product Type | 2 |
| Product Classification | 01 |
| Product Use | 2 |
| Market Type | 1 |
| Product Unit of Measure | Not reported |
| Region | Not reported |
| Zero Production | Not reported |
| RUP | Not reported |

| Registration Number | 008119WA 001 |
| Name | E.M. MATSON, JR. CO., INC. |
E.M. MATSON, JR. CO., INC. (Continued)

Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: LILLY MILLER MOSS KIL GRANULES
Product Code: 1
EPA Product Registration Number: 00080200591
Product Type: 3
Product Classification: 05
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA 001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: MOSS B WARE, BLACK MAGIC MOSS STOP
Product Code: 1
EPA Product Registration Number: 01069900001
Product Type: 3
Product Classification: 05
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Report Year: 2004
Registration Number: 008119WA001

Pre 2016:
Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG & SNAIL DEATH (AND OTHER BRAND NAMES)
E.M. MATSON, JR. CO., INC. (Continued) 1004612914

Product Code: 1
EPA Product Registration Number: 100811900011
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG & SNAIL DEATH AND ALTERNATE BRAND NAMES
Product Code: 1
EPA Product Registration Number: 100811900001
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 2
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG & SNAIL PELLETS (MP) AND OTHER BRAND NAMES
Product Code: 1
EPA Product Registration Number: 100811900013
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
E.M. MATSON, JR. CO., INC. (Continued)

Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG, SNAIL & INSECT KILLER & ALT. BRAND NAMES
Product Code: 1
EPA Product Registration Number: 100811900005
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported
Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: DEADLINE RAINTOUGH SLUG & SNAIL PELLETS
Product Code: 1
EPA Product Registration Number: 100811900009
Product Type: 3
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported
Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: MOSS B WARE
Product Code: 1
EPA Product Registration Number: 101069900001
Product Type: 3
Product Classification: 05
E.M. MATSON, JR. CO., INC. (Continued)  

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EPA Product Registration Number: 00811900011

Product Type: 2
Product Classification: 12
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG & SNAIL DEATH AND ALTERNATE BRAND NAMES
Product Code: 1
EPA Product Registration Number: 00811900001

Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 2
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
E.M. MATSON, JR. CO., INC. (Continued)

Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG & SNAIL PELLETS (MP) AND OTHER BRAND NAMES
Product Code: 1
EPA Product Registration Number: 00811900013
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG, SNAIL & INSECT KILLER & ALT. BRAND NAMES
Product Code: 1
EPA Product Registration Number: 00811900005
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: DEADLINE RAINTOUGH SLUG & SNAIL PELLETS
Product Code: 1
EPA Product Registration Number: 00811900009
Product Type: 3
Product Classification: 12
E.M. MATSON, JR. CO., INC.  (Continued)  1004612914

Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: MOSS B WARE
Product Code: 1
EPA Product Registration Number: 01069900001
Pre 2016:
Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG & SNAIL DEATH AND ALTERNATE BRAND NAMES
Product Code: 1
EPA Product Registration Number: 00811900001
Pre 2016:
Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG & SNAIL DEATH AND ALTERNATE BRAND NAMES
Product Code: 1
EPA Product Registration Number: 00811900001
Pre 2016:
E.M. MATSON, JR. CO., INC. (Continued)  

Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG, SNAIL & INSECT KILLER & ALT. BRAND NAMES
Product Code: 1
EPA Product Registration Number: 00811900005
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: MOSS B WARE
Product Code: 1
EPA Product Registration Number: 01069900001
Product Type: 3
Product Classification: 05
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: RAINTOUGH DEADLINE SLUG & SNAIL KILLER
Product Code: 1
EPA Product Registration Number: 00811900009
Product Type: 3
Product Classification: 12
E.M. MATSON, JR. CO., INC. (Continued)

Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Report Year: Not reported
Registration Number: 008119WA 001

Report Year: 1997
Registration Number: 008119WA 001

Pre 2016:
Registration Number: 008119WA 001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG & SNAIL DEATH
Product Code: 1
EPA Product Registration Number: 00811900001
Product Type: 2
Product Classification: 20
Product Use: 1
Market Type: 2
Product Unit of Measure: P
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA 001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG, SNAIL & INSECT KILLER
Product Code: 1
EPA Product Registration Number: 00811900005
Product Type: 2
Product Classification: 20
Product Use: 1
Market Type: 1
Product Unit of Measure: P
Region: Not reported
Zero Production: Not reported
RUP: Not reported
E.M. MATSON, JR. CO., INC. (Continued)

Report Year: 2000
Registration Number: 008119WA 001

Pre 2016:
Registration Number: 008119WA 001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG & SNAIL DEATH AND ALTERNATE BRAND NAMES
Product Code: 1
EPA Product Registration Number: 00811900001
Product Type: 2
Product Classification: 01
Product Use: 2
Market Type: 2
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA 001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG, SNAIL & INSECT KILLER
Product Code: 1
EPA Product Registration Number: 00811900005
Product Type: 2
Product Classification: 01
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA 001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported

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Product Name: MOSS B WARE
Product Code: 1
EPA Product Registration Number: 01069900001
Product Type: 3
Product Classification: 05
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Report Year: 2003
Registration Number: 008119WA001

Pre 2016:
Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG & SNAIL DEATH (L.25)
Product Code: 1
EPA Product Registration Number: 00811900001
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG & SNAIL DEATH AND ALTERNATE BRAND NAMES
Product Code: 1
EPA Product Registration Number: 00811900001
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 2
Product Unit of Measure: Not reported
Region: 10
## E.M. MATSON, JR. CO., INC. (Continued)

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E.M. MATSON, JR. CO., INC. (Continued)

Product Name: DEADLINE RAINTOUGH SLUG & SNAIL PELLETS
Product Code: 1
EPA Product Registration Number: 00811900009
Product Type: 3
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: MOSS B WARE
Product Code: 1
EPA Product Registration Number: 01069900001
Product Type: 3
Product Classification: 05
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Report Year: 2001
Registration Number: 008119WA001

Pre 2016:
Registration Number: 008119WA001
Name: E.M. MATSON, JR. CO., INC.
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: RAINTOUGH DEADLINE SLUG & SNAIL KILLER
Product Code: 1
EPA Product Registration Number: 00811900009
Product Type: 3
Product Classification: 01
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
### E.M. MATSON, JR. CO., INC. (Continued)

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The table above provides detailed information about the company and its products, including registration numbers, names, addresses, contact information, and product details.
### E.M. MATSON, JR. CO., INC. (Continued)

- **Product Name:** MOSS B WARE
- **Product Code:** 1
- **EPA Product Registration Number:** 01069900001
- **Product Type:** 3
- **Product Classification:** 05
- **Product Use:** 2
- **Market Type:** 1
- **Product Unit of Measure:** Not reported
- **Region:** 10
- **Zero Production:** Not reported
- **RUP:** Not reported

---

### Site 6 of 7 in cluster BX

### MATSON LLC DIV OF CENTRAL GARDEN & PET

**Target:** 45620 SE NORTH BEND WAY

**Property:** NORTH BEND, WA 98045

#### Actual:

- **614 ft.**

#### Focus Map:

- **19**

**RCA NonGen / NLR:**

- **Date form received by agency:** 2014-01-08 00:00:00.0
- **Facility name:** MATSON LLC DIV OF CENTRAL GARDEN & PET
- **Facility address:** 45620 SE NORTH BEND WAY NORTH BEND, WA 98045
- **EPA ID:** WAH000044444
- **Mailing address:** PO BOX 1820 NORTH BEND, WA 98045
- **Contact:** KEN MATSON
- **Contact address:** PO BOX 1820 NORTH BEND, WA 98045
- **Contact country:** US
- **Contact telephone:** 425-888-6212
- **Contact email:** KMATSON@CENTRAL.COM
- **EPA Region:** 10
- **Classification:** Non-Generator
- **Description:** Handler: Non-Generators do not presently generate hazardous waste

#### Owner/Operator Summary:

- **Owner/operator name:** CENTRAL GARDEN PET
- **Owner/operator address:** PO BOX 1820 NORTH BEND, WA 98045
- **Owner/operator country:** US
- **Owner/operator telephone:** 925-948-4000
- **Owner/operator email:** Not reported
- **Owner/operator fax:** Not reported
- **Owner/operator extension:** Not reported
- **Legal status:** Private
- **Owner/Operator Type:** Owner
- **Owner/Op start date:** 2007-01-01 00:00:00.
- **Owner/Op end date:** Not reported

- **Owner/operator name:** MATSON-GRASSMAN LLC
- **Owner/operator address:** PO BOX 1820 NORTH BEND, WA 98045
- **Owner/operator country:** US
- **Owner/operator telephone:** 425-888-6212
- **Owner/operator email:** Not reported
MATSON LLC DIV OF CENTRAL GARDEN & PET (Continued)

Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported
Owner/operator name: MATSON LLC
Owner/operator address: PO BOX 1820
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-6212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2014-01-07 00:00:00.0
Site name: MATSON LLC DIV OF CENTRAL GARDEN & PET
Classification: Not a generator, verified

Date form received by agency: 2014-01-07 00:00:00.0
Site name: MATSON LLC DIV OF CENTRAL GARDEN & PET
Classification: Large Quantity Generator

Date form received by agency: 2014-01-07 00:00:00.0
Site name: MATSON LLC DIV OF CENTRAL GARDEN & PET
Classification: Not a generator, verified

Date form received by agency: 2013-11-08 00:00:00.0
Site name: MATSON LLC DIV OF CENTRAL GARDEN & PET
Classification: Large Quantity Generator

Hazardous Waste Summary:
MATSON LLC DIV OF CENTRAL GARDEN & PET  (Continued)

- Waste code: WT02
- Waste name: Washington State Dangerous Toxic Waste with a toxic constituents concentration greater than or equal to 0.001% and less than 1.0%, determined by biological testing methods or a book designation procedure.

Violation Status: No violations found

---

**BX334**  
**SSTSMATSON, LLC 1010569904**

**Target**  
45620 S.E. N BEND WAY

**Property**  
NORTH BEND, WA 98045

**Site 7 of 7 in cluster BX**

**Actual:** 614 ft.

**Focus Map:** 19

**SSTSBX334**

**Name:** MATSON, LLC

**Address:** 45620 S.E. N BEND WAY

**City, State, Zip:** NORTH BEND, WA 98045

**Report Year:** 2006

**Registration Number:** 008119-WA-001

**Pre 2016:**

**Registration Number:** 008119-WA-001

**Name:** MATSON, LLC

**Address:** 45620 S.E. N BEND WAY

**Address 2:** Not reported

**Country Code:** Not reported

**Country:**

**Contact Name:** Not reported

**Contact Title:** Not reported

**Contact Telephone:** Not reported

**Contact Email:** Not reported

**Product Name:** CORRY'S SLUG & SNAIL DEATH (& OTHER BRAND NAM

**Product Code:** Not reported

**EPA Product Registration Number:** 008119-0001

**Product Type:** END-USE BLEND, FORMULATION, CONCENTRATE

**Product Classification:** OTHER PESTICIDES (SUCH AS DEET)

**Product Use:** MARKETED IN UNITED STATES

**Market Type:**

**Product Unit of Measure:** Not reported

**Region:** Not reported

**Zero Production:** Not reported

**RUP:** Not reported

**Registration Number:** 008119-WA-001

**Name:** MATSON, LLC

**Address:** 45620 S.E. N BEND WAY

**Address 2:** Not reported

**Country Code:** Not reported

**Country:**

**Contact Name:** Not reported

**Contact Title:** Not reported

**Contact Telephone:** Not reported

**Contact Email:** Not reported

**Product Name:** CORRY'S SLUG & SNAIL DEATH AND ALTERNATE BRAN

**Product Code:** Not reported

**EPA Product Registration Number:** 008119-00001

**Product Type:** END-USE BLEND, FORMULATION, CONCENTRATE

**Product Classification:** OTHER PESTICIDES (SUCH AS DEET)
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Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG & SNAIL PELLETS (MP)(AND OTHER B
Product Code: Not reported
EPA Product Registration Number: 008119-00013
Product Type: END-USE BLEND, FORMULATION, CONCENTRATE
Product Classification: OTHER PESTICIDES (SUCH AS DEET)
Product Use: ALL OTHER PRODUCTS
Market Type: MARKETED IN UNITED STATES
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG, SNAIL & INSECT KILLER & ALT. BR
Product Code: Not reported
EPA Product Registration Number: 008119-00005
Product Type: END-USE BLEND, FORMULATION, CONCENTRATE
Product Classification: OTHER PESTICIDES (SUCH AS DEET)
Product Use: ALL OTHER PRODUCTS
Market Type: MARKETED IN UNITED STATES
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
MATSON, LLC (Continued) 1010569904

Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: DEADLINE RAINTOUGH SLUG & SNAIL PELLETS
Product Code: Not reported
EPA Product Registration Number: 008119-00009
Product Type: REPACKAGED OR RELABELED
Product Classification: OTHER PESTICIDES (SUCH AS DEET)
Market Type: MARKETED IN UNITED STATES
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: MOSS B WARE
Product Code: Not reported
EPA Product Registration Number: 010699-00001
Product Type: REPACKAGED OR RELABELED
Product Classification: ALGICIDE
Product Use: ALL OTHER PRODUCTS
Market Type: MARKETED IN UNITED STATES
Product Unit of Measure: Not reported
Region: Not reported
Zero Production: Not reported
RUP: Not reported

Report Year: 2007
Registration Number: 008119WA001

Pre 2016:
Registration Number: 008119WA001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG & SNAIL DEATH (3.25) + ABN (SUPP-71376, 59144)
Product Code: 1
EPA Product Registration Number: 00811900011
Product Type: 2
Product Classification: 12
MATSON, LLC (Continued) 1010569904

Product Use: 2
Market Type: 2
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG & SNAIL PELLETS (MP)+ABN(SUPP-8845,33116,71376)
Product Code: 1
EPA Product Registration Number: 00811900013
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG, SNAIL & INSECT KILLER + ABN
Product Code: 1
EPA Product Registration Number: 00811900005
Product Type: 2
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
MATSON, LLC (Continued)

Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: DEADLINE RAINTOUGH SLUG & SNAIL PELLETS
Product Code: 1
EPA Product Registration Number: 00811900009
Product Type: 3
Product Classification: 12
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: LILLY MILLER MOSS OUT!
Product Code: 1
EPA Product Registration Number: 00080200591
Product Type: 3
Product Classification: 05
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: Not reported
RUP: Not reported

Registration Number: 008119WA001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: Not reported
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: MOSS B WARE
Product Code: 1
EPA Product Registration Number: 01069900001
Product Type: 3
Product Classification: 05
Product Use: 2
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
MATSON, LLC (Continued)

Zero Production: Not reported
RUP: Not reported

Report Year: 2008
Registration Number: 008119-WA-001

Pre 2016:
Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: DAVID L. GRASSMAN PRESIDENT P: 206-762-2066
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG & SNAIL DEATH + ABN (SUPP-71376, 59144)
Product Code: Not reported
EPA Product Registration Number: 8119-11
Product Type: 2
Product Classification: 04
Product Use: Not reported
Market Type: 2
Product Unit of Measure: Not reported
Region: 10
Zero Production: No
RUP: 2

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: DAVID L. GRASSMAN PRESIDENT P: 206-762-2066
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY’S SLUG & SNAIL PELLETS+ABN(SUPP-8845,33116,71376)
Product Code: Not reported
EPA Product Registration Number: 8119-13
Product Type: 2
Product Classification: 04
Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: No
RUP: 2

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
MATSON, LLC (Continued)

Contact Name: DAVID L. GRASSMAN PRESIDENT P: 206-762-2066
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: CORRY'S SLUG, SNAIL & INSECT KILLER + ABN_(SUPP 33116)
Product Code: Not reported
EPA Product Registration Number: 8119-5
Product Type: 2
Product Classification: 04
Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: No
RUP: 2

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: DAVID L. GRASSMAN PRESIDENT P: 206-762-2066
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: DEADLINE RAI TROUGH SLUG & SNAIL PELLETS
Product Code: Not reported
EPA Product Registration Number: 8119-9
Product Type: 3
Product Classification: 04
Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
Zero Production: No
RUP: 2

Registration Number: 008119-WA-001
Name: MATSON, LLC
Address: 45620 S.E. N BEND WAY
Address 2: Not reported
Country Code: Not reported
Country: Not reported
Contact Name: DAVID L. GRASSMAN PRESIDENT P: 206-762-2066
Contact Title: Not reported
Contact Telephone: Not reported
Contact Email: Not reported
Product Name: LILLY MILLER MOSS OUT!
Product Code: Not reported
EPA Product Registration Number: 802-591
Product Type: 3
Product Classification: 59
Product Use: Not reported
Market Type: 1
Product Unit of Measure: Not reported
Region: 10
**NOR WEST MOBILE HOME PARK WATER SYSTEM**

**Sit 1 of 3 in cluster BY**

<table>
<thead>
<tr>
<th>Actual:</th>
<th>627 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus Map:</td>
<td>19</td>
</tr>
</tbody>
</table>

**FINDS:**
- Registry ID: 110013064708

**Environmental Interest/Information System:**
- COMMUNITY WATER SYSTEM

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

**ECHO:**
- Envid: 1008034342
- Registry ID: 110013064708
<table>
<thead>
<tr>
<th>Site</th>
<th>SPILLS:</th>
<th>Target</th>
<th>Property</th>
<th>Actual: 627 ft.</th>
<th>Focus Map: 19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 2 of 3 in cluster BY</td>
<td>RESIDENT</td>
<td>45810 SE NORTH BEND WAY</td>
<td>NORTH BEND, WA</td>
<td>Name: RESIDENT</td>
<td>Address: 45810 SE NORTH BEND WAY</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>City, State, Zip: NORTH BEND, WA</td>
<td>Facility ID: 531461</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Medium: Not reported</td>
<td>Material Desc: CHEMICAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Material Qty: Not reported</td>
<td>Material Units: Not reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Date Received: 01/22/2003</td>
<td>Contact Name: UNK</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Incident Date: Not reported</td>
<td>Incident Category Type: Not reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Incident Category: Not reported</td>
<td>Latitude: Not reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Longitude: Not reported</td>
<td>Source Type: Not reported</td>
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<tr>
<td></td>
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<td></td>
<td></td>
<td>Source: Not reported</td>
<td>Vessel Facility Name2: Not reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Recovered Quantity: Not reported</td>
<td>Resp Party Contact: Not reported</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Cause: Not reported</td>
<td>Cause Type: Not reported</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Resp Party Name: Not reported</td>
<td></td>
</tr>
</tbody>
</table>

| Site 3 of 3 in cluster BY | FELON | 45810 SE NORTHBEND WAY EAST OF NORTHBEN | NORTH BEND, WA | Name: FELON | Address: 45810 SE NORTHBEND WAY EAST OF NORTHBEN |
| | | | | City, State, Zip: NORTH BEND, WA | Facility ID: 500748 |
| | | | | Medium: Not reported | Material Desc: CHEMICAL |
| | | | | Material Qty: Not reported | Material Units: Not reported |
| | | | | Date Received: 10/28/1998 | Contact Name: Not reported |
| | | | | Incident Date: Not reported | Incident Category Type: Not reported |
| | | | | Incident Category: Not reported | Latitude: Not reported |
| | | | | Longitude: Not reported | Source Type: Not reported |
| | | | | Source: Not reported | Vessel Facility Name2: Not reported |
| | | | | Recovered Quantity: Not reported | Resp Party Contact: Not reported |
| | | | | Cause: Not reported | Cause Type: Not reported |
| | | | | Resp Party Name: Not reported | |
### BZ338

**CEDAR VILLAGE 4 (D90865)**  
**43910 SE 143RD STREET**  
**NORTH BEND, WA**

Site 1 of 2 in cluster BZ

<table>
<thead>
<tr>
<th>Actual:</th>
<th>504 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focus Map:</strong></td>
<td><strong>18</strong></td>
</tr>
</tbody>
</table>

**UIC:**  
- Name: CEDAR VILLAGE 4 (D90865)  
- Address: 43910 SE 143RD STREET  
- City, State, Zip: NORTH BEND, WA  
- Site Number: 19764  
- Owner Name: King County WLRD DSS Cedar Village 4 (D90865)  
- Well Status: Active  
- EPA Well Type: 5H1 - Stormwater  
- Latitude: 47.470556  
- Longitude: 121.753333  
- Well Name: 14134  
- Registration Type: Municipal Stormwater  
- Construction Date: 12/24/1984  
- Construction Type: Infiltration trench with perforated pipe  
- Depth: 2

### 339

**KING CNTY SHORT PLAT 385058 (D9132)**  
**43610 SE 143RD PLACE**  
**NORTH BEND, WA**

**UIC:**  
- Name: KING CNTY SHORT PLAT 385058 (D9132)  
- Address: 43610 SE 143RD PLACE  
- City, State, Zip: WA  
- Site Number: 19773  
- Owner Name: King County WLRD DSS King Cnty Short Plat 385058 (D9132)  
- Well Status: Active  
- EPA Well Type: 5H1 - Stormwater  
- Latitude: 47.470833  
- Longitude: 121.757222  
- Well Name: 14143  
- Registration Type: Municipal Stormwater  
- Construction Date: 07/28/1988  
- Construction Type: Other  
- Depth: 2

### CA340

**TANNER ELECTRIC COOPERATIVE**  
**45710 SE NORTH BEND WAY PO BOX 1426**  
**NORTH BEND, WA 98045**

Site 1 of 6 in cluster CA

<table>
<thead>
<tr>
<th>Actual:</th>
<th>617 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Focus Map:</strong></td>
<td><strong>19</strong></td>
</tr>
</tbody>
</table>
TANNER ELECTRIC COOPERATIVE (Continued)  

Facility ID: 97225144  
Site Id: 110  
UBI: Not reported  
Phone Number: Not reported  
Decimal Latitude: 47.46991  
Decimal Longitude: -121.72789  

Tank Name: 1  
Tag Number: Not reported  
Tank Status: Removed  
Tank Status Date: 08/06/1996  
Tank Install Date: 12/31/1964  
Tank Closure Date: Not reported  
Capacity Range: 111 TO 1,100 Gallons  
Tank Permit Expiration Date: Not reported  
Tank Upgrade Date: Not reported  
Tank Spill Prevention: Not reported  
Tank Overfill Prevention: Not reported  
Tank Material: Steel  
Tank Construction: Double Wall Tank  
Tank Tightness Test: Not reported  
Tank Corrosion Protection: Not reported  
Tank Manifold: Not reported  
Tank Release Detection: Not reported  
Tank SFC Type: Not reported  
Pipe Material: Steel  
Pipe Construction: Not reported  
Pipe Primary Release Detection: Not reported  
Pipe Second Release Detection: Not reported  
Pipe Corrosion Protection: Not reported  
Pipe Pumping System: Not reported  
Responsible Unit: Northwest  
Dispenser/Pump SFC Type: Not reported  

ALL SITES:  

Name: TANNER ELECTRIC COOPERATIVE  
Facility Id: 97225144  
Interaction: 75246  
Interaction 1: I  
Interaction 2: HWG  
Ecology Program: HAZWASTE  
Program Data: TURBOWASTE  
Facility Alt.: Not reported  
Program ID: WAD010208597  
Date Interaction: 1992-08-28 00:00:00  
Date Interaction 3: Hazardous Waste Generator  
Latitude: 47.46990432399998  
Longitude: -121.72787523700001  

Interaction: 75247  
Interaction 1: I  
Interaction 2: UST  
Ecology Program: TOXICS  
Program Data: UST  
Facility Alt.: Not reported
TANNER ELECTRIC Cooperative (Continued)

Program ID: 110
Date Interaction: 2000-02-29 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.46990432399998
Longitude: -121.72787523700001

Interaction: 75248
Interaction 1: 
Interaction 2: HWOTHER
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAD010206597
Date Interaction: 2003-12-31 00:00:00
Date Interaction 3: Haz Waste Management Act
Latitude: 47.46990432399998
Longitude: -121.72787523700001

CA341 TANNER ELECTRIC COOP FTTS 1010010484
Target 45710 SE N BEND HWY N/A
Property NORTH BEND, WA 98045

Site 2 of 6 in cluster CA

Actual: 617 ft.
Focus Map: 19

FTTS:
Case Number: Not reported
Docket Number: 1088-08-28-2615
Complaint Issue Date: 09/15/88
Abatement Amount: 0.0000
Proposed Penalty: 14500.0000
Final Assessment: 3273.0000
Final Order Date: 12/15/88
Close Date: / / 
Violations(s): PCB, Failure to Maintain Records
PCB, Use
PCB, Label or Marking

CA342 TANNER ELECTRIC COOP HIST FTTS 1008190581
Target 45710 SE NORTH BEND WAY N/A
Property NORTH BEND, WA 98045

Site 3 of 6 in cluster CA

Actual: 617 ft.
Focus Map: 19

HIST FTTS INSPI:
Inspection Number: 19880322WA003 2
Region: 10
Inspection Date: Not reported
Inspector: MAULE
Violation occurred: Yes
Investigation Type: Section 6 PCB State Conducted
Investigation Reason: Neutral Scheme, Region
Legislation Code: TSCA
Facility Function: User
Site 4 of 6 in cluster CA

**CA343**

**Target**: TANNER ELECTRIC COOP  
**Property**: 45710 SE N BEND HWY  
**Property**: NORTH BEND, WA 98045

**Focus Map**: 19

**Actual**: 617 ft.

**Site 4 of 6 in cluster CA**

**HIST FTTS**:  
- **Case Number**: Not reported  
- **Docket Number**: 1088-08-28-2615  
- **Complaint Issue Date**: 09/15/1988  
- **Abatement Amount**: 0.0000  
- **Final Assessment**: 3273.0000  
- **Final Order Date**: 12/15/1988  
- **Close Date**: / /  
- **Violations(s)**:  
  - PCB, Failure to Maintain Records  
  - PCB, Use  
  - PCB, Label or Marking

---

**CA344**

**Target**: TANNER ELECTRIC COOPERATIVE  
**Property**: 45710 SE NORTH BEND WAY  
**Property**: NORTH BEND, WA 98045

**Focus Map**: 19

**Actual**: 617 ft.

**Site 5 of 6 in cluster CA**

**RCRA NonGen / NLR**:  
- **Case Number**: Not reported  
- **Docket Number**: 1000838077  
- **Complaint Issue Date**: 0.0000  
- **Proposed Penalty**: 3273.0000  
- **Final Assessment**: 12/15/1988  
- **Final Order Date**: 2005-04-01 00:00:00.0  
- **Close Date**: / /  
- **Violations(s)**:  
  - PCB, Failure to Maintain Records  
  - PCB, Use  
  - PCB, Label or Marking

---

**Owner/Operator Summary**:  
- **Owner/operator name**: TANNER ELECTRIC COOP  
- **Owner/operator address**: PO BOX 1426  
  
**Handler**: Non-Generators do not presently generate hazardous waste
TANNER ELECTRIC COOPERATIVE (Continued)

Owner/operator address: PO BOX 1426
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-0623
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: TANNER ELECTRIC COOP
Owner/operator address: PO BOX 1426
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-0623
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 1996-05-02 00:00:00.
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency:2005-03-31 00:00:00.0
Site name: TANNER ELECTRIC COOPERATIVE
Classification: Not a generator, verified

Date form received by agency:2005-03-31 00:00:00.0
Site name: TANNER ELECTRIC COOPERATIVE
Classification: Not a generator, verified

Date form received by agency:2005-03-31 00:00:00.0
Site name: TANNER ELECTRIC COOPERATIVE
Classification: Not a generator, verified

Date form received by agency:2004-05-14 00:00:00.0
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Not a generator, verified |
| Date form received by agency: | 2003-12-31 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Not a generator, verified |
| Date form received by agency: | 2003-01-17 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Not a generator, verified |
| Date form received by agency: | 2002-01-11 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Not a generator, verified |
| Date form received by agency: | 2000-12-06 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Not a generator, verified |
| Date form received by agency: | 1999-12-16 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Not a generator, verified |
| Date form received by agency: | 1999-01-07 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Not a generator, verified |
| Date form received by agency: | 1998-02-25 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Not a generator, verified |
| Date form received by agency: | 1997-03-12 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Conditionally Exempt Small Quantity Generator |
| Date form received by agency: | 1996-03-01 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Large Quantity Generator |
| Date form received by agency: | 1996-02-29 00:00:00.0 |
| Site name: | TANNER ELECTRIC COOPERATIVE |
| Classification: | Large Quantity Generator |

Violation Status: No violations found

FINDS:
Registry ID: 110000827767
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110000827767

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
NCDB (National Compliance Data Base) supports implementation of the
TANNER ELECTRIC COOPERATIVE (Continued)

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000838077
Registry ID: 110000827767
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110000827767

CA345 TANNER ELECTRIC COOP
Target 45710 SE NORTH BEND WAY
Property NORTH BEND, WA 98045

Site 6 of 6 in cluster CA

Actual: 617 ft.
Focus Map: 19

FTTS INSPI:
Inspection Number: 19880322WA003 2
Region: 10
Inspection Date: 03/22/88
Inspector: MAULE
Violation occurred: Yes
Investigation Type: Section 6 PCB State Conducted
Investigation Reason: Neutral Scheme, Region
Legislation Code: TSCA
Facility Function: User

BZ346 CEDAR VILLAGE 4 (D90870)
Target 43911 SE 143RD STREET
Property NORTH BEND, WA

Site 2 of 2 in cluster BZ

Actual: 504 ft.
Focus Map: 18

Name: CEDAR VILLAGE 4 (D90870)
Address: 43911 SE 143RD STREET
City,State,Zip: NORTH BEND, WA
Site Number: 19765
Owner Name: King County WLRD DSS Cedar Village 4 (D90870)
Well Status: Active
EPA Well Type: 5H1 - Stormwater
Latitude: 47.470278
Longitude: 121.751944
Well Name: 14135
Registration Type: Municipal Stormwater
Construction Date: 12/24/1984
Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.
349  EASTBOUND INTERSTATE 90 MILEPOST 33  WA ALLSITES  S117450606
Target  EB I90 MP 33
Property  NORTH BEND, WA  98045

ALLSITES:
Name:  EASTBOUND INTERSTATE 90 MILEPOST 33
Facility Id:  8343

Focus Map:  19
Interaction:  110608
Interaction 1:  A
Interaction 2:  ENFORFNL
Ecology Program:  SPILLS
Program Data:  DMS
Facility Alt.:  Not reported
Program ID:  Not reported
Date Interaction:  2014-11-26 00:00:00
Date Interaction 3:  Enforcement Final
Latitude:  47.470104323999998
Longitude:  -121.730732237

CC350  CASCADE DIESEL TRUCK & RV REPAIR  FINDS  1016705148
Target  45830 SE NORTH BEND WAY
Property  NORTH BEND, WA  98045

Site 1 of 2 in cluster CC

Actual:  631 ft.
Focus Map:  19
Registry ID:  110056464339
Facility URL:  http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_
registry_id=110056464339

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

Click this hyperlink while viewing your computer to access additional FINDS: detail in the EDR Site Report.

CC351  CASCADE DIESEL TRUCK & RV REPAIR  WA ALLSITES  S110124013
Target  45830 SE NORTH BEND WAY
Property  NORTH BEND, WA  98045

Site 2 of 2 in cluster CC

Actual:  631 ft.
Focus Map:  19
Facility Id:  24812
Interaction:  89123
Interaction 1:  I
Interaction 2:  LSC
Ecology Program:  HAZWASTE
Program Data:  LSC
Facility Alt.:  Cascade Diesel Truck & RV Repair
Program ID:  Not reported
CASCADE DIESEL TRUCK & RV REPAIR (Continued)

Date Interaction: 2009-04-15 00:00:00
Date Interaction 3: Local Source Cntrl 7/09-3
Latitude: 47.470760323999997
Longitude: -121.728112237

352 WA ASBESTOS S125601568  
352 Target  44572 SE 144TH STREET  
Property NORTH BEND, WA  

ASBESTOS:

Name: Not reported
Address: 44572 SE 144TH STREET
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 317044#1079Affor408083
Notice Date: 08/28/2009
Start Date: 09/09/2009
Completion Date: 09/09/2009
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: Affordable Abatement, Inc (ABCN00001079)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
(Continued)

CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Muddled Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS : Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601224450
Notice type: Initial
Project Type: Sheet Vinyl
Supervisor: Ron Riedel
Supervisor Phone: Not reported
Certificate Status: EXPIRED
### Site 1 of 2 in cluster CD

**Actual:**
- **689 ft.**

**Focus Map:**
- **20**

**Environment:**
- **Environmental Interest/Information System:**
  Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.
  - US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

**ECHO:**
- **Envid:** 1015965053
- **Registry ID:** 110054615617

### Site 2 of 2 in cluster CD

**Actual:**
- **689 ft.**

**Focus Map:**
- **20**

**Interactions:**
- **Interaction:** 84969
- **Interaction 1:** I
- **Interaction 2:** CONSTSWGP
- **Ecology Program:** WATQUAL
- **Program Data:** WAR009888
- **Facility Alt.:** I90 NORTH BEND CORPORATE PARK
- **Program ID:** I90 NORTH BEND CORPORATE PARK
- **Date Interaction:** 2007-11-13 00:00:00
- **Date Interaction 3:** Construction SW GP
- **Latitude:** 47.46969432299999
- **Longitude:** -121.718985238
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<tr>
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<tr>
<td>Name:</td>
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SYSTEM TRANSPORT DIESEL SPILL 468TH AVE SE (Continued)

Facility Alt.: System Transport Diesel Spill 468th Ave SE
Program ID: Not reported
Date Interaction: 2012-02-10 00:00:00
Date Interaction 3: Independent Cleanup
Latitude: 47.469531920000001
Longitude: -121.71627581

CSCSL NFA:
Name: SYSTEM TRANSPORT DIESEL SPILL 468TH AVE SE
Address: NWC 468TH AVE SE & SE 144TH
City,State,Zip: NORTH BEND, WA 98045
Facility/Site Id: 13893
CS Id: 11833
NFA Date: 03/30/2012
Alternate Site Names: Not reported
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Diesel
Ground Water: Not reported
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.469537136
Longitude: -121.71627694
## MAP FINDINGS

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### KING CNTY DOT 468TH BRIDGE  (Continued) 1007371924

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<td>Mailing address:</td>
<td>201 S JACKSON ST MS KSC TR 0231 SEATTLE, WA 98104</td>
</tr>
<tr>
<td>Contact:</td>
<td>ERICK THOMPSON</td>
</tr>
<tr>
<td>Contact address:</td>
<td>201 S JACKSON ST MS KSC TR 0231 SEATTLE, WA 98104</td>
</tr>
<tr>
<td>Contact country:</td>
<td>US</td>
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<tr>
<td>Contact telephone:</td>
<td>206-296-8747</td>
</tr>
<tr>
<td>Contact email:</td>
<td><a href="mailto:ERICK.THOMPSON@METROKC.GOV">ERICK.THOMPSON@METROKC.GOV</a></td>
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<td>EPA Region:</td>
<td>10</td>
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<td>Classification:</td>
<td>Non-Generator</td>
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<tr>
<td>Description:</td>
<td>Handler: Non-Generators do not presently generate hazardous waste</td>
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### Owner/Operator Summary:

- **Owner/operator name:** KING CNTY DOT ROAD SERVICES DIV
- **Owner/operator address:** 201 S JACKSON ST MS KSC TR 0231 SEATTLE, WA 98104
- **Owner/operator country:** US
- **Owner/operator telephone:** 206-205-5222
- **Owner/operator email:** Not reported
- **Owner/operator fax:** Not reported
- **Owner/operator extension:** Not reported
- **Legal status:** Private
- **Owner/Operator Type:** Owner
- **Owner/Op start date:** Not reported
- **Owner/Op end date:** Not reported

- **Owner/operator name:** BELLAH, SAM
- **Owner/operator address:** 201 S JACKSON ST MS KSC TR 0231 SEATTLE, WA 98104
- **Owner/operator country:** US
- **Owner/operator telephone:** 206-423-1058
- **Owner/operator email:** Not reported
- **Owner/operator fax:** Not reported
- **Owner/operator extension:** Not reported
- **Legal status:** Private
- **Owner/Operator Type:** Operator
- **Owner/Op start date:** Not reported
- **Owner/Op end date:** Not reported

- **Owner/operator name:** KING CNTY DOT ROAD SERVICES DIV
- **Owner/operator address:** 201 S JACKSON ST MS KSC TR 0231 SEATTLE, WA 98104
- **Owner/operator country:** US
- **Owner/operator telephone:** 206-205-5222
- **Owner/operator email:** Not reported
- **Owner/operator fax:** Not reported
- **Owner/operator extension:** Not reported
- **Legal status:** Private
- **Owner/Operator Type:** Owner
- **Owner/Op start date:** 2005-01-01 00:00:00
- **Owner/Op end date:** Not reported

### Handler Activities Summary:
KING CNTY DOT 468TH BRIDGE  (Continued)

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2006-04-17 00:00:00.0
Site name: KING CNTY DOT 468TH BRIDGE
Classification: Not a generator, verified

Date form received by agency: 2006-04-17 00:00:00.0
Site name: KING CNTY DOT 468TH BRIDGE
Classification: Not a generator, verified

Date form received by agency: 2006-04-17 00:00:00.0
Site name: KING CNTY DOT 468TH BRIDGE
Classification: Not a generator, verified

Date form received by agency: 2005-03-09 00:00:00.0
Site name: KING CNTY DOT 468TH BRIDGE
Classification: Small Quantity Generator

Date form received by agency: 2005-01-01 00:00:00.0
Site name: KING CNTY DOT 468TH BRIDGE
Classification: Not a generator, verified

Date form received by agency: 2004-04-15 00:00:00.0
Site name: KING CNTY DOT 468TH BRIDGE
Classification: Large Quantity Generator

Hazardous Waste Summary:
- Waste code: D008
- Waste name: LEAD

- Waste code: WP02
- Waste name: Washington State Dangerous Persistent Waste containing Halogenated Organic Compounds (HOC) at a total concentration level of 0.01% to 1.0%.

Violation Status: No violations found

WA MANIFEST:
Name: KING CNTY DOT 468TH BRIDGE
Address: 468TH AVE SE CROSSING S FORK
City, State, Zip: NORTH BEND, WA 98045
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<th>Snoqualmie River SE of North Bend Cty</th>
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<td>EPA ID:</td>
<td>WAH0000023250</td>
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<td>Federal Waste Code Desc:</td>
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<td>Generator Marketing to Burner:</td>
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<td>Industrial Furnace:</td>
<td>No</td>
</tr>
<tr>
<td>Snifter Deferral:</td>
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</tr>
<tr>
<td>Universal Waste:</td>
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<td>Off-Specification:</td>
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<tr>
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<td>600461992</td>
</tr>
<tr>
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<td>Transportation</td>
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<tr>
<td>Mail Name:</td>
<td>King Cnty DOT Road Services Div</td>
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<tr>
<td>Mailing Address:</td>
<td>201 S Jackson St MS KSC TR 0231</td>
</tr>
<tr>
<td>Mailing City,State,Zip:</td>
<td>Seattle, WA 98104-3856</td>
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<tr>
<td>Legal Organization Name:</td>
<td>King Cnty DOT Road Services Div</td>
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<tr>
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</tr>
<tr>
<td>Legal Contact:</td>
<td>Not reported</td>
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<tr>
<td>Legal Address 2:</td>
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<tr>
<td>Legal City,State,Zip:</td>
<td>Seattle, WA 98104-3856</td>
</tr>
<tr>
<td>Legal Phone Number:</td>
<td>(206)205-5222</td>
</tr>
<tr>
<td>Legal Effective Date:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Land Organization Name:</td>
<td>King Cnty DOT Road Services Div</td>
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<tr>
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</tr>
<tr>
<td>Land Contact:</td>
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<tr>
<td>Land Address:</td>
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</tr>
<tr>
<td>Land City,State,Zip:</td>
<td>Seattle, WA 98104-3856</td>
</tr>
<tr>
<td>Land Phone Number:</td>
<td>(206)205-5222</td>
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<tr>
<td>Operator Organization Name:</td>
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<tr>
<td>Operator Organization Type:</td>
<td>County</td>
</tr>
<tr>
<td>Operator:</td>
<td>Sam Bellah</td>
</tr>
<tr>
<td>Operator Address:</td>
<td>201 S Jackson St MS KSC TR 0231</td>
</tr>
<tr>
<td>Operator Address 2:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Operator City,State,Zip:</td>
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</tr>
<tr>
<td>Operator Phone Number:</td>
<td>(206)423-1058</td>
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<td>Site Contact:</td>
<td>Sam Bellah</td>
</tr>
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<tr>
<td>Site Contact Address 2:</td>
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<tr>
<td>Site Contact City,State,Zip:</td>
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</tr>
<tr>
<td>Site Contact Phone Number:</td>
<td>(206)423-1058</td>
</tr>
<tr>
<td>Site Contact Email:</td>
<td><a href="mailto:sam.bellah@metrokc.gov">sam.bellah@metrokc.gov</a></td>
</tr>
</tbody>
</table>

TC5992688.2s Page 535
KING CNTY DOT 468TH BRIDGE (Continued)

Gen Status Code: XQG
Monthly Generation: No
Batch Generation: No
One Time Generation: No
Transport Own Waste: No
Transport Other Waste: No
Recycler Onsite: No
Transfer Facility: No
Other Exemption: Not reported
UW Battery Gen: No
Used Oil Transporter: No
Used Oil Transfer Facility: No
Used Oil Processor: No
Used Oil Refiner: No
Used Oil Fuel Marketer Directs Shipments: No
Used Oil Fuel Marketer Meets Specs: No
Site Contact Address 2: Not reported

359 NEW SKY LLC WA ALLSITES S116753386
South 12700 412TH AVE SE WA NPDES N/A
< 1/8 0.024 mi. NORTH BEND, WA 98045
127 ft.

Actual: 451 ft.

Focus Map: 17

Interaction: 109043
Interaction 1: A
Interaction 2: CONSTS WGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: New Sky LLC
Program ID: WAR302066
Date Interaction: 2014-06-02 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.490692906
Longitude: -121.791308671

NPDES:
Name: NEW SKY LLC
Address: 12700 412TH AVE SE
City, State, Zip: NORTH BEND, WA 98045
Facility Status: Not reported
Facility Type: Construction SW GP
Admin Region: Headquarters
Date Issued: 11/18/2015
Latitude: Not reported
Longitude: Not reported
 Permit ID: WAR302066
Permit Version: Not reported
Permit Status: Active
Permit SubStatus: Not reported
Ecology Contact: Not reported
WRIA: Not reported
NEW SKY LLC (Continued)  

Permit Expiration Date: 12/31/2020  
Effective Date: 01/01/2016  
Days to Expiration: -443  

CE360  
PETROCARD INC  
WA UST U003025165  
ESE 14420 468TH AVE SE  
< 1/8  
0.030 mi.  
160 ft.  
Site 1 of 3 in cluster CE  

Actual: 704 ft.  
Focus Map: 20  

Name: PETROCARD INC  
Address: 14420 468TH AVE SE  
City: NORTH BEND  
Zip: 98045  
Facility ID: 60598662  
Site Id: 101515  
UBI: Not reported  
Phone Number: Not reported  
Decimal Latitude: 47.4687999762599  
Decimal Longitude: -121.715607334994  

Tank Name: 1DIESEL  
Tag Number: A3922  
Tank Status: Operational  
Tank Status Date: 08/06/1996  
Tank Install Date: 11/11/1991  
Tank Closure Date: Not reported  
Capacity Range: 10,000 to 19,999 Gallons  
Tank Permit Expiration Date: 10/31/2020  
Tank Upgrade Date: 04/01/1998  
Tank Spill Prevention: Spill Bucket/Spill Box  
Tank Overfill Prevention: Overfill Alarm  
Tank Material: Steel Clad with Corrosion Resistant Composite  
Tank Construction: Double Wall Tank  
Tank Tightness Test: Not reported  
Tank Corrosion Protection: Corrosion Resistant  
Tank Manifold: Not reported  
Tank Release Detection: Interstitial Monitoring  
Tank SFC Type: Sump  
Pipe Material: Fiberglass  
Pipe Construction: Double Wall Pipe  
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)  
Pipe Second Release Detection: Interstitial Monitoring (or Sump Sensor)  
Pipe Corrosion Protection: Corrosion Resistant  
Pipe Pumping System: Pressurized System  
Responsible Unit: Northwest  
Dispenser/Pump SFC Type: Sump  

Name: PETROCARD INC  
Address: 14420 468TH AVE SE  
City: NORTH BEND  
Zip: 98045  

Tank Name: 2PREMIUM  
Tag Number: A3922  
Tank Status: Operational  
Tank Status Date: 08/06/1996  

TC5992688.2s Page 537
PETROCARD INC (Continued)

Tank Install Date: 11/11/1991
Tank Closure Date: Not reported
Capacity Range: 5,000 to 9,999 Gallons
Tank Permit Expiration Date: 10/31/2020
Tank Upgrade Date: 04/01/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Interstitial Monitoring
Tank SFC Type: Sump
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Interstitial Monitoring (or Sump Sensor)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispencer/Pump SFC Type: Sump

Name: PETROCARD INC
Address: 14420 468TH AVE SE
City: NORTH BEND
Zip: 98045

Tank Name: 3REG
Tag Number: A3922
Tank Status: Operational
Tank Status Date: 08/06/1996
Tank Install Date: 11/11/1991
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: 10/31/2020
Tank Upgrade Date: 04/01/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Steel Clad with Corrosion Resistant Composite
Tank Construction: Double Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Interstitial Monitoring
Tank SFC Type: Sump
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Interstitial Monitoring (or Sump Sensor)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispencer/Pump SFC Type: Sump

Name: PETROCARD INC
Address: 14420 468TH AVE SE
<table>
<thead>
<tr>
<th>Map ID</th>
<th>EDR ID Number</th>
<th>City</th>
<th>EDR Hist Auto</th>
<th>Notes</th>
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<tr>
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<td>NORTH BEND</td>
<td>PETROCARD INC</td>
<td>U003025165</td>
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</table>

**City:** NORTH BEND  
**Zip:** 98045  
**Tank Name:** 4REGUN  
**Tag Number:** A3922  
**Tank Status:** Operational  
**Tank Status Date:** 08/06/1996  
**Tank Install Date:** 11/11/1991  
**Tank Closure Date:** Not reported  
**Capacity Range:** 10,000 to 19,999 Gallons  
**Tank Permit Expiration Date:** 10/31/2020  
**Tank Upgrade Date:** 04/01/1998  
**Tank Spill Prevention:** Spill Bucket/Spill Box  
**Tank Overfill Prevention:** Overfill Alarm  
**Tank Material:** Steel Clad with Corrosion Resistant Composite  
**Tank Construction:** Double Wall Tank  
**Tank Tightness Test:** Not reported  
**Tank Corrosion Protection:** Corrosion Resistant  
**Tank Manifold:** Not reported  
**Tank Release Detection:** Interstitial Monitoring  
**Tank SFC Type:** Sump  
**Pipe Material:** Fiberglass  
**Pipe Construction:** Double Wall Pipe  
**Pipe Primary Release Detection:** Automatic Line Leak Detector (ALLD)  
**Pipe Second Release Detection:** Interstitial Monitoring (or Sump Sensor)  
**Pipe Corrosion Protection:** Corrosion Resistant  
**Pipe Pumping System:** Pressurized System  
**Responsible Unit:** Northwest  
**Dispenser/Pump SFC Type:** Sump
MAP FINDINGS

CE362 PETROCARD INC
ESE 14420 468TH AVE SE
< 1/8
0.030 mi.
160 ft. Site 3 of 3 in cluster CE
Actual: 704 ft.
Focus Map: 20

ALL SITES:
Name: EDGEWICK VILLAGE GAS & DELI
Facility Id: 60598662

Interaction: 54089
Interaction 1: A
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: PETROCARD INC
Program ID: 101515
Date Interaction: 1991-11-11 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.468793105000003
Longitude: -121.71561205899999

Interaction: 90754
Interaction 1: A
Interaction 2: ENFORFNL
Ecology Program: TOXICS
Program Data: DMS
Facility Alt.: Not reported
Program ID: Not reported
Date Interaction: 2008-03-20 00:00:00
Date Interaction 3: Enforcement Final
Latitude: 47.468793105000003
Longitude: -121.71561205899999

Interaction: 88577
Interaction 1: I
Interaction 2: LSC
Ecology Program: HAZWASTE
Program Data: LSC
Facility Alt.: EDGEWICK GAS & DELI
Program ID: Not reported
Date Interaction: 2009-05-28 00:00:00
Date Interaction 3: Local Source Cntrl 7/09-3
Latitude: 47.468793105000003
Longitude: -121.71561205899999

WA Financial Assurance 1:
Name: PETROCARD INC
Address: 14420 468TH AVE SE
City, State, Zip: NORTH BEND, WA 98045
DOE Site ID: 101515
Financial Resp Type: GREAT AMERICAN E&S INSURANCE CO
Inception Date: 11/28/2018
Expiration Date: 12/31/2019
Address 2: Not reported
Policy Number: BTA 9988946-07
<table>
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<th>Name:</th>
<th>PETROCARD INC</th>
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<tbody>
<tr>
<td>Address:</td>
<td>14420 468TH AVE SE</td>
</tr>
<tr>
<td>City, State, Zip:</td>
<td>NORTH BEND, WA 98045</td>
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<tr>
<td>DOE Site ID:</td>
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<td>Expiration Date:</td>
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Effective Date: | 11/28/2018 |
Liability Limit Type: | Not reported |
Compliance Method: | Not reported |
Proof of Responsibility Document Flag: | Not reported |
Retroactive Date: | Not reported |
Latitude: | 47.468799976 |
Longitude: | -121.71560733 |

Name: | PETROCARD INC |
Address: | 14420 468TH AVE SE |
City, State, Zip: | NORTH BEND, WA 98045 |
DOE Site ID: | 101515 |
Financial Resp Type: | GREAT AMERICAN E&S INSURANCE CO |
Inception Date: | 12/31/2015 |
Expiration Date: | 12/31/2018 |
Address 2: | Not reported |
Policy Number: | BTA-9988946-04 |
Effective Date: | 12/31/2015 |
Liability Limit Type: | Not reported |
Compliance Method: | Not reported |
Proof of Responsibility Document Flag: | Not reported |
Retroactive Date: | Not reported |
Latitude: | 47.468799976 |
Longitude: | -121.71560733 |

Name: | PETROCARD INC |
Address: | 14420 468TH AVE SE |
City, State, Zip: | NORTH BEND, WA 98045 |
DOE Site ID: | 101515 |
Financial Resp Type: | GREAT AMERICAN E&S INSURANCE CO |
Inception Date: | 12/31/2015 |
Expiration Date: | 12/31/2018 |
Address 2: | Not reported |
Policy Number: | BTA-9988946-05 |
Effective Date: | 12/31/2016 |
Liability Limit Type: | Not reported |
Compliance Method: | Not reported |
Proof of Responsibility Document Flag: | Not reported |
Retroactive Date: | Not reported |
Latitude: | 47.468799976 |
Longitude: | -121.71560733 |

Name: | PETROCARD INC |
Address: | 14420 468TH AVE SE |
City, State, Zip: | NORTH BEND, WA 98045 |
DOE Site ID: | 101515 |
Financial Resp Type: | GREAT AMERICAN E&S INSURANCE CO |
Inception Date: | 12/31/2015 |
Expiration Date: | 12/31/2018 |
Address 2: | Not reported |
Policy Number: | BTA-9988946-06 |
Effective Date: | 12/31/2017 |
Liability Limit Type: | Not reported |
Compliance Method: | Not reported |
Proof of Responsibility Document Flag: | Not reported |
Retroactive Date: | Not reported |
Latitude: | 47.468799976 |
PETROCARD INC (Continued)

Longitude: -121.71560733

GRAY CONSTRUCTION & MOBIL

363 South
< 1/8
171 ft.

Actual: 537 ft.

Focus Map: 19

2001 GRAY CONSTRUCTION & MOBIL Gasoline Service Stations
2002 GRAY CONSTRUCTION & MOBIL Gasoline Service Stations
2003 GRAY CONSTRUCTION & MOBIL Gasoline Service Stations
2004 GRAY CONSTRUCTION & MOBIL Gasoline Service Stations
2005 GRAY CONSTRUCTION & MOBIL Gasoline Service Stations

CASCADE AUTOVON COMPANY

CF364 South
< 1/8
319 ft.

Actual: 455 ft.

Focus Map: 17

LUST:

Name: CASCADE AUTOVON CO
Address: 12727 412TH AVE SE
City, State, Zip: NORTH BEND, WA 98045
Facility ID: 36296841
Lust Status Type: LUST - NFA
Cleanup Site ID: 8879
Cleanup Unit Type: Not reported
Process Type: Not reported
Cleanup Unit Name: CASCADE AUTOVON,CASCADE AUTOVON COMPANY
Response Section: Northwest
Release Date: 06/20/1991
Lust Date: 08/09/2018
Region: Northwest
Lust ID: 1040
UST ID: 97430
Contaminant Name: Petroleum-Diesel
Ground Water: Below Cleanup Levels
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4852674 / -121.79172

UST:

Name: CASCADE AUTOVON COMPANY
Address: 12727 412TH AVE SE
City: NORTH BEND
Zip: 98045
Facility ID: 36296841
Site Id: 97430
UBI: Not reported

UST:

Name: CASCADE AUTOVON COMPANY
Address: 12727 412TH AVE SE
City: NORTH BEND
Zip: 98045
Facility ID: 36296841
Site Id: 97430
UBI: Not reported
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<th>Tank Name</th>
<th>1 (NORTH)</th>
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<td>08/06/1996</td>
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<td>Tank Install Date</td>
<td>12/31/1964</td>
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<td>Tank Closure Date</td>
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<td>Capacity Range</td>
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<td>Tank Upgrade Date</td>
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<td>Tank Construction</td>
<td>Not reported</td>
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<td>Tank Corrosion Protection</td>
<td>Not reported</td>
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<td>Tank Manifold</td>
<td>Not reported</td>
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<td>Tank Release Detection</td>
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<td>Tank SFC Type</td>
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<td>Pipe Material</td>
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<td>Pipe Construction</td>
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<td>Pipe Second Release Detection</td>
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<td>Pipe Corrosion Protection</td>
<td>Not reported</td>
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<td>Pipe Pumping System</td>
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<tr>
<td>Responsible Unit</td>
<td>Not reported</td>
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<td>Dispenser/Pump SFC Type</td>
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</table>

Name: CASCADE AUTOVON COMPANY
Address: 12727 412TH AVE SE
City: NORTH BEND
Zip: 98045
CASCADe AUTOvON COMPANY (Continued)  U003029052

Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Responsible Unit: NorthWest
Dispencer/Pump SFC Type: Not reported

Name: CASCADE AUTOVON COMPANY
Address: 12727 412TH AVE SE
City: NORTH BEND
Zip: 98045

Tank Name: 2 (SOUTH)
Tag Number: A3907
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 12/31/1964
Tank Capacity Range: Not reported
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Not reported
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Responsible Unit: NorthWest
Dispencer/Pump SFC Type: Not reported

ICR:
Date Ecology Received Report: 12/02/91
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 92-12
County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 04/20/92
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 92-23
CASCADE AUTOVON COMPANY (Continued)

County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 07/08/92
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 92-29
County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 10/02/92
Contaminants Found at Site: Petroleum products
Media Contaminated: Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 92-50
County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 01/28/93
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater, Soil
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 92-46
County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 03/28/94
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 93-23
County Code: 17
Contact: Not reported
Report Title: Not reported

Date Ecology Received Report: 05/10/95
Contaminants Found at Site: Petroleum products
Media Contaminated: Groundwater
Waste Management: Tank
Region: North Western
Type of Report Ecology Received: Interim cleanup report
Site Register Issue: 94-03
County Code: 17
Contact: Not reported
ALL SITES:

Name: CASCADE AUTOVON COMPANY  
Facility Id: 36296841

Interaction: 40512  
Interaction 1: U  
Interaction 2: TOXICS  
Program Data: UST  
Facility Alt.: Not reported  
Program ID: 97430  
Date Interaction: 2000-03-20 00:00:00  
Date Interaction 3: Underground Storage Tank  
Latitude: 47.485262587999998  
Longitude: -121.791703325

Interaction: 122982  
Interaction 1: U  
Interaction 2: VOLCLNST  
Ecology Program: TOXICS  
Program Data: ISIS  
Facility Alt.: Cascade Autovon Co  
Program ID: NW3098  
Date Interaction: 2016-10-27 00:00:00  
Date Interaction 3: Voluntary Cleanup Sites  
Latitude: 47.485262587999998  
Longitude: -121.791703325

Interaction: 104699  
Interaction 1: A  
Interaction 2: LUST  
Ecology Program: TOXICS  
Program Data: ISIS  
Facility Alt.: CASCADE AUTOVON  
Program ID: 97430  
Date Interaction: 1991-06-20 00:00:00  
Date Interaction 3: LUST Facility  
Latitude: 47.485262587999998  
Longitude: -121.791703325

CSCSL NFA:

Name: CASCADE AUTOVON CO  
Address: 12727 412TH AVE SE  
City, State, Zip: NORTH BEND, WA 98045  
Facility/Site Id: 36296841  
CS Id: 8879  
NFA Date: 08/09/2018  
Alternate Site Names: CASCADE AUTOVON,CASCADE AUTOVON COMPANY  
NFA Reason: NFA-Voluntary Cleanup Program Review  
Site Status: NFA  
Region: Northwest
CASCADE AUTOVON COMPANY

Contaminant Name: Petroleum-Diesel
Ground Water: Below Cleanup Levels
Surface Water: Not reported
Soil: Remediated-Below
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.485267448
Longitude: -121.79172768

CF365
CASCADEx AUTOVON CO
South 12727 412TH AVE SE
< 1/8 NORTH BEND, WA 98045
0.060 mi.
319 ft.
Site 2 of 2 in cluster CF
Actual:
Focus Map:
455 ft.
17

South 12727 412TH AVE SE
< 1/8 NORTH BEND, WA 98045
0.060 mi.
319 ft.
Site 2 of 2 in cluster CF
Actual:
Focus Map:
455 ft.
17

CG366
WARRIOR’S QUICK STOP 2
SSE 14500 468TH AVE SE
< 1/8 NORTH BEND, WA 98045
0.067 mi.
353 ft.
Site 1 of 2 in cluster CG
Actual:
Focus Map:
689 ft.
25

WARRIOR’S QUICK STOP 2
Name: 14500 468TH AVE SE
City: NORTH BEND
Zip: 98045
Facility ID: 2698893
Site Id: 394525
UBI: Not reported
Phone Number: Not reported
Decimal Latitude: 47.4681366732654
Decimal Longitude: -121.715646284669
Tank Name: 1
Tag Number: A1916
Tank Status: Operational
WARRIOR'S QUICK STOP 2 (Continued)

Tank Status Date: 01/22/2015
Tank Install Date: 03/20/1996
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: 03/31/2018
Tank Upgrade Date: 07/29/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Fiberglass Reinforced Plastic
Tank Construction: Double Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: WARRIOR'S QUICK STOP 2
Address: 14500 468TH AVE SE
City: NORTH BEND
Zip: 98045
WARRIOR'S QUICK STOP 2 (Continued)

Address: 14500 468TH AVE SE
City: NORTH BEND
Zip: 98045

Tank Name: 2
Tag Number: A1916
Tank Status: Operational
Tank Status Date: 01/22/2015
Tank Install Date: 03/20/1996
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: 03/31/2018
Tank Upgrade Date: 07/29/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Fiberglass Reinforced Plastic
Tank Construction: Double Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: WARRIOR'S QUICK STOP 2
Address: 14500 468TH AVE SE
City: NORTH BEND
Zip: 98045

Tank Name: 3
Tag Number: A1916
Tank Status: Operational
Tank Status Date: 01/22/2015
Tank Install Date: 03/20/1996
Tank Closure Date: Not reported
Capacity Range: 5,000 to 9,999 Gallons
Tank Permit Expiration Date: 03/31/2018
Tank Upgrade Date: 07/29/1998
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Fiberglass Reinforced Plastic
Tank Construction: Double Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Not reported
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
### WARRIOR'S QUICK STOP 2 (Continued)

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<th>CG367</th>
<th>KEN ROGERS</th>
<th>WA ALLSITES</th>
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<td>BP KENS GAS &amp; GROCERY</td>
<td>NORTH BEND, WA 98045</td>
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TC5992688.2s Page 550
KEN ROGERS (Continued)

SPILLS:

Name: WARRIOR QUICK STOP 2
Address: 14500 468TH AVE SE
City,State,Zip: NORTH BEND, WA
Facility ID: 656999
Medium: ROADWAY-PAVED
Material Desc: PETROLEUM - DIESEL FUEL
Material Qty: Not reported
Material Units: Not reported
Date Received: 05/26/2015
Contact Name: Not reported
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

Name: UNKNOWN
Address: 14500 468TH AVE SE
City,State,Zip: NORTH BEND, WA
Facility ID: 518933
Medium: Not reported
Material Desc: PETROLEUM - DIESEL FUEL
Material Qty: 2
Material Units: GALLON
Date Received: 06/20/2001
Contact Name: Not reported
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

WA Financial Assurance 1:
Name: WARRIOR'S QUICK STOP 2
Address: 14500 468TH AVE SE
City,State,Zip: NORTH BEND, WA 98045
DOE Site ID: 394525
Financial Resp Type: COLONY INSURANCE COMPANY
Inception Date: 03/18/2016
KEN ROGERS (Continued)  
Expiration Date: 04/02/2017  
Address 2: Not reported  
Policy Number: WA642157-1  
Effective Date: 03/22/2016  
Liability Limit Type: Mktg, 1-100 tanks; 1m per occurrence, 1m aggregate  
Compliance Method: Approved pollution liability insurance  
Proof of Responsibility Document Flag: 1  
Retroactive Date: 04/02/2015  
Latitude: 47.468136673  
Longitude: -121.71564628

Name: WARRIOR’S QUICK STOP 2  
Address: 14500 468TH AVE SE  
City,State,Zip: NORTH BEND, WA 98045  
DOE Site ID: 394525  
Financial Resp Type: COLONY INSURANCE COMPANY  
Inception Date: 04/02/2017  
Expiration Date: 04/02/2018  
Address 2: Not reported  
Policy Number: WA642157-2  
Effective Date: 04/02/2017  
Liability Limit Type: Mktg, 1-100 tanks; 1m per occurrence, 1m aggregate  
Compliance Method: Approved pollution liability insurance  
Proof of Responsibility Document Flag: 1  
Retroactive Date: 04/02/2015  
Latitude: 47.468136673  
Longitude: -121.71564628

CH368  
East  
< 1/8  
0.089 mi.  
470 ft.  
Site 1 of 2 in cluster CH  
Actual: 746 ft.  
Focus Map: 20  
ALLSITES: GENIE TEREX STORAGE YARD  
Name: GENIE TEREX STORAGE YARD  
Facility Id: 15368

ASBESTOS:  
Name: Not reported  
Address: 46925 SE MIDDLE FORK RD  
City,State,Zip: NORTH BEND, WA  
Facility Type: Not reported  
Parent ID: Not reported  
Form ID: 134402#86104223  
Notice Date: 01/22/2019  
Start Date: 12/12/2018  
Completion Date: 01/21/2019  
Initial: Not reported  
Amended: Not reported  
On Hold: Not reported  
Off Hold: Not reported  
Emergency: Not reported  
Site Hours Start: Not reported  
Site Hours End: Not reported  
Sunday: Not reported  
Monday: Not reported
**GENIE TEREX STORAGE YARD (Continued)**

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GENIE TEREX STORAGE YARD (Continued)

HEPA Vacuum: Not reported
MANUAL METHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: 601725020
Region: 2
UBI: 134402#86104223
Notice type: Initial
Project Type: Other linear footage, Other Square Footage, Sheet Vinyl
Supervisor: Doug Walters (ABAS000034101) ACTIVE, Mike Guiley (2018016498A)
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 46925 SE MIDDLE FORK RD
City, State Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 134402#86104223
Notice Date: 01/21/2019
Start Date: 12/12/2018
Completion Date: 06/28/2019
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
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Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: THERMATECH NORTHWEST INC (LAKEWOOD) (ABCN00001210)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
GENIE TEREX STORAGE YARD (Continued)

Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
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Air Cell Pipe Insulation: Not reported
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Outdoors: Not reported
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Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
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Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
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Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
## GENIE TEREX STORAGE YARD (Continued)

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GENIE TEREX STORAGE YARD (Continued)  

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GENIE TEREX STORAGE YARD (Continued)

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Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Other linear footage, Other Square Footage, Sheet Vinyl
Supervisor: Doug Walters (ABAS00034101) ACTIVE, Mike Guiley (2018016498A)
Certificate Status: ACTIVE
Name: Not reported
Address: 46925 SE MIDDLE FORK RD
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 134402#86104223
Notice Date: 12/17/2018
Start Date: 12/12/2018
Completion Date: 12/21/2018
Initial: Not reported
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On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
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Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
GENIE TEREX STORAGE YARD (Continued)  

Friday: Not reported  
Saturday: Not reported  
Contractor ID: Not reported  
Phone: Not reported  
Job Site CAS: Not reported  
Project Form Email: Not reported  
Property Owner Name: Not reported  
Property Owner Agent: Not reported  
Property Owner Company: THERMATECH NORTHWEST INC (LAKEWOOD) (ABCN00001210)  
Property Owner Address: Not reported  
Property Owner City: Not reported  
Property Owner State: Not reported  
Property Owner Zip4: Not reported  
Property Owner Phone: Not reported  
Job Site Room: Not reported  
Facility Age: Not reported  
Facility Size: Not reported  
Facility Remodel: Not reported  
Facility Demo: Not reported  
Facility Repair: Not reported  
Facility Maint: Not reported  
Removed: Not reported  
Encapsulated: Not reported  
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Fireproofing: Not reported  
Popcorn Ceiling: Not reported  
CAB: Not reported  
Sheet Vinyl: Not reported  
Asbestos Paper: Not reported  
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VAT: Not reported  
Roofing: Not reported  
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Sq Ft Other Text: Not reported  
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Air Cell Pipe Insulation: Not reported  
Ducting Insulation: Not reported  
Cement Asbestos Pipe: Not reported  
Mudded Pipe Insulation: Not reported  
Duct Tape: Not reported  
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Lin Ft Other1 Text: Not reported  
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Lin Ft Other2 Text: Not reported  
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Glove Bag: Not reported  
Mini Enclosure: Not reported  
Critical Barriers: Not reported  
Wrap And Cut: Not reported  
Wet Methods: Not reported  
HEPA Vacuum: Not reported  
MANUALMETHODS: Not reported  
Other CM1: Not reported
GENIE TEREX STORAGE YARD (Continued)

Other CM1 Text: Not reported
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Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
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Type C Pressure: Not reported
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Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Other linear footage, Other Square Footage, Sheet Vinyl
Supervisor: Doug Walters (ABAS00034101) ACTIVE, Mike Guiley (2018016498A)
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 46925 SE MIDDLE FORK RD
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 134402#86104223
Notice Date: 12/13/2018
Start Date: 12/12/2018
Completion Date: 12/21/2018
Initial: Not reported
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Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: THERMATECH NORTHWEST INC (LAKEWOOD) (ABCN00001210)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip: Not reported
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Job Site Room: Not reported
GENIE TEREX STORAGE YARD  (Continued)  

Facility Age:  Not reported  
Facility Size:  Not reported  
Facility Remodel:  Not reported  
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Quantity Sq Ft:  Not reported  
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Popcorn Ceiling:  Not reported  
CAB:  Not reported  
Sheet Vinyl:  Not reported  
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Boiler Insulation:  Not reported  
Duct Paper:  Not reported  
VAT:  Not reported  
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Sq Ft Other Text:  Not reported  
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Air Cell Pipe Insulation:  Not reported  
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Cement Asbestos Pipe:  Not reported  
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Glove Bag:  Not reported  
Mini Enclosure:  Not reported  
Critical Barriers:  Not reported  
Wrap And Cut:  Not reported  
Wet Methods:  Not reported  
HEPA Vacuum:  Not reported  
MANUALMETHODS  Not reported  
Other CM1:  Not reported  
Other CM1 Text:  Not reported  
Other CM2:  Not reported  
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Half Mask APR:  Not reported  
Full Face APR:  Not reported  
PAPR:  Not reported  
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Type C Pressure:  Not reported  
Other Resp Pro:  Not reported  
Other Resp Pro Text:  Not reported  
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Date Time Submitted:  Not reported  
Submitter IP Address:  Not reported  
Region:  2  
UBI:  601725020
GENIE TEREX STORAGE YARD (Continued)

Notice type: Initial
Project Type: Other linear footage, Other Square Footage, Sheet Vinyl
Supervisor: Doug Walters (ABAS00034101) ACTIVE, Mike Guiley (2018016498A)
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 46925 SE MIDDLE FORK RD
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 134402#86104223
Notice Date: 12/13/2018
Start Date: 12/12/2018
Completion Date: 12/21/2018
Initial: Not reported
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Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: THERMATECH NORTHWEST INC (LAKEWOOD) (ABCN00001210)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
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Facility Remodel: Not reported
Facility Demo: Not reported
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Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
GENIE TEREX STORAGE YARD  (Continued)

Duct Paper: Not reported
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Wrap And Cut: Not reported
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MANUALMETHODS : Not reported
Other CM1: Not reported
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PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
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Other Resp Pro Text: Not reported
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Submitter IP Address: Not reported
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UBI: 601725020
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Project Type: Other linear footage, Other Square Footage, Sheet Vinyl
Supervisor: Doug Walters (ABAS00034101) ACTIVE, Mike Guiley (2018016498A)
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 46925 SE MIDDLE FORK RD
City, State, Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 134402#86104223
Notice Date: 12/12/2018
Start Date: 12/21/2018
Completion Date: 12/21/2018
**GENIE TEREX STORAGE YARD (Continued)**

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GENIE TEREX STORAGE YARD (Continued)

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- Outdoors: Not reported
- Neg Pres Enclosure: Not reported
- Glove Bag: Not reported
- Mini Enclosure: Not reported
- Critical Barriers: Not reported
- Wrap And Cut: Not reported
- Wet Methods: Not reported
- HEPA Vacuum: Not reported
- MANUALMETHODS: Not reported
- Other CM1: Not reported
- Other CM1 Text: Not reported
- Other CM2: Not reported
- Other CM2 Text: Not reported
- Half Mask APR: Not reported
- Full Face APR: Not reported
- PAPR: Not reported
- Type C Continuous: Not reported
- Type C Pressure: Not reported
- Other Resp Pro: Not reported
- Other Resp Pro Text: Not reported
- Comments: Not reported
- Date Time Submitted: Not reported
- Submitter IP Address: Not reported
- Region: 2
- UBT: 601725020
- Notice type: Initial
- Project Type: Other linear footage, Other Square Footage, Sheet Vinyl
- Supervisor: Doug Walters (ABAS00034101) ACTIVE, Mike Guiley (2018016498A)
- Supervisor Phone: Not reported
- Certificate Status: ACTIVE

- Name: Not reported
- Address: 46925 SE MIDDLE FORK RD
- City, State, Zip: NORTH BEND, WA
- Facility Type: Not reported
- Parent ID: Not reported
- Form ID: 134402#86104223
- Notice Date: 12/05/2018
- Start Date: 12/12/2018
- Completion Date: 12/21/2018
- Initial: Not reported
- Amended: Not reported
- On Hold: Not reported
- Off Hold: Not reported
- Emergency: Not reported
- Site Hours Start: Not reported
- Site Hours End: Not reported
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- Monday: Not reported
- Tuesday: Not reported
- Wednesday: Not reported
- Thursday: Not reported
- Friday: Not reported
- Saturday: Not reported
- Contractor ID: Not reported
GENIE TEREX STORAGE YARD (Continued)

Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: THERMATECH NORTHWEST INC (LAKEWOOD) (ABCN00001210)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
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Quantity Lin Ft: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
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Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS: Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
GENIE TEREX STORAGE YARD (Continued) S118759065

Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Other linear footage, Other Square Footage, Sheet Vinyl
Supervisor: Doug Walters (ABAS00034101) ACTIVE, Mike Guiley (2018016498A)
Supervisor Phone: Not reported
Certificate Status: ACTIVE

Name: Not reported
Address: 46925 SE MIDDLE FORK RD
City,State,Zip: NORTH BEND, WA
Facility Type: Not reported
Parent ID: Not reported
Form ID: 134402#86104223
Notice Date: 11/27/2018
Start Date: 12/07/2018
Completion Date: 12/21/2018
Initial: Not reported
Amended: Not reported
On Hold: Not reported
Off Hold: Not reported
Emergency: Not reported
Site Hours Start: Not reported
Site Hours End: Not reported
Sunday: Not reported
Monday: Not reported
Tuesday: Not reported
Wednesday: Not reported
Thursday: Not reported
Friday: Not reported
Saturday: Not reported
Contractor ID: Not reported
Phone: Not reported
Job Site CAS: Not reported
Project Form Email: Not reported
Property Owner Name: Not reported
Property Owner Agent: Not reported
Property Owner Company: THERMATECH NORTHWEST INC (LAKEWOOD) (ABCN00001210)
Property Owner Address: Not reported
Property Owner City: Not reported
Property Owner State: Not reported
Property Owner Zip4: Not reported
Property Owner Phone: Not reported
Job Site Room: Not reported
Facility Age: Not reported
Facility Size: Not reported
Facility Remodel: Not reported
GENIE TEREX STORAGE YARD (Continued)  S118759065

Facility Demo: Not reported
Facility Repair: Not reported
Facility Maint: Not reported
Removed: Not reported
Encapsulated: Not reported
Quantity Sq Ft: Not reported
Fireproofing: Not reported
Popcorn Ceiling: Not reported
CAB: Not reported
Sheet Vinyl: Not reported
Asbestos Paper: Not reported
Boiler Insulation: Not reported
Duct Paper: Not reported
VAT: Not reported
Roofing: Not reported
Sq Ft Other: Not reported
Sq Ft Other Text: Not reported
Mag Pipe Insulation: Not reported
Air Cell Pipe Insulation: Not reported
Ducting Insulation: Not reported
Cement Asbestos Pipe: Not reported
Muddled Pipe Insulation: Not reported
Duct Tape: Not reported
Lin Ft Other1: Not reported
Lin Ft Other1 Text: Not reported
Lin Ft Other2: Not reported
Lin Ft Other2 Text: Not reported
Indoors: Not reported
Outdoors: Not reported
Neg Pres Enclosure: Not reported
Glove Bag: Not reported
Mini Enclosure: Not reported
Critical Barriers: Not reported
Wrap And Cut: Not reported
Wet Methods: Not reported
HEPA Vacuum: Not reported
MANUALMETHODS Not reported
Other CM1: Not reported
Other CM1 Text: Not reported
Other CM2: Not reported
Other CM2 Text: Not reported
Half Mask APR: Not reported
Full Face APR: Not reported
PAPR: Not reported
Type C Continuous: Not reported
Type C Pressure: Not reported
Other Resp Pro: Not reported
Other Resp Pro Text: Not reported
Comments: Not reported
Date Time Submitted: Not reported
Submitter IP Address: Not reported
Region: 2
UBI: 601725020
Notice type: Initial
Project Type: Other linear footage, Other Square Footage, Sheet Vinyl
Supervisor: Doug Walters (ABAS00034101) ACTIVE, Mike Guiley (2018016498A)
GENIE TEREX STORAGE YARD (Continued)

Supervisor Phone: Not reported
Certificate Status: ACTIVE

NPDES:
Name: GENIE/TEREX STORAGE YARD
Address: 46925 SE MIDDLE FORK RD
City, State, Zip: NORTH BEND, WA 98045
Facility Status: Not reported
Facility Type: Construction SW GP
Admin Region: Headquarters
Date Issued: 11/18/2015
Latitude: Not reported
Longitude: Not reported
Permit ID: WAR304288
Permit Status: Active
Permit Version: Not reported
Permit SubStatus: Not reported
Ecology Contact: Not reported
WRIA: Not reported
Permit Expiration Date: 12/31/2020
Effective Date: 08/01/2016
Days to Expiration: -443

---

CH369 DVST INC
East 46925 SE MIDDLE FORK RD
< 1/8
0.089 mi.
470 ft.
Site 2 of 2 in cluster CH
Actual: 746 ft.
Focus Map:
20

Year: Name: Type:
1996 RONS AUTO SERVICE General Automotive Repair Shops
1997 RONS AUTO SERVICE General Automotive Repair Shops
1998 RONS AUTO SERVICE General Automotive Repair Shops
1999 RONS AUTO SERVICE General Automotive Repair Shops
2000 RONS AUTO SERVICE General Automotive Repair Shops
2001 RONS AUTO SERVICE General Automotive Repair Shops
2002 RONS AUTO SERVICE General Automotive Repair Shops
2012 RONS AUTO SERVICE General Automotive Repair Shops
2013 RONS AUTO SERVICE General Automotive Repair Shops
2014 RONS AUTO SERVICE General Automotive Repair Shops

---

370 SOUTH BEND CITYRIBARY CRK STABILIZATION
South E RIBARY WAY
< 1/8
0.094 mi.
494 ft.
Actual: 462 ft.
Focus Map:
17

ALLSITES:
Name: NORTH BEND CITYRIBARY CRK STABILIZATION
Facility Id: 2002431
Interaction: 9694
Interaction 1: A
Interaction 2: SEAPROJ

---

S118759065
EDR Hist Auto 1021365317
N/A
EDR Hist Auto

MAP FINDINGS
NORTH BEND CITYRIBARY CRK STABILIZATION  (Continued)  

<table>
<thead>
<tr>
<th>Ecology Program:</th>
<th>SEA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Data:</td>
<td>AQUATICS</td>
</tr>
<tr>
<td>Facility Alt.:</td>
<td>Not reported</td>
</tr>
<tr>
<td>Program ID:</td>
<td>200700247</td>
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<tr>
<td>Date Interaction:</td>
<td>2007-05-02 00:00:00</td>
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<tr>
<td>Date Interaction 3:</td>
<td>SEA Project Site</td>
</tr>
<tr>
<td>Latitude:</td>
<td>47.486200975999999</td>
</tr>
<tr>
<td>Longitude:</td>
<td>-121.797307828</td>
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</tbody>
</table>

Interaction: 9695  
Interaction 1: A  
Interaction 2: NONENFNL  
Ecology Program: SEA  
Program Data: DMS  
Facility Alt.: Not reported  
Program ID: Not reported  
Date Interaction: 2007-05-03 00:00:00  
Date Interaction 3: Non Enforcement Final  
Latitude: 47.486200975999999  
Longitude: -121.797307828  

FINDS:  
Registry ID: 110036136428  
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_registry_id=110036136428  

Environmental Interest/Information System:  
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.  
Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

CI371 AT&T CORP 412TH RCRA NonGen / NLR 1001969785  
South 12805 412TH AVE SE FINDS WAT540012580  
< 1/8 NORTH BEND, WA 98045 ECHO  
0.095 mi.  
500 ft.  Site 1 of 2 in cluster Cl  
Actual: 455 ft.  
Focus Map: 17  
RCRA NonGen / NLR:  
Date form received by agency: 2004-03-05 00:00:00.0  
Facility name: AT&T CORP 412TH  
Facility address: 12805 412TH AVE SE NORTH BEND, WA 98045  
EPA ID: WAT540012580  
Mailing address: 1905 ASTON AVE CARLSBAD, WA 92008  
Contact: JEFF KACIREK  
Contact address: 1905 ASTON AVE CARLSBAD, CA 92008  
Contact country: US  
Contact telephone: 760-602-8700  
Telephone ext.: 8213
**AT&T CORP 412TH** (Continued)

**Contact email:** Not reported  
**EPA Region:** 10  
**Classification:** Non-Generator  
**Description:** Handler: Non-Generators do not presently generate hazardous waste

### Owner/Operator Summary

- **Owner/operator name:** ROMANO, PEGGY  
- **Owner/operator address:** 15008 8TH AVE SW SEATTLE, WA 98166  
- **Owner/operator country:** US  
- **Owner/operator telephone:** 206-431-1250  
- **Owner/operator email:** Not reported  
- **Owner/operator fax:** Not reported  
- **Owner/operator extension:** Not reported  
- **Legal status:** Private  
- **Owner/Operator Type:** Operator  
- **Owner/Op start date:** Not reported  
- **Owner/Op end date:** Not reported

- **Owner/operator name:** AT T CORP  
- **Owner/operator address:** 295 MAPLE AVE BASKING RIDGE, NJ 07920  
- **Owner/operator country:** US  
- **Owner/operator telephone:** 201-645-4113  
- **Owner/operator email:** Not reported  
- **Owner/operator fax:** Not reported  
- **Owner/operator extension:** Not reported  
- **Legal status:** Private  
- **Owner/Operator Type:** Owner  
- **Owner/Op start date:** 1997-07-07 00:00:00.  
- **Owner/Op end date:** Not reported

- **Owner/operator name:** AT T CORP  
- **Owner/operator address:** 295 MAPLE AVE BASKING RIDGE, NJ 07920  
- **Owner/operator country:** US  
- **Owner/operator telephone:** 201-645-4113  
- **Owner/operator email:** Not reported  
- **Owner/operator fax:** Not reported  
- **Owner/operator extension:** Not reported  
- **Legal status:** Private  
- **Owner/Operator Type:** Owner  
- **Owner/Op start date:** Not reported  
- **Owner/Op end date:** Not reported

### Handler Activities Summary

- **U.S. importer of hazardous waste:** No  
- **Mixed waste (haz. and radioactive):** No  
- **Recycler of hazardous waste:** No  
- **Transporter of hazardous waste:** No  
- **Treater, storer or disposer of HW:** No  
- **Underground injection activity:** No  
- **On-site burner exemption:** No  
- **Furnace exemption:** No  
- **Used oil fuel burner:** No  
- **Used oil processor:** No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2004-03-04 00:00:00.0
Site name: AT&T CORP 412TH
Classification: Not a generator, verified

Date form received by agency: 2003-12-31 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Not a generator, verified

Date form received by agency: 2003-09-08 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Not a generator, verified

Date form received by agency: 2002-03-05 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Not a generator, verified

Date form received by agency: 2001-03-05 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2000-03-02 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Not a generator, verified

Date form received by agency: 1999-02-23 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1998-11-02 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1997-07-07 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 1997-07-07 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Not a generator, verified

Date form received by agency: 1996-02-27 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Not a generator, verified

Date form received by agency: 1996-02-26 00:00:00.0
Site name: AT&T CORP 112TH
Classification: Conditionally Exempt Small Quantity Generator

Violation Status: No violations found
Environmental Interest/Information System:

Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1001969785
Registry ID: 110005407354
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110005407354
## NORTH BEND B530350/NBNDWA01 (Continued)

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Tank Construction</td>
<td>Single Wall Tank</td>
</tr>
<tr>
<td>Tank Tightness Test</td>
<td>Not reported</td>
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<tr>
<td>Tank Corrosion Protection</td>
<td>Not reported</td>
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<tr>
<td>Tank Manifold</td>
<td>Not reported</td>
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<tr>
<td>Tank Release Detection</td>
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<tr>
<td>Tank SFC Type</td>
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<td>Pipe Material</td>
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<td>Pipe Construction</td>
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<td>Pipe Primary Release Detection</td>
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<tr>
<td>Pipe Second Release Detection</td>
<td>Not reported</td>
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<tr>
<td>Pipe Corrosion Protection</td>
<td>Not reported</td>
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<tr>
<td>Pipe Pumping System</td>
<td>Northwest</td>
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<tr>
<td>Responsible Unit</td>
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<tr>
<td>Dispenser/Pump SFC Type</td>
<td>Not reported</td>
</tr>
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</table>

- **Name:** NORTH BEND B530350/NBNDWA01
- **Address:** 12805 412TH AVE SE
- **City:** NORTH BEND
- **Zip:** 98045

- **Tank Name:** 2
- **Tag Number:** Not reported
- **Tank Status:** Removed
- **Tank Status Date:** 08/06/1996
- **Tank Install Date:** 12/31/1964
- **Tank Closure Date:** Not reported
- **Capacity Range:** 111 TO 1,100 Gallons
- **Tank Permit Expiration Date:** Not reported
- **Tank Upgrade Date:** Not reported
- **Tank Spill Prevention:** Not reported
- **Tank Overfill Prevention:** Not reported
- **Tank Material:** Not reported
- **Tank Construction:** Single Wall Tank
- **Tank Tightness Test:** Not reported
- **Tank Corrosion Protection:** Not reported
- **Tank Manifold:** Not reported
- **Tank Release Detection:** Not reported
- **Tank SFC Type:** Not reported
- **Pipe Material:** Not reported
- **Pipe Construction:** Not reported
- **Pipe Primary Release Detection:** Not reported
- **Pipe Second Release Detection:** Not reported
- **Pipe Corrosion Protection:** Not reported
- **Pipe Pumping System:** Not reported
- **Responsible Unit:** Northwest
- **Dispenser/Pump SFC Type:** Not reported

### ALL SITES:

<table>
<thead>
<tr>
<th>Name:</th>
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<tr>
<td>Facility Id:</td>
<td>56274392</td>
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<tr>
<td>Interaction:</td>
<td>51962</td>
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<tr>
<td>Interaction 1:</td>
<td>A</td>
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<tr>
<td>Interaction 2:</td>
<td>TIER2</td>
</tr>
<tr>
<td>Ecology Program:</td>
<td>HAZWASTE</td>
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<tr>
<td>Program Data:</td>
<td>EPCRA</td>
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<td>Facility Alt.:</td>
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</table>

TC5992688.2s Page 575
NORTH BEND B530350/NBNDWA01 (Continued)

Program ID: WAT540012580
Date Interaction: 1989-01-01 00:00:00
Date Interaction 3: Emergency/Haz Chem Rpt TI
Latitude: 47.487804330000003
Longitude: -121.79084522300001

Interaction: 51965
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAT540012580
Date Interaction: 2006-07-25 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.487804330000003
Longitude: -121.79084522300001

Interaction: 51964
Interaction 1: I
Interaction 2: HWOTHER
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAT540012580
Date Interaction: 2002-12-31 00:00:00
Date Interaction 3: Haz Waste Management Act
Latitude: 47.487804330000003
Longitude: -121.79084522300001

Interaction: 51963
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAT540012580
Date Interaction: 1997-07-07 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.487804330000003
Longitude: -121.79084522300001

Interaction: 51961
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAT540012580
Date Interaction: 1981-03-23 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.487804330000003
Longitude: -121.79084522300001
NORTH BEND B530350/NBNDWA01 (Continued) U001126213

Name: NORTH BEND B530350 NBNDWA01
Facility Id: 32493584

Interaction: 37949
Interaction 1: I
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 10117
Date Interaction: 2000-02-29 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.487618329
Longitude: -121.792046222

LOOP VEHICLE MAINTENANCE FACILITY WA ALLSITES S120845880 N/A

373 ESE < 1/8 0.115 mi. 607 ft.
NORTH BEND, WA 98045

Actual: 717 ft.
Focus Map: 20

ALLSITES:
Name: LOOP VEHICLE MAINTENANCE FACILITY
Facility Id: 18976

Interaction: 122851
Interaction 1: A
Interaction 2: CONSTSWP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: Loop Vehicle Maintenance Facility
Program ID: WAR305645
Date Interaction: 2017-06-21 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.468662397000003
Longitude: -121.713951288

SI VIEW METROPOLITAN PARK DISTRICT RCRA NonGen / NLR 1019910255
North 901 BENDIGO BLVD N WAH000051785
< 1/8 0.117 mi. 618 ft.
NORTH BEND, WA 98045
Site 1 of 2 in cluster CJ

Actual: 434 ft.
Focus Map: 12

RCRA NonGen / NLR:
Date form received by agency: 2018-03-16 00:00:00.0
Facility name: SI VIEW METROPOLITAN PARK DISTRICT
Facility address: 901 BENDIGO BLVD N
EPA ID: WAH000051785
Mailing address: PO BOX 346
Contact: TRAVIS STOMBAUGH
Contact address: PO BOX 346
SI VIEW METROPOLITAN PARK DISTRICT (Continued)

Owner/Operator Summary:
Owner/operator name: CITY OF NORTH BEND
Owner/operator address: PO BOX 896
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-1211
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: SI VIEW METROPOLITAN PARK DISTRICT
Owner/operator address: PO BOX 896
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 425-888-1211
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 2001-01-01 00:00:00.
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2018-03-15 00:00:00.0
Site name: SI VIEW METROPOLITAN PARK DISTRICT
Classification: Not a generator, verified
SI VIEW METROPOLITAN PARK DISTRICT (Continued)

Date form received by agency: 2017-02-07 00:00:00.0
Site name: SI VIEW METROPOLITAN PARK DISTRICT
Classification: Small Quantity Generator

Date form received by agency: 2016-10-21 00:00:00.0
Site name: SI VIEW METROPOLITAN PARK DISTRICT
Classification: Small Quantity Generator

Hazardous Waste Summary:

- Waste code: D006
- Waste name: CADMIUM

- Waste code: D008
- Waste name: LEAD

Violation Status: No violations found

WA MANIFEST:

Name: SI VIEW METROPOLITAN PARK DISTRICT
Address: 901 BENDIGO BLVD N
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 11539
EPA ID: WAH000051785
NAICS: 924120
State Waste Code Desc: Not reported
Federal Waste Code Desc: D006, D008
Form Comm: Not reported
Data Year: 2016
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
SI VIEW METROPOLITAN PARK DISTRICT (Continued)

Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 602303464
Business Type: Local Government
Mail Name: Si View Metropolitan Park District
Mailing Address: PO Box 346
Mailing City,State,Zip: North Bend, WA 98045
Legal Organization Name: Si View Metropolitan Park District
Legal Organization Type: Municipal
Legal Contact: Not reported
Legal Address: PO Box 896
Legal Address 2: Not reported
Legal City,State,Zip: North Bend, WA 98045
Legal Phone Number: 425-888-1211
Legal Effective Date: 01/01/2001
Land Organization Name: City of North Bend
Land Organization Type: Municipal
Land Contact: Not reported
Land Address: PO Box 896
Land City,State,Zip: North Bend, WA 98045
Land Phone Number: 425-888-1211
Operator Organization Name: Si View Metropolitan Park District
Operator Organization Type: Municipal
Operator: Not reported
Operator Address: PO Box 346
Operator Address 2: Not reported
Operator City,State,Zip: North Bend, WA 98045
Operator Phone Number: 425-831-1900
Operator Effective Date: 01/01/2009
Site Contact: Travis Stombaugh
Site Contact Address: PO Box 346
Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: 425-831-1900
Site Contact Email: tstombaugh@siviewpark.org
Gen Status Code: MQG
Monthly Generation: False
Batch Generation: False
One Time Generation: True
Transport Own Waste: False
Transport Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
SI VIEW METROPOLITAN PARK DISTRICT (Continued)

Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Waste Stream Generated:
Waste Managed Off Site: Y
State Only Waste Code 1: Not reported
State Only Waste Code 2: Not reported
Report Managed On Site: 0
KG Managed On Site: 0
Generator Treatment Code: Not reported
Permit By Rule Code: Not reported
WCDE Residence Code: Not reported
WCDH Origin Code: 1
WCDE On Site Code: Not reported
WCDB Code: W101
Description: Solids N.O.S Lead Cadmium
CORb Sequence Number: 158393
Sequence Number: 3412331
Mixed Radioactive Flag: False
Designation Code: D
Reported Quantity: 100
Quantity Unit: LB
Kilograms Quantity: 45.3600007
Density Number: Not reported
Density Quantity: Not reported

Waste Managed Off Site: Y
State Only Waste Code 1: Not reported
State Only Waste Code 2: Not reported
Report Managed On Site: 0
KG Managed On Site: 0
Generator Treatment Code: Not reported
Permit By Rule Code: Not reported
WCDE Residence Code: Not reported
WCDH Origin Code: 1
WCDE On Site Code: Not reported
WCDB Code: W101
Description: Liquid N.O.S Lead
CORb Sequence Number: 158393
Sequence Number: 3412328
Mixed Radioactive Flag: False
Designation Code: D
Reported Quantity: 1125
Quantity Unit: LB
Kilograms Quantity: 510.300008
Density Number: 0
Density Quantity: Not reported

Waste Stream Off Site Mgmt:
Waste CORB Sequence Number: 158393
Waste Sequence Number: 3412331
Sequence Number: 907117
Received EPAID: NVT3300010000
Managed Quantity: 100
Kilogram Quantity: 45.3600007
SI VIEW METROPOLITAN PARK DISTRICT (Continued)

- **Recycled Percentage:** Not reported
- **Waste Management System Code:** H132
- **Waste Sequence Number:** 3412328
- **Sequence Number:** 907116
- **Received EPAID:** NVT330010000
- **Managed Quantity:** 1125
- **Kilogram Quanity:** 510.300008
- **Recycled Percentage:** Not reported
- **Waste Management System Code:** H132

**Waste Stream Comments:**
- **CORB Waste Sequence Number:** 158393
- **Comments:** Lead paint was removed from the exterior of an historic farmhouse using water.
- **Waste Sequence Number:** 3412328
- **Sequence Number:** 1
- **Comments:** We removed lead paint from a Historic Farmhouse using water
- **Waste Sequence Number:** 3412331
- **Sequence Number:** 1

**Waste Stream EPA Code:**
- **CORB Waste Sequence Number:** 158393
- **Waste Sequence Number:** 3412328
- **Sequence Number:** 7897940
- **WCDA Code:** D008
- **Waste Sequence Number:** 3412331
- **Sequence Number:** 7897942
- **WCDA Code:** D006
- **Waste Sequence Number:** 3412331
- **Sequence Number:** 7897943
- **WCDA Code:** D008

**Waste Stream Source Code:**
- **CORB Waste Sequence Number:** 158393
- **Waste Sequence Number:** 3412328
- **Sequence Number:** 1
- **WCDD Code:** G19
- **Waste Sequence Number:** 3412331
- **Sequence Number:** 1
- **WCDD Code:** G19
376  TOLLGATE FARM PARK TRAIL  WA ALLSITES  S122511524
North 1/8-1/4 NORTH BEND, WA 98045
0.128 mi.  674 ft.
Actual:  432 ft.
Focus Map:  12

CK377  KENS TRUCK STOP  WA LUST S109524165
South 1/8-1/4 46630 SE NORTH BEND WAY NORTH BEND, WA 98045
0.132 mi.  695 ft.
Site 1 of 4 in cluster CK
Actual:  671 ft.
Focus Map:  25
KENS TRUCK STOP (Continued)

UST ID: 2885
Contaminant Name: Petroleum-Other
Ground Water: Not reported
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Lat/Long: 47.4681537 / -121.71822

SPILLS:
Name: SHELL GAS STATION
Address: 46630 NORTH BEND WY
City, State, Zip: NORTH BEND, WA
Facility ID: 624717
Medium: IMPERMEABLE CONTAINMENT
Material Desc: PETROLEUM - DIESEL FUEL
Material Qty: Not reported
Material Units: GALLON
Date Received: 01/26/2011
Contact Name: Not reported
Incident Date: Not reported
Incident Category Type: Not reported
Incident Category: Not reported
Latitude: Not reported
Longitude: Not reported
Source Type: Not reported
Source: Not reported
Vessel Facility Name2: Not reported
Recovered Quantity: Not reported
Resp Party Contact: Not reported
Cause: Not reported
Cause Type: Not reported
Resp Party Name: Not reported

TC5992688.2s Page 584
CK379  HPT TA PROPERTIES TRUST  WA UST  U004131370
South  46630 SE NORTH BEND WAY  N/A
1/8-1/4  NORTH BEND, WA  98045
0.132 mi.  Site 3 of 4 in cluster CK
695 ft.  Actual: 671 ft.
Focus Map: 25

TRAVEL CENTERS OF AMERICA N BEND (Continued)  S121970051

Interaction: 11376
Interaction 1: A
Interaction 2: ENFORFNL
Ecology Program: SPLILLS
Program Data: DMS
Facility Alt.: Not reported
Program ID: Not reported
Date Interaction: 2007-08-02 00:00:00
Date Interaction 3: Enforcement Final
Latitude: 47.467014671999998
Longitude: -121.718349227

MAP FINDINGS

MAP FINDINGS

MAP FINDINGS
### HPT TA PROPERTIES TRUST (Continued)

<table>
<thead>
<tr>
<th>Name: HPT TA PROPERTIES TRUST</th>
<th>Address: 46630 SE NORTH BEND WAY</th>
</tr>
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<tbody>
<tr>
<td>City: NORTH BEND</td>
<td>Zip: 98045</td>
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<table>
<thead>
<tr>
<th>Tank Name: 10</th>
<th>Tag Number: A3950</th>
<th>Tank Status: Operational</th>
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<tbody>
<tr>
<td>Tank Status Date: 09/09/2010</td>
<td>Tank Install Date: 01/01/1998</td>
<td>Tank Closure Date: Not reported</td>
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<tr>
<td>Capacity Range: 10,000 to 19,999 Gallons</td>
<td>Tank Permit Expiration Date: 01/31/2020</td>
<td>Tank Upgrade Date: Not reported</td>
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<tr>
<td>Tank Spill Prevention: Spill Bucket/Spill Box</td>
<td>Tank Overfill Prevention: 25 Gallons or less</td>
<td>Tank Material: Fiberglass Reinforced Plastic</td>
</tr>
<tr>
<td>Tank Construction: Double Wall Tank</td>
<td>Tank Tightness Test: Not reported</td>
<td>Tank Corrosion Protection: Not reported</td>
</tr>
<tr>
<td>Tank Manifold: Not reported</td>
<td>Tank Release Detection: Automatic Tank Gauging</td>
<td>Tank SFC Type: Not reported</td>
</tr>
<tr>
<td>Tank Pipe Material: Other</td>
<td>Pipe Construction: No Piping Attached to Tank</td>
<td>Pipe Primary Release Detection: Not reported</td>
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<tr>
<td>Pipe Second Release Detection: Not reported</td>
<td>Pipe Corrosion Protection: Not reported</td>
<td>Pipe Pumping System: Gravity Delivery System (No Pump)</td>
</tr>
<tr>
<td>Responsible Unit: Northwest</td>
<td>Dispenser/Pump SFC Type: Not reported</td>
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</table>

<table>
<thead>
<tr>
<th>Name: HPT TA PROPERTIES TRUST</th>
<th>Address: 46630 SE NORTH BEND WAY</th>
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<td>City: NORTH BEND</td>
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<table>
<thead>
<tr>
<th>Tank Name: 1A</th>
<th>Tag Number: A3950</th>
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<tr>
<td>Tank Status Date: 08/06/1996</td>
<td>Tank Install Date: 01/01/1977</td>
<td>Tank Closure Date: Not reported</td>
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<tr>
<td>Capacity Range: 1,101 to 2,000 Gallons</td>
<td>Tank Permit Expiration Date: Not reported</td>
<td>Tank Upgrade Date: 10/21/1998</td>
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<td>Tank Spill Prevention: 25 Gallons or less</td>
<td>Tank Overfill Prevention: 25 Gallons or less</td>
<td>Tank Material: Steel</td>
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<tr>
<td>Tank Construction: Single Wall Tank</td>
<td>Tank Tightness Test: Not reported</td>
<td>Tank Corrosion Protection: Sacrificial Anode</td>
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<tr>
<td>Tank Manifold: Not reported</td>
<td>Tank Release Detection: Automatic Tank Gauging</td>
<td>Tank SFC Type: Not reported</td>
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<tr>
<td>Tank Pipe Material: Other</td>
<td>Pipe Construction: Single Wall Pipe</td>
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HPT TA PROPERTIES TRUST (Continued)

Pipe Primary Release Detection: Other
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Gravity Delivery System (No Pump)
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: HPT TA PROPERTIES TRUST
Address: 46630 SE NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 2
Tag Number: A3950
Tank Status: Operational
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1976
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: 01/31/2020
Tank Upgrade Date: 06/10/1996
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Every 5 Years
Tank Corrosion Protection: Impressed Current and Interior Lining
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Sump
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump

Name: HPT TA PROPERTIES TRUST
Address: 46630 SE NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 3
Tag Number: A3950
Tank Status: Operational
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1976
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: 01/31/2020
Tank Upgrade Date: 06/10/1996
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Steel
Tank Construction: Single Wall Tank
HPT TA PROPERTIES TRUST (Continued)

Tank Tightness Test: Every 5 Years
Tank Corrosion Protection: Impressed Current and Interior Lining
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Sump
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump

Name: HPT TA PROPERTIES TRUST
Address: 46630 SE NORTH BEND WAY
City: NORTH BEND
Zip: 98045

Tank Name: 4
Tag Number: A3950
Tank Status: Removed
Tank Status Date: 08/06/1996
Tank Install Date: 01/01/1976
Tank Closure Date: Not reported
Capacity Range: 5,000 to 9,999 Gallons
Tank Permit Expiration Date: Not reported
Tank Upgrade Date: Not reported
Tank Spill Prevention: None
Tank Overfill Prevention: None
Tank Material: Steel
Tank Construction: Single Wall Tank
Tank Tightness Test: Not reported
Tank Corrosion Protection: Interior Lining
Tank Manifold: Not reported
Tank Release Detection: Statistical Inventory Reconciliation
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Single Wall Pipe
Pipe Primary Release Detection: Other
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: None
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

Name: HPT TA PROPERTIES TRUST
Address: 46630 SE NORTH BEND WAY
City: NORTH BEND
Zip: 98045
HPT TA PROPERTIES TRUST (Continued)  

Capacity Range: 5,000 to 9,999 Gallons  
Tank Permit Expiration Date: Not reported  
Tank Upgrade Date: Not reported  
Tank Spill Prevention: None  
Tank Overfill Prevention: None  
Tank Material: Steel  
Tank Construction: Single Wall Tank  
Tank Tightness Test: Not reported  
Tank Corrosion Protection: Interior Lining  
Tank Manifold: Not reported  
Tank Release Detection: Not reported  
Tank SFC Type: Not reported  
Pipe Material: Not reported  
Pipe Construction: Single Wall Pipe  
Pipe Primary Release Detection: Other  
Pipe Second Release Detection: Not reported  
Pipe Corrosion Protection: None  
Pipe Pumping System: Pressurized System  
Responsibility Unit: Northwest  
Dispenser/Pump SFC Type: Not reported  

Interaction: 4577  
Interaction 1: I  
Interaction 2: LUST  
Ecology Program: TOXICS  
Program Data: ISIS  
Facility Alt.: Not reported  
Program ID: 2885  
Date Interaction: 1999-01-08 00:00:00  
Date Interaction 3: LUST Facility  
Latitude: 47.468148870999997  
Longitude: -121.71822561099999  

Interaction: 4576  
Interaction 1: I  
Interaction 2: IRAP  
Ecology Program: TOXICS  
Program Data: ISIS  
Facility Alt.: HPT TA PROPERTIES TRUST  
Program ID: Not reported  
Date Interaction: 1994-09-27 00:00:00  
Date Interaction 3: Independent Remedial Actn  
Latitude: 47.468148870999997  
Longitude: -121.71822561099999  

Interaction: 4575
HPT TA PROPERTIES TRUST (Continued)

Interaction 1: A
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 2885
Date Interaction: 1976-01-01 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.468148870999997
Longitude: -121.71822561099999

CSCSL NFA:
Name: KENS TRUCK STOP
Address: 46630 SE NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 2484
CS Id: 5117
NFA Date: 10/03/2011
Alternate Site Names: HPT TA PROPERTIES TRUST, SEATTLE EAST AUTO TRUCK PLAZA
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Diesel
Ground Water: Not reported
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.468153785
Longitude: -121.71822596

Name: KENS TRUCK STOP
Address: 46630 SE NORTH BEND WAY
City, State, Zip: NORTH BEND, WA 98045
Facility/Site Id: 2484
CS Id: 5117
NFA Date: 10/03/2011
Alternate Site Names: HPT TA PROPERTIES TRUST, SEATTLE EAST AUTO TRUCK PLAZA
NFA Reason: NFA-Initial Investigation
Site Status: NFA
Region: Northwest
Contaminant Name: Petroleum-Other
Ground Water: Not reported
Surface Water: Not reported
Soil: Confirmed Above Cleanup Levels
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Latitude: 47.468153785
Longitude: -121.71822596
MAP FINDINGS

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<thead>
<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Site</th>
<th>Database(s)</th>
<th>EPA ID Number</th>
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<td></td>
<td>WA ALLSITES</td>
<td>S109525000</td>
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<td>WA SPILLS</td>
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<td>WA Financial Assurance</td>
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CL381  HPT TA PROPERTIES TRUST  WA ALLSITES  S109525000
South  46600 SE NORTH BEND WAY
1/8-1/4  NORTH BEND, WA  98045
0.140 mi.  Site 1 of 3 in cluster CL
737 ft.  Actual: 665 ft.

Focus Map: 25

ALLSITES:
Name: PETROCARD SYSTEMS INC 1
Facility Id: 3771329

Interaction:
1  13373
Interaction 1:
A
Interaction 2:
UST
Ecology Program:
TOXICS
Program Data:
UST
Facility Alt.:
HPT TA PROPERTIES TRUST
Program ID:
619565
Date Interaction:
2009-01-21 00:00:00
Date Interaction 3:
Underground Storage Tank
Latitude:
47.467575191999998
Longitude:
-121.71671651

Interaction:
1  113402
Interaction 1:
A
Interaction 2:
ENFORFNL
Ecology Program:
TOXICS
Program Data:
DMS
Facility Alt.:
Not reported
Program ID:
Not reported
Date Interaction:
2015-05-21 00:00:00
Date Interaction 3:
Enforcement Final
Latitude:
47.467575191999998
Longitude:
-121.71671651

SPILLS:
Name: TA TRUCK STOP
Address: 46600 SE NORTH BEND WAY
City,State,Zip: NORTH BEND, WA 98045
Facility ID:
108968
Medium:
Soil
Material Desc:
DIESEL LOW SULPHUR (ULSD)
Material Qty:
15
Material Units:
Gals
Date Received:
Not reported
Contact Name:
Not reported
Incident Date:
11/17/2019
Incident Category Type:
Oil Spill
Incident Category:
Oil Spill
Latitude:
47.46824
Longitude:
-121.71831
Source Type:
Vehicle
Source:
Commercial Truck
Vessel Facility Name:
Not reported
Recovered Quantity:
0
Resp Party Contact:
Not reported
Cause:
Melton Truck Lines diesel spill 11-17-2019
Cause Type:
Not reported
### WA Financial Assurance 1:

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<tr>
<th>Name</th>
<th>HPT TA PROPERTIES TRUST</th>
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</thead>
<tbody>
<tr>
<td>Address</td>
<td>46600 SE NORTH BEND WAY</td>
</tr>
<tr>
<td>City, State, Zip</td>
<td>NORTH BEND, WA 98045</td>
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<tr>
<td>DOE Site ID</td>
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<tr>
<td>Financial Resp Type</td>
<td>LLOYD'S SYNDICATES-BEAZLEY</td>
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<td>Address 2:</td>
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<td>Proof of Responsibility Document Flag</td>
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<td>Retroactive Date</td>
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<tr>
<td>Longitude</td>
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<table>
<thead>
<tr>
<th>Name</th>
<th>HPT TA PROPERTIES TRUST</th>
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<tbody>
<tr>
<td>Address</td>
<td>46600 SE NORTH BEND WAY</td>
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<tr>
<td>City, State, Zip</td>
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<td>DOE Site ID</td>
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<tr>
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</table>

### MAP FINDINGS

- **Map ID**: S109525000
- **Direction**: Not reported
- **Distance**: Not reported
- **Elevation**: Not reported
- **Site**: Not reported
- **Database(s)**: Not reported
- **EDR ID Number**: Not reported
- **EPA ID Number**: Not reported
### Tank Details

**UST:**
- **Name:** HPT TA PROPERTIES TRUST
- **Address:** 46600 SE NORTH BEND WAY
- **City:** NORTH BEND
- **Zip:** 98045
- **Facility ID:** 3771329
- **Site Id:** 619565
- **UBI:** Not reported
- **Phone Number:** Not reported
- **Decimal Latitude:** 47.4675814667401
- **Decimal Longitude:** -121.716723591833
- **Tank Name:** A4547, A5637
- **Tag Number:** Operational
- **Tank Status Date:** 08/06/1996
- **Tank Install Date:** 01/01/1976
- **Tank Closure Date:** Not reported
- **Capacity Range:** 10,000 to 19,999 Gallons
- **Tank Permit Expiration Date:** 08/26/1998
- **Tank Upgrade Date:** Spill Bucket/Spill Box
- **Tank Overfill Prevention:** Overfill Alarm
- **Tank Material:** Steel
- **Tank Construction:** Single Wall Tank
- **Tank Tightness Test:** Not reported
- **Tank Corrosion Protection:** Impressed Current and Interior Lining
- **Tank Manifold:** Automatic Tank Gauging
- **Tank Release Detection:** Sump
- **Tank SFC Type:** Fiberglass
- **Pipe Material:** Double Wall Pipe
- **Pipe Construction:** Automatic Line Leak Detector (ALLD)
- **Pipe Second Release Detection:** Annual Line Tightness Test (LTT)
- **Pipe Corrosion Protection:** Corrosion Resistant
- **Pipe Pumping System:** Pressurized System
- **Responsible Unit:** Northwest
- **Dispenser/Pump SFC Type:** Sump

**Dispenser/Pump Details**

**UST:**
- **Name:** HPT TA PROPERTIES TRUST
- **Address:** 46600 SE NORTH BEND WAY
- **City:** NORTH BEND
- **Zip:** 98045
- **Tank Name:** 7
- **Tag Number:** A4547, A5637
- **Tank Status:** Operational
- **Tank Status Date:** 08/06/1996
- **Tank Install Date:** 01/01/1977
- **Tank Closure Date:** Not reported
- **Capacity Range:** 5,000 to 9,999 Gallons
- **Tank Permit Expiration Date:** 08/26/1998
- **Tank Upgrade Date:** 01/31/2020

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**MAP FINDINGS**

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<th>UST Name</th>
<th>EPA ID Number</th>
<th>EDR ID Number</th>
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<tbody>
<tr>
<td>CL382</td>
<td>HPT TA PROPERTIES TRUST</td>
<td>46600 SE NORTH BEND WAY</td>
<td>WA UST  U004020787</td>
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<tr>
<td>1/8-1/4</td>
<td>NORTH BEND, WA 98045</td>
<td>Site 2 of 3 in cluster CL</td>
<td>737 ft.</td>
<td>0.140 mi.</td>
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### HPT TA PROPERTIES TRUST (Continued)

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
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<tbody>
<tr>
<td>Tank Spill Prevention:</td>
<td>Spill Bucket/Spill Box</td>
</tr>
<tr>
<td>Tank Overfill Prevention:</td>
<td>Overfill Alarm</td>
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<tr>
<td>Tank Material:</td>
<td>Steel</td>
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<tr>
<td>Tank Construction:</td>
<td>Single Wall Tank</td>
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<tr>
<td>Tank Tightness Test:</td>
<td>Not reported</td>
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<tr>
<td>Tank Corrosion Protection:</td>
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<tr>
<td>Tank Manifold:</td>
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<td>Pipe Second Release Detection:</td>
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<td>Pipe Corrosion Protection:</td>
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<td>Pressurized System</td>
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<td>Responsible Unit:</td>
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<tr>
<td>Dispenser/Pump SFC Type:</td>
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<tr>
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<tr>
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<td>46600 SE NORTH BEND WAY</td>
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<tr>
<td>City:</td>
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</tr>
<tr>
<td>Zip:</td>
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<td>Tank Upgrade Date:</td>
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<td>Tank Material:</td>
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<td>Tank Tightness Test:</td>
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<td>Tank Manifold:</td>
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<td>Tank Release Detection:</td>
<td>Statistical Inventory Reconciliation</td>
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<td>Pipe Primary Release Detection:</td>
<td>Automatic Line Leak Detector (ALLD)</td>
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<td>Pipe Second Release Detection:</td>
<td>Annual Line Tightness Test (LTT)</td>
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### Addendum

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<tbody>
<tr>
<td>Name:</td>
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<tr>
<td>Address:</td>
<td>46600 SE NORTH BEND WAY</td>
</tr>
<tr>
<td>City:</td>
<td>NORTH BEND</td>
</tr>
<tr>
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<td>Tag Number:</td>
<td>A4547, A5637</td>
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HPT TA PROPERTIES TRUST (Continued)

Tank Status: Operational
Tank Status Date: 01/22/2009
Tank Install Date: 02/25/1999
Tank Closure Date: Not reported
Capacity Range: 10,000 to 19,999 Gallons
Tank Permit Expiration Date: 01/31/2020
Tank Upgrade Date: Not reported
Tank Spill Prevention: Spill Bucket/Spill Box
Tank Overfill Prevention: Overfill Alarm
Tank Material: Fiberglass Reinforced Plastic
Tank Construction: Double Wall Tank
Tank Tightness Test: Part of Automatic Tank Gauging (ATG) System
Tank Corrosion Protection: Corrosion Resistant
Tank Manifold: Not reported
Tank Release Detection: Automatic Tank Gauging
Tank SFC Type: Sump
Pipe Material: Fiberglass
Pipe Construction: Double Wall Pipe
Pipe Primary Release Detection: Automatic Line Leak Detector (ALLD)
Pipe Second Release Detection: Annual Line Tightness Test (LTT)
Pipe Corrosion Protection: Corrosion Resistant
Pipe Pumping System: Pressurized System
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Sump
Actual: 743 ft.
Focus Map: 20
CM384 GENIE INDUSTRIES NORTH BEND RCRA-VSQG 1014402258
East 47020 SE 144TH ST
1/8-1/4 0.174 mi. 918 ft. Site 1 of 2 in cluster CM
1/4 NORTH BEND, WA 98045
Actual: 743 ft.
Focus Map: 20
RCRA-VSQG:
Date form received by agency: 2018-03-01 00:00:00.0
Facility name: GENIE INDUSTRIES NORTH BEND
Facility address: 47020 SE 144TH ST
NORTH BEND, WA 98045
EPA ID: WAH000035177
Mailing address: PO BOX 97030
REDMOND, WA 98073
Contact: GREG CRUMB
Contact address: PO BOX 97030
NORTH BEND, WA 98045
Contact country: US
Contact telephone: 425-831-2834
Contact email: GREG.CRUMB@TEREX.COM
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste
Owner/Operator Summary:
Owner/operator name: GENIE INDUSTRIES
Owner/operator address: PO BOX 97030
REDMOND, WA 98073
Owner/operator country: US
Owner/operator telephone: 425-895-6374
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported
Owner/operator name: GENIE INDUSTRIES
Owner/operator address: PO BOX 97030
REDMOND, WA 98073
Owner/operator country: US
Owner/operator telephone: 425-895-6374
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: MIDDLEFORK LLC
Owner/operator address: 165 JUNIPER ST STE 100
ISSAQUAH, WA 98027
Owner/operator country: US
Owner/operator telephone: 425-837-9720
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
Used oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 2017-02-28 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2016-02-09 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2015-03-23 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2014-03-06 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2013-02-13 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Conditionally Exempt Small Quantity Generator
GENIE INDUSTRIES NORTH BEND (Continued)

Date form received by agency: 2012-02-09 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2011-02-23 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2010-02-11 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 2009-08-04 00:00:00.0
Site name: GENIE INDUSTRIES NORTH BEND
Classification: Small Quantity Generator

Hazardous Waste Summary:

- Waste code: D001
  Waste name: IGNITABLE WASTE

- Waste code: D002
  Waste name: CORROSIVE WASTE

- Waste code: D005
  Waste name: BARIUM

- Waste code: D008
  Waste name: LEAD

- Waste code: D009
  Waste name: MERCURY

- Waste code: D018
  Waste name: BENZENE

- Waste code: D025
  Waste name: P-CRESOL

- Waste code: D035
  Waste name: METHYL ETHYL KETONE
GENIE INDUSTRIES NORTH BEND

Waste code: F003
Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: F005
Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Waste code: WT02
Waste name: Washington State Dangerous Toxic Waste with a toxic constituents concentration greater than or equal to 0.001% and less than 1.0%, determined by biological testing methods or a book designation procedure.

Violation Status: No violations found
GENIE INDUSTRIES NORTH BEND  (Continued)

Address: 47020 SE 144TH ST
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 8165
EPA ID: WAH000035177
NAICS: 333120
State Waste Code Desc: WT02
Federal Waste Code Desc: D001,D005,D002,D008,D018,D035
Form Comm: Not reported
Data Year: 2017
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 578077413
Business Type: Mfg parts const machinery
Mail Name: Genie Industries
Mailing Address: PO Box 97030
Mailing City, State, Zip: Redmond, WA 98073-0730
Legal Organization Name: Genie Industries
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: PO Box 97030
Legal Address 2: Not reported
Legal City, State, Zip: Redmond, WA 98073-0730
Legal Phone Number: (425)895-6374
Legal Effective Date: Not reported
Land Organization Name: Middlefork LLC
Land Organization Type: Private
Land Contact: Not reported
Land Address: 165 Juniper St Ste 100
Land City, State, Zip: Issaquah, WA 98027
Land Phone Number: (425)837-9720
Operator Organization Name: Genie Industries
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 97030
Operator Address 2: Not reported
Operator City, State, Zip: Redmond, WA 98073-9730
Operator Phone Number: (425)895-6374
Operator Effective Date: Not reported
Site Contact: Greg Crumb
Site Contact Address: 47020 SE 144TH ST
Contact City, State, Zip: North Bend, WA 98045

TC5992688.2s  Page 600
GENIE INDUSTRIES NORTH BEND (Continued)

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**GENIE INDUSTRIES NORTH BEND**  
(Continued)

- **Legal Address 2:** Not reported
- **Legal City, State, Zip:** Redmond, WA 98073
- **Legal Phone Number:** (425)895-6374
- **Legal Effective Date:** Not reported
- **Land Organization Name:** Middlefork LLC
- **Land Organization Type:** Private
- **Land Contact:** Not reported
- **Land Address:** 165 Juniper St Ste 100
- **Land City, State, Zip:** Issaquah, WA 98027
- **Land Phone Number:** (425)837-9720
- **Operator Organization Name:** Genie Industries
- **Operator Organization Type:** Private
- **Operator:** Not reported
- **Operator Address:** PO Box 97030
- **Operator Address 2:** Not reported
- **Operator City, State, Zip:** Redmond, WA 98073
- **Operator Phone Number:** (425)895-6374
- **Operator Effective Date:** Not reported
- **Site Contact:** Not reported
- **Site Contact Address:** Not reported
- **Contact City, State, Zip:** Not reported
- **Site Contact Phone Number:** Not reported
- **Site Contact Email:** Not reported
- **Gen Status Code:** SQG
- **Monthly Generation:** True
- **Batch Generation:** False
- **One Time Generation:** False
- **Transport Own Waste:** False
- **Transports Other Waste:** False
- **Recycler Onsite:** False
- **Transfer Facility:** False
- **Other Exemption:** Not reported
- **UW Battery Gen:** False
- **Used Oil Transporter:** False
- **Used Oil Transfer Facility:** False
- **Used Oil Processor:** False
- **Used Oil Refiner:** False
- **Used Oil Fuel Marketer Directs Shipments:** False
- **Used Oil Fuel Marketer Meets Specs:** False
- **Site Contact Address 2:** Not reported

- **Name:** GENIE INDUSTRIES NORTH BEND
- **Address:** 47020 SE 144TH ST
- **City, State, Zip:** NORTH BEND, WA 98045
- **Facility Address 2:** Not reported
- **Facility ID:** 8165
- **EPA ID:** WAH000035177
- **NAICS:** 333120
- **State Waste Code Desc:** W02
- **Federal Waste Code Desc:** D001,D005,D002,D008,D018,D035
- **Form Comm:** Not reported
- **Data Year:** 2016
- **Permit by Rule:** False
- **Mailing Address 2:** Not reported
- **Treatment by Generator:** False
- **Mixed Radioactive Waste:** False
- **Importer of Hazardous Waste:** False
GENIE INDUSTRIES NORTH BEND  (Continued)

Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 578077413
Business Type: Mfg parts const machinery
Mail Name: Genie Industries
Mailing Address: PO Box 97030
Mailing City,State,Zip: Redmond, WA 98073-0730
Legal Organization Name: Genie Industries
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: PO Box 97030
Legal Address 2: Not reported
Legal City,State,Zip: Redmond, WA 98073-0730
Legal Phone Number: (425)895-6374
Legal Effective Date: Not reported
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Land Organization Type: Private
Land Contact: Not reported
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Land Phone Number: (425)837-9720
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Operator Phone Number: (425)895-6374
Operator Effective Date: Not reported
Site Contact: Greg Crumb
Site Contact Address: 47020 SE 144TH ST
Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: (425) 831 2834
Site Contact Email: greg.crumb@terex.com
Gen Status Code: SQG
Monthly Generation: True
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transport Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
GENIE INDUSTRIES NORTH BEND (Continued)

Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: GENIE INDUSTRIES NORTH BEND
Address: 47020 SE 144TH ST
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 8165
EPA ID: WAH000035177
NAICS: 333120
State Waste Code Desc: WT02
Federal Waste Code Desc: D001,D018,D025,D005
Form Comm: Not reported
Data Year: 2015
Permit by Rule: Not reported
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
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Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 578077413
Business Type: Mfg parts const machinery
Mail Name: Genie Industries
Mailing Address: PO Box 97030
Mailing City, State, Zip: Redmond, WA 98073-0730
Legal Organization Name: Genie Industries
Legal Organization Type: Private
Legal Contact: Not reported
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Legal City, State, Zip: Redmond, WA 98073-0730
Legal Phone Number: (425)895-6374
Legal Effective Date: Not reported
Land Organization Name: Middlefork LLC
Land Organization Type: Private
Land Contact: Not reported
Land Address: 165 Juniper St Ste 100
Land City, State, Zip: Issaquah, WA 98027
Land Phone Number: (425)837-9720
Operator Organization Name: Genie Industries
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 97030
Operator Address 2: Not reported
GENIE INDUSTRIES NORTH BEND (Continued)

Operator City, State, Zip: Redmond, WA 98073-9730
Operator Phone Number: (425) 895-6374
Operator Effective Date: Not reported
Site Contact: Greg Crumb
Site Contact Address: 47020 SE 144TH ST
Contact City, State, Zip: North Bend, WA 98045
Site Contact Phone Number: (425) 831 2834
Site Contact Email: greg.crumb@terex.com
Gen Status Code: SQG
Monthly Generation: True
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2:
Name: GENIE INDUSTRIES NORTH BEND
Address: 47020 SE 144TH ST
City, State, Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 8165
EPA ID: WAH000035177
NAICS: 333120
State Waste Code Desc: WT02
Federal Waste Code Desc: D001, D005, D018, D035
Form Comm: Not reported
Data Year: 2014
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 578077413
Business Type: Mfg parts const machinery
Mail Name: Genie Industries
GENIE INDUSTRIES NORTH BEND (Continued)

Mailing Address: PO Box 97030
Mailing City,State,Zip: Redmond, WA 98073-0730
Legal Organization Name: Genie Industries
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: PO Box 97030
Legal Address 2: Not reported
Legal City,State,Zip: Redmond, WA 98073-0730
Legal Phone Number: (425)895-6374
Legal Effective Date: Not reported
Land Organization Name: Middlefork LLC
Land Organization Type: Private
Land Contact: Not reported
Land Address: 165 Juniper St Ste 100
Land City,State,Zip: Issaquah, WA 98027
Land Phone Number: (425)837-9720
Operator Organization Name: Genie Industries
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 97030
Operator Address 2: Not reported
Operator City,State,Zip: Redmond, WA 98073-9730
Operator Phone Number: (425)895-6374
Operator Effective Date: Not reported
Site Contact: Greg Crumb
Site Contact Address: 47020 SE 144TH ST
Site Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: (425) 831 2834
Site Contact Email: greg.crumb@terex.com
Gen Status Code: SQG
Monthly Generation: True
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Tranports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: GENIE INDUSTRIES NORTH BEND
Address: 47020 SE 144TH ST
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 8165
EPA ID: WAH000035177
NAICS: 333120
State Waste Code Desc: WT02
Federal Waste Code Desc: D001, D005, D018, D035
Form Comm: Not reported
GENIE INDUSTRIES NORTH BEND (Continued)

Data Year: 2013
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 578077413
Business Type: Mfg parts const machinery
Mail Name: Genie Industries
Mailing Address: PO Box 97030
Mailing City, State, Zip: Redmond, WA 98073-0730
Legal Organization Name: Genie Industries
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: PO Box 97030
Legal Address 2: Not reported
Legal City, State, Zip: Redmond, WA 98073-0730
Legal Phone Number: (425)895-6374
Legal Effective Date: Not reported
Land Organization Name: Middlefork LLC
Land Organization Type: Private
Land Contact: Not reported
Land Address: 165 Juniper St Ste 100
Land City, State, Zip: Issaquah, WA 98027
Land Phone Number: (425)837-9720
Operator Organization Name: Genie Industries
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 97030
Operator Address 2: Not reported
Operator City, State, Zip: Redmond, WA 98073-9730
Operator Phone Number: (425)895-6374
Operator Effective Date: Not reported
Site Contact: Greg Crumb
Site Contact Address: 47020 SE 144TH ST
Contact City, State, Zip: North Bend, WA 98045
Site Contact Phone Number: (425) 831 2834
Site Contact Email: greg.crumb@terex.com
Gen Status Code: SQG
Monthly Generation: True
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False

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GENIE INDUSTRIES NORTH BEND (Continued)

Land Phone Number: (425)837-9720
Operator Organization Name: Genie Industries
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 97030
Operator Address 2: Not reported
Operator City,State,Zip: Redmond, WA 98073-9730
Operator Phone Number: (425)895-6374
Operator Effective Date: Not reported
Site Contact: Greg Crumb
Site Contact Address: 47020 SE 144TH ST
Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: (425) 831 2834
Site Contact Email: greg.crumb@terex.com
Gen Status Code: SQG
Monthly Generation: True
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marker Directs Shipments: False
Used Oil Fuel Marker Meets Specs: False
Site Contact Address 2: Not reported

Name: GENIE INDUSTRIES NORTH BEND
Address: 47020 SE 144TH ST
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 8165
EPA ID: WAH000035177
NAICS: 333120
State Waste Code Desc: WT02
Federal Waste Code Desc: D001 D002 D035
Form Comm: Not reported
Data Year: 2011
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Defferal: False

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GENIE INDUSTRIES NORTH BEND (Continued)

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<td>NORTH BEND, WA 98045</td>
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<tr>
<td>Facility Address 2:</td>
<td>Not reported</td>
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</table>

| Universal Waste: | Not reported |
| Off-Specification: | Not reported |
| LN Address 2: | Not reported |
| Tax Reg #: | 578077413 |
| Business Type: | Mfg parts const machinery |
| Mail Name: | Genie Industries |
| Mailing Address: | PO Box 97030 |
| Mailing City,State,Zip: | Redmond, WA 98073-0730 |
| Legal Organization Name: | Genie Industries |
| Legal Organization Type: | Private |
| Legal Contact: | Not reported |
| Legal Address: | PO Box 97030 |
| Legal Address 2: | Not reported |
| Legal City,State,Zip: | Redmond, WA 98073-0730 |
| Legal Phone Number: | (425)895-6374 |
| Legal Effective Date: | Not reported |
| Land Organization Name: | Middlefork LLC |
| Land Organization Type: | Private |
| Land Contact: | Not reported |
| Land Address: | 165 Juniper St Ste 100 |
| Land City,State,Zip: | Issaquah, WA 98027 |
| Land Phone Number: | (425)837-9720 |
| Operator Organization Name: | Genie Industries |
| Operator Organization Type: | Private |
| Operator: | Not reported |
| Operator Address: | PO Box 97030 |
| Operator Address 2: | Not reported |
| Operator City,State,Zip: | Redmond, WA 98073-9730 |
| Operator Phone Number: | (425)895-6374 |
| Operator Effective Date: | Not reported |
| Site Contact: | Greg Crumb |
| Site Contact Address: | 47020 SE 144TH ST |
| Contact City,State,Zip: | North Bend, WA 98045 |
| Site Contact Phone Number: | (425) 831 2834 |
| Site Contact Email: | greg.crumb@terex.com |
| Gen Status Code: | SQG |
| Monthly Generation: | True |
| Batch Generation: | False |
| One Time Generation: | False |
| Transport Own Waste: | False |
| Transports Other Waste: | False |
| Recycler Onsite: | False |
| Transfer Facility: | False |
| Other Exemption: | Not reported |
| UW Battery Gen: | False |
| Used Oil Transporter: | False |
| Used Oil Transfer Facility: | False |
| Used Oil Processor: | False |
| Used Oil Refiner: | False |
| Used Oil Fuel Marketer Directs Shipments: | False |
| Used Oil Fuel Marketer Meets Specs: | False |
| Site Contact Address 2: | Not reported |
GENIE INDUSTRIES NORTH BEND (Continued)

Facility ID: 8165
EPA ID: WAH000035177
NAICS: 333120
State Waste Code Desc: WT02
Federal Waste Code Desc: D001, D002, D008, D009, D0018
Form Comm: Not reported
Data Year: 2010
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 578077413
Business Type: Mfg parts const machinery
Mail Name: Genie Industries
Mailing Address: PO Box 97030
Mailing City,State,Zip: Redmond, WA 98073-0730
Legal Organization Name: Genie Industries
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: PO Box 97030
Legal Address 2: Not reported
Legal City,State,Zip: Redmond, WA 98073-0730
Legal Phone Number: (425)895-6374
Legal Effective Date: Not reported
Land Organization Name: Middlerfork LLC
Land Organization Type: Private
Land Contact: Not reported
Land Address: 165 Juniper St Ste 100
Land City,State,Zip: Issaquah, WA 98027
Land Phone Number: (425)837-9720
Operator Organization Name: Genie Industries
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 97030
Operator Address 2: Not reported
Operator City,State,Zip: Redmond, WA 98073-9730
Operator Phone Number: (425)895-6374
Operator Effective Date: Not reported
Site Contact: Greg Crumb
Site Contact Address: 47020 SE 144TH ST
Contact City,State,Zip: North Bend, WA 98045
Site Contact Phone Number: (425) 831 2834
Site Contact Email: greg.crumb@terex.com
Gen Status Code: SQG
GENIE INDUSTRIES NORTH BEND (Continued)

Monthly Generation: True
Batch Generation: False
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Name: GENIE INDUSTRIES NORTH BEND
Address: 47020 SE 144TH ST
City,State,Zip: NORTH BEND, WA 98045
Facility Address 2: Not reported
Facility ID: 8165
EPA ID: WAH000035177
NAICS: 333120
State Waste Code Desc: WT02
Federal Waste Code Desc: Not reported
Form Comm: One shipment of WT02 Waste during the 2009 year.
Data Year: 2009
Permit by Rule: False
Mailing Address 2: Not reported
Treatment by Generator: False
Mixed Radioactive Waste: False
Importer of Hazardous Waste: False
Immediate Recycler: False
Treatment/Storage/Disposal/Recycling Facility: False
Generator of Dangerous Fuel Waste: False
Generator Marketing to Burner: False
Other Marketers (i.e., blender, distributor, etc.): False
Utility Boiler Burner: False
Industry Boiler Burner: False
Industrial Furnace: False
Smelter Deferral: False
Universal Waste: Not reported
Off-Specification: Not reported
LN Address 2: Not reported
Tax Reg #: 578077413
Business Type: Mfg parts const machinery
Mail Name: Genie Industries
Mailing Address: PO Box 97030
Mailing City,State,Zip: Redmond, WA 98073-0730
Legal Organization Name: Genie Industries
Legal Organization Type: Private
Legal Contact: Not reported
Legal Address: PO Box 97030
Legal Address 2: Not reported
Legal City,State,Zip: Redmond, WA 98073-0730
Legal Phone Number: (425)895-6374
GENIE INDUSTRIES NORTH BEND (Continued)

Legal Effective Date: Not reported
Land Organization Name: Middlefork LLC
Land Organization Type: Private
Land Contact: Not reported
Land Address: 165 Juniper St Ste 100
Land City,State,Zip: Issaquah, WA 98027
Land Phone Number: (425)837-9720
Operator Organization Name: Genie Industries
Operator Organization Type: Private
Operator: Not reported
Operator Address: PO Box 97030
Operator Address 2: Not reported
Operator City,State,Zip: Redmond, WA 98073-9730
Operator Phone Number: (425)895-6374
Operator Effective Date: Not reported
Site Contact: Echo Summers
Site Contact Address: 18340 NE 76th St
Site Contact City,State,Zip: Redmond, WA 98052
Site Contact Phone Number: (425)895-6374
Site Contact Email: echo.summers@terex.com
Gen Status Code: SQG
Monthly Generation: False
Batch Generation: True
One Time Generation: False
Transport Own Waste: False
Transports Other Waste: False
Recycler Onsite: False
Transfer Facility: False
Other Exemption: Not reported
UW Battery Gen: False
Used Oil Transporter: False
Used Oil Transfer Facility: False
Used Oil Processor: False
Used Oil Refiner: False
Used Oil Fuel Marketer Directs Shipments: False
Used Oil Fuel Marketer Meets Specs: False
Site Contact Address 2: Not reported

Click this hyperlink while viewing on your computer to access
1 additional WA MANIFEST: record(s) in the EDR Site Report.
**NURSEY THE AT MT SI (Continued)**

Date Interaction: 2009-06-17 00:00:00
Date Interaction 3: Local Source Cntrl 7/09-3
Latitude: 47.505226237000003
Longitude: -121.77503722100001

---

**PEARCE INFILTRATION POND**

**WA ALLSITES**

387
South
1/4-1/2
0.266 mi.
1405 ft.
Actual:
522 ft.
Focus Map: 24

Name: PEARCE INFILTRATION POND
Facility Id: 33789

---

**NORTH BEND DRUM**

**WA ALLSITES**

388
West
1/4-1/2
0.270 mi.
1427 ft.
Actual:
548 ft.
Focus Map: 11

Name: NORTH BEND DRUM
Facility Id: 43786988

Interaction: 44706
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAR000001701
Date Interaction: 1995-04-14 00:00:00
Date Interaction 3: Hazardous Waste Generator
Latitude: 47.49948432899998
Longitude: -121.79223521900001

RCRA NonGen / NLR:
Date form received by agency: 1995-10-07 00:00:00.
Facility name: NORTH BEND DRUM
Facility address: 1610 NW 8TH ST
NORTH BEND, WA 98045
EPA ID: WAR000001701
Mailing address: 3190 160TH AVE SE
BELLEVUE, WA 98008
Contact: DICK STOREY
Contact address: 3190 160TH AVE SE
BELLEVUE, WA 98008
Contact country: US
NORTH BEND DRUM (Continued)

Contact telephone: 425-649-7116
Contact email: Not reported
EPA Region: 10
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name: NORTH BEND DRUM
Owner/operator address: 1610 NW 8TH ST
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: WA STATE
Owner/operator address: 1610 NW 8TH ST
NORTH BEND, WA 98045
Owner/operator country: US
Owner/operator telephone: 000-000-0000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 1997-02-24 00:00:00.
Owner/Op end date: Not reported

Owner/operator name: STOREY, DICK
Owner/operator address: 3190 160TH AVE SE
BELLEVUE, WA 98008
Owner/operator country: US
Owner/operator telephone: 425-649-7116
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:

U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
NORTH BEND DRUM (Continued) 1000993137

Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 1995-10-06 00:00:00.0
Site name: NORTH BEND DRUM
Classification: Small Quantity Generator

Date form received by agency: 1995-10-06 00:00:00.0
Site name: NORTH BEND DRUM
Classification: Not a generator, verified

Violation Status: No violations found

FINDS:
Registry ID: 110005399443
Facility URL: http://ofmpub.epa.gov/enviro/fii_query_detail_disp_program_facility?p_registry_id=110005399443

Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000993137
Registry ID: 110005399443
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110005399443
### NORMAN BROOK FARM INC (Continued)

- **Program Data:** DAIRY
- **Facility Alt.:** Not reported
- **Program ID:** Not reported
- **Date Interaction:** 2002-08-05 00:00:00
- **Date Interaction 3:** Dairy
- **Latitude:** 47.528630589999999
- **Longitude:** -121.771165801

### FINDS:
- **Registry ID:** 110015529187
- **Facility URL:** [http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_program_facility_facility_url=registry_id=110015529187](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_program_facility_facility_url=registry_id=110015529187)

### Environmental Interest/Information System:
Washington Facility / Site Identification System (WA-FSIS) provides a means to query and display data maintained by the Washington Department of Ecology. This system contains key information for each facility/site that is currently, or has been, of interest to the Air Quality, Dam Safety, Hazardous Waste, Toxics Cleanup, and Water Quality Programs.

[Click this hyperlink](http://ofmpub.epa.gov/enviro/fii_query_detail.disp_program_facility?p_program_facility_facility_url=registry_id=110015529187) while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

---

### MOUNT TENERIFFE TRAILHEAD

- **East**
- **1/4-1/2 mi.**
- **0.298 mi.**
- **1575 ft.**

#### Actual:
- **841 ft.**

#### Focus Map:
- **20**

- **ALLSITES:**
  - **Name:** MOUNT TENERIFFE TRAILHEAD
  - **Facility Id:** 7667

#### Interaction:
- **120483**
- **CONSTSWGP**
- **WATQUAL**
- **PARIS**
- **Mount Teneriffe Trailhead**
- **WAR304941**
- **2016-12-15 00:00:00**
- **Construction SW GP**
- **47.486557793999999**
- **-121.70998929**

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<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Address</td>
<td>7830 NORTHFORK RD</td>
</tr>
<tr>
<td>City, State, Zip</td>
<td>SNOQUALMIE, WA 98065</td>
</tr>
<tr>
<td>Facility ID</td>
<td>2139</td>
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<td>Region</td>
<td>STATE</td>
</tr>
<tr>
<td>Permit Status</td>
<td>Permit Not Required</td>
</tr>
<tr>
<td>Contact Organization</td>
<td>Northfork Enterprises</td>
</tr>
<tr>
<td>Contact Address1</td>
<td>7830 Northfork Rd</td>
</tr>
<tr>
<td>Contact Address2</td>
<td>Not reported</td>
</tr>
<tr>
<td>Contact City</td>
<td>Snoqualmie</td>
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<tr>
<td>Contact State</td>
<td>WA</td>
</tr>
<tr>
<td>Contact Postal</td>
<td>98065</td>
</tr>
<tr>
<td>Contact EMail</td>
<td><a href="mailto:jlittlejohn@foxinternet.com">jlittlejohn@foxinternet.com</a></td>
</tr>
<tr>
<td>Contact Phone</td>
<td>Not reported</td>
</tr>
<tr>
<td>Contact Phone Ext</td>
<td>Not reported</td>
</tr>
<tr>
<td>Permit No</td>
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</tr>
<tr>
<td>Phone</td>
<td>425-864-3638</td>
</tr>
<tr>
<td>Operator Name</td>
<td>Clayton Littlejohn</td>
</tr>
<tr>
<td>Operator Organization</td>
<td>Northfork Enterprises</td>
</tr>
<tr>
<td>Operator EMail</td>
<td><a href="mailto:jlittlejohn@foxinternet.com">jlittlejohn@foxinternet.com</a></td>
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<tr>
<td>Operator Title</td>
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<tr>
<td>Year Closed</td>
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<td>Open to Public Flag</td>
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<tr>
<td>Website</td>
<td><a href="http://www.northforkenterprises.com">http://www.northforkenterprises.com</a></td>
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<td>Latitude</td>
<td>Not reported</td>
</tr>
<tr>
<td>Longitude</td>
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<td>Permit Not Required</td>
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<tr>
<td>Contact Organization</td>
<td>Northfork Enterprises</td>
</tr>
<tr>
<td>Contact Address1</td>
<td>7830 Northfork Rd</td>
</tr>
<tr>
<td>Contact Address2</td>
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</tr>
<tr>
<td>Contact City</td>
<td>Snoqualmie</td>
</tr>
<tr>
<td>Contact State</td>
<td>WA</td>
</tr>
<tr>
<td>Contact Postal</td>
<td>98065</td>
</tr>
<tr>
<td>Contact EMail</td>
<td><a href="mailto:jlittlejohn@foxinternet.com">jlittlejohn@foxinternet.com</a></td>
</tr>
<tr>
<td>Contact Phone</td>
<td>Not reported</td>
</tr>
<tr>
<td>Contact Phone Ext</td>
<td>Not reported</td>
</tr>
<tr>
<td>Permit No</td>
<td>Not reported</td>
</tr>
<tr>
<td>Phone</td>
<td>425-864-3638</td>
</tr>
<tr>
<td>Operator Name</td>
<td>Clayton Littlejohn</td>
</tr>
<tr>
<td>Operator Organization</td>
<td>Northfork Enterprises</td>
</tr>
<tr>
<td>Operator EMail</td>
<td><a href="mailto:jlittlejohn@foxinternet.com">jlittlejohn@foxinternet.com</a></td>
</tr>
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</table>

## MAP FINDINGS

<table>
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<tr>
<th>Map ID</th>
<th>Direction</th>
<th>Distance</th>
<th>Elevation</th>
<th>Site</th>
<th>Database(s)</th>
<th>EDR ID Number</th>
<th>EPA ID Number</th>
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<tbody>
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<td>391</td>
<td>North</td>
<td>1/4-1/2</td>
<td>0.330 mi.</td>
<td>1742 ft.</td>
<td>SWF/LF</td>
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<td>443 ft.</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Focus Map:</td>
<td>3</td>
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<td></td>
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- **Name:** NORTHFORK ENTERPRISES
- **Address:** 7830 NORTHFORK RD
- **City, State, Zip:** SNOQUALMIE, WA 98065
- **Facility ID:** 2139
- **Region:** STATE
- **Permit Status:** Permit Not Required
- **Contact Organization:** Northfork Enterprises
- **Contact Address1:** 7830 Northfork Rd
- **Contact Address2:** Not reported
- **Contact City:** Snoqualmie
- **Contact State:** WA
- **Contact Postal:** 98065
- **Contact EMail:** jlittlejohn@foxinternet.com
- **Contact Phone:** Not reported
- **Contact Phone Ext:** Not reported
- **Permit No:** Not reported
- **Phone:** 425-864-3638
- **Operator Name:** Clayton Littlejohn
- **Operator Organization:** Northfork Enterprises
- **Operator EMail:** jlittlejohn@foxinternet.com

---

**TC5992688.2s Page 618**
NORTHFORK ENTERPRISES (Continued)  S108108035

Operator Title: Not reported
Recycle Survey Code: 7067
Ownership: Not reported
Facility Type: Recycling (non-regulated)
Contact Name: Clayton Littlejohn
Contact Title: Not reported
Year Closed: Not reported
Open to Public Flag: No
Website: http://www.northforkenterprises.com
Latitude: Not reported
Longitude: Not reported

392  KING CNTY DOT NORTH BEND PIT  WA ALLSITES  S110039522
East
MIDDLE FORK RD SE  WA NPDES  N/A
1/4-1/2
NORTH BEND, WA 98045
0.389 mi.
2055 ft.
Actual: 813 ft.
Focus Map: 20

ALLSITES: KING CNTY DOT NORTH BEND PIT
Name: Facility Id: 11696

Interaction: 87294
Interaction 1: A
Interaction 2: SANDGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: KING CNTY DOT NORTH BEND PIT
Program ID: WAG503143
Date Interaction: 1994-11-23 00:00:00
Date Interaction 3: Sand and Gravel GP
Latitude: 47.473094320999998
Longitude: -121.707985239

NPDES:
Name: KING CNTY DOT NORTH BEND PIT
Address: MIDDLE FORK RD SE
City, State, Zip: NORTH BEND, WA 98045-9740
Facility Status: Active
Facility Type: Sand and Gravel GP
Admin Region: Northwest
Date Issued: 02/17/2016
Latitude: 47.47310000
Longitude: -121.708
Permit ID: WAG503143
Permit Version: 4
Permit Status: Active
Permit SubStatus: Coverage Issued
Ecology Contact: Cynthia Walcker
WRIA: Snohomish
Permit Expiration Date: 03/31/2021
Effective Date: 04/01/2016
Days to Expiration: -533
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<th>EPA ID Number</th>
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<td>WA UST</td>
<td>U001122759</td>
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<td>1/4-1/2</td>
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<tr>
<td>0.418 mi.</td>
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<tr>
<td>2209 ft.</td>
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**Actual:**
- **UST:**
  - **Name:** FURY CONSTRUCTION COMPANY
  - **Address:** 14536 415TH AVE SE
  - **City:** NORTH BEND
  - **Zip:** 98045
  - **Facility ID:** 19283672
  - **Site Id:** 2474
  - **UBI:** Not reported
  - **Phone Number:** Not reported
  - **Decimal Latitude:** 47.489014
  - **Decimal Longitude:** -121.788211

- **Tank Name:** D
- **Tag Number:** Not reported
- **Tank Status:** Removed
- **Tank Status Date:** 08/06/1996
- **Tank Install Date:** 12/31/1964
- **Tank Closure Date:** Not reported
- **Capacity Range:** Not reported
- **Tank Permit Expiration Date:** Not reported
- **Tank Upgrade Date:** Not reported
- **Tank Overfill Prevention:** Not reported
- **Tank Material:** Steel
- **Tank Construction:** Not reported
- **Tank Tightness Test:** Not reported
- **Tank Corrosion Protection:** Not reported
- **Tank Manifold:** Not reported
- **Tank Release Detection:** Not reported
- **Tank SFC Type:** Not reported
- **Pipe Material:** Not reported
- **Pipe Construction:** Above Ground Piping
- **Pipe Primary Release Detection:** Not reported
- **Pipe Second Release Detection:** Not reported
- **Pipe Corrosion Protection:** Not reported
- **Pipe Pumping System:** Not reported
- **Responsible Unit:** Northwest
- **Dispenser/Pump SFC Type:** Not reported

- **Dispenser/Pump SFC Type:**
  - **Name:** FURY CONSTRUCTION COMPANY
  - **Address:** 14536 415TH AVE SE
  - **City:** NORTH BEND
  - **Zip:** 98045

- **Tank Name:** G
- **Tag Number:** Not reported
- **Tank Status:** Removed
- **Tank Status Date:** 08/06/1996
- **Tank Install Date:** 12/31/1964
- **Tank Closure Date:** Not reported
- **Capacity Range:** 111 TO 1,100 Gallons
- **Tank Permit Expiration Date:** Not reported
- **Tank Upgrade Date:** Not reported

**MAP FINDINGS**

- **Map ID**
- **Direction**
- **Distance**
- **Elevation**
- **Site**
- **Database(s)**
- **EDR ID Number**
- **EPA ID Number**
FURY CONSTRUCTION COMPANY (Continued)  U001122759

Tank Spill Prevention: Not reported
Tank Overfill Prevention: Not reported
Tank Material: Steel
Tank Construction: Not reported
Tank Tightness Test: Not reported
Tank Corrosion Protection: Not reported
Tank Manifold: Not reported
Tank Release Detection: Not reported
Tank SFC Type: Not reported
Pipe Material: Not reported
Pipe Construction: Above Ground Piping
Pipe Primary Release Detection: Not reported
Pipe Second Release Detection: Not reported
Pipe Corrosion Protection: Not reported
Pipe Pumping System: Not reported
Responsible Unit: Northwest
Dispenser/Pump SFC Type: Not reported

ALLSITES:
Name: FURY CONSTRUCTION COMPANY
Facility Id: 19283672

Interaction: 30990
Interaction 1: I
Interaction 2: UST
Ecology Program: TOXICS
Program Data: UST
Facility Alt.: Not reported
Program ID: 2474
Date Interaction: 2000-02-29 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.489008329999997
Longitude: -121.788196223

394 SNOQUALMIE VALLEY ATHLETIC CENTER WA ALLSITES S118953530
North 1422 BENDIGO BLVD N
1/4-1/2 NORTH BEND, WA 98065
0.426 mi.
2248 ft.

Actual: 434 ft.

ALLSITES:
Name: SNOQUALMIE VALLEY ATHLETIC CENTER
Facility Id: 22429

Interaction: 119621
Interaction 1: A
Interaction 2: CONSTSWGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: Snoqualmie Valley Athletic Center
Program ID: WAR304696
Date Interaction: 2016-09-01 00:00:00
Date Interaction 3: Construction SW GP
Latitude: 47.506555669000001
Longitude: -121.797559169
### ATT MOBILITY MOUNTAIN VIEW

**Address:** 13323 409TH AVE SE
**City, State, Zip:** NORTH BEND, WA 98045

**Distance:** 0.435 mi.
**Elevation:** 2296 ft.

**Interaction 1:** CONSTSWGP
**Interaction 2:** HAZWASTE
**Ecology Program:** EPCRA
**Program Data:** ATT MOBILITY MOUNTAIN VIEW

**Date Interaction:** 2013-06-13 00:00:00
**Date Interaction 3:** Emergency/Haz Chem Rpt

**Latitude:** 47.479824714
**Longitude:** -121.795980266

### SNOQUALMIE VALLEY YOUTH ACTIVITY CENTER

**Address:** 152 BOALCH AVE NW
**City, State, Zip:** NORTH BEND, WA 98045

**Distance:** 0.450 mi.
**Elevation:** 2374 ft.

**Interaction 1:** CONSTSWGP
**Interaction 2:** WATQUAL
**Ecology Program:** PARIS
**Program Data:** Snoqualmie Valley Youth Activity Center

**Date Interaction:** 2017-07-03 00:00:00
**Date Interaction 3:** Construction SW GP

**Latitude:** 47.506186931
**Longitude:** -121.795980266
SNOQUALMIE VALLEY YOUTH ACTIVITY CENTER (Continued)

 Permit SubStatus: Not reported
 Ecology Contact: Not reported
 WRIA: Not reported
 Permit Expiration Date: 12/31/2020
 Effective Date: 12/07/2017
 Days to Expiration: -443

397 CADMAN INC NORTH BEND
ESE 47320 SE GROUSE RIDGE ACCESS RD
1/4-1/2 NORTH BEND, WA 98045
0.487 mi.
2570 ft.
Actual: 685 ft.

Focus Map: SWF/LF:
Name: CADMAN INC. - NORTH BEND
Address: 47320 SE GROUSE RIDGE ACCESS RD
City,State,Zip: NORTH BEND, WA 98045
Facility ID: 3499
Region: STATE
 Permit Status: Not reported
 Contact Organization: _Unspecified
 Contact Address1: Not reported
 Contact Address2: Not reported
 Contact City: Not reported
 Contact State: Not reported
 Contact Postal: Not reported
 Contact EMail: Not reported
 Contact Phone: Not reported
 Contact Phone Ext: Not reported
 Permit No: Not reported
 Phone: Not reported
 Operator Name: Not reported
 Operator Organization: _Unspecified
 Operator EMail: Not reported
 Operator Title: Not reported
 Recycle Survey Code: 0
 Ownership: PRIVATE
 Facility Type: Material Recovery Facility (exempt)
 Contact Name: Not reported
 Contact Title: Not reported
 Year Closed: Not reported
 Open to Public Flag: No
 Website: Not reported
 Latitude: 47.466577
 Longitude: -121.710952

ALLSITES:
Name: CADMAN INC NORTH BEND
Facility Id: 6841

Interaction: 87805
Interaction 1: A
Interaction 2: SANDGP
Ecology Program: WATQUAL
Program Data: PARIS
Facility Alt.: CADMAN INC NORTH BEND
Program ID: WAG503344
SHULTZ DISTRIBUTING SNOQUALMIE
1/2-1
SNOQUALMIE, WA 98065

Date Interaction: 2002-05-30 00:00:00
Date Interaction 3: Sand and Gravel GP
Latitude: 47.466571555300001
Longitude: -121.710952255

Name: SHULTZ DISTRIBUTING SNOQUALMIE
Address: 9120 BOALCH AVE SE
City,State,Zip: SNOQUALMIE, WA 98065
Facility ID: 2449
Region: Northwest
Lat/Long: 47.51886 / -121.79975
Clean Up Siteid: 3277
Site Status: Awaiting Cleanup
Contaminant Name: Petroleum Products-Unspecified
Alternate Site Names: Schultz Distributing Inc
Site Rank: Not reported
Has Institutional Control: Not reported
Past VCP: Not reported
Current VCP: Not reported
Ground Water: Confirmed Above Cleanup Levels
Surface Water: Suspected
Soil: Suspected
Sediment: Not reported
Air: Not reported
Bedrock: Not reported
Responsible Unit: Northwest

Name: SHULTZ DISTRIBUTING
Address: 9120 BOALCH AVE SE
**SHULTZ DISTRIBUTING SNOQUALMIE (Continued)**

<table>
<thead>
<tr>
<th>City, State, Zip:</th>
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<tbody>
<tr>
<td>Facility ID:</td>
<td>51367681</td>
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<tr>
<td>Region:</td>
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<tr>
<td>Lat/Long:</td>
<td>47.518815699625 / -121.7999176566</td>
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<td>Clean Up Siteid:</td>
<td>11908</td>
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<tr>
<td>Site Status:</td>
<td>Awaiting Cleanup</td>
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<td>Contaminant Name:</td>
<td>Petroleum-Diesel</td>
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<td>Alternate Site Names:</td>
<td>SHULTZ DISTRIBUTING INC, SHULTZ DISTRIBUTING INC UST 10211</td>
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<tr>
<td>Site Rank:</td>
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<td>Has Institutional Control:</td>
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<td>Past VCP:</td>
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<td>Current VCP:</td>
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<td>Soil:</td>
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<td>Sediment:</td>
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**LUST:**

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<td>Lat/Long:</td>
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</tbody>
</table>
SHULTZ DISTRIBUTING SNOQUALMIE (Continued)

Date Interaction: 1975-01-01 00:00:00
Date Interaction 3: Underground Storage Tank
Latitude: 47.518809531000002
Longitude: -121.79992087799999

Interaction: 102081
Interaction 1: A
Interaction 2: INDPNDNT
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: Shultz Distributing
Program ID: Not reported
Date Interaction: 2012-07-09 00:00:00
Date Interaction 3: Independent Cleanup
Latitude: 47.518809531000002
Longitude: -121.79992087799999

Interaction: 102109
Interaction 1: A
Interaction 2: LUST
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: SHULTZ DISTRIBUTING INC UST 10211
Program ID: 10211
Date Interaction: 2012-07-09 00:00:00
Date Interaction 3: LUST Facility
Latitude: 47.518809531000002
Longitude: -121.79992087799999

Name: SHULTZ DISTRIBUTING SNOQUALMIE
Facility Id: 2449

Interaction: 4489
Interaction 1: A
Interaction 2: INDPNDNT
Ecology Program: TOXICS
Program Data: ISIS
Facility Alt.: SHULTZ DISTRIBUTING SNOQUALMIE
Program ID: Not reported
Date Interaction: 1900-01-01 00:00:00
Date Interaction 3: Independent Cleanup
Latitude: 47.51885664599999
Longitude: -121.79971963600001

Interaction: 4486
Interaction 1: I
Interaction 2: HWG
Ecology Program: HAZWASTE
Program Data: TURBOWASTE
Facility Alt.: Not reported
Program ID: WAD980739346
Date Interaction: 1985-05-12 00:00:00
Date Interaction 3: Hazardous Waste Generator
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### SHULTZ DISTRIBUTING SNOQUALMIE (Continued)

Latitude: 47.518856459999999
Longitude: -121.79971963600001

Interaction: 4487
Interaction 1: I
Interaction 2: TIER2
Ecology Program: HAZWASTE
Program Data: EPCRA
Facility Alt.: Not reported
Program ID: CRK000023390
Date Interaction: 1990-01-01 00:00:00
Date Interaction 3: Emergency/Haz Chem Rpt TI
Latitude: 47.518856459999999
Longitude: -121.79971963600001
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<td>ERNS</td>
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<td>KING COUNTY</td>
<td>8854991</td>
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<td>DUWAMISH RIVER, SOUTH PARK DELTA MARINE</td>
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<td>ERNS</td>
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<tr>
<td>KING COUNTY</td>
<td>S118402041</td>
<td>RABANCO LTD./DBA: EASTSIDE DISPOSAL, DBA:</td>
<td>200 112TH AVE NE STE 300</td>
<td>0</td>
<td>WA SWF/LF</td>
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<td>USDA FS MT. BAKER-SNOQUALMIE NF: RAINY</td>
<td>FS RD 5640, 12 MI NE OF NORTH BEND, T24N R10E SEC 9 &amp;</td>
<td>98045</td>
<td>SEMS-ARCHIVE, DOCKET</td>
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<tr>
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<td>330 &amp; 354 E. NORTH BEND WAY</td>
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<td>WA ICR</td>
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<tr>
<td>NORTH BEND</td>
<td>S124435853</td>
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TC5992688.2s  Page OR-3
## ORPHAN SUMMARY

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Count: 139 records
To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

**Number of Days to Update:** Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

### STANDARD ENVIRONMENTAL RECORDS

#### Federal NPL site list

**NPL:** National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA’s Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

- **Date of Government Version:** 01/30/2020
- **Date Data Arrived at EDR:** 02/05/2020
- **Date Made Active in Reports:** 02/14/2020
- **Number of Days to Update:** 9

**Source:** EPA

**Telephone:** N/A

**Last EDR Contact:** 03/04/2020

**Next Scheduled EDR Contact:** 04/13/2020

**Data Release Frequency:** Quarterly

**NPL Site Boundaries**

**Sources:**

- EPA’s Environmental Photographic Interpretation Center (EPIC)
  - Telephone: 202-564-7333

- EPA Region 1
  - Telephone 617-918-1143

- EPA Region 3
  - Telephone 215-814-5418

- EPA Region 4
  - Telephone 404-562-8033

- EPA Region 5
  - Telephone 312-886-6686

- EPA Region 6
  - Telephone: 214-655-6659

- EPA Region 7
  - Telephone: 913-551-7247

- EPA Region 8
  - Telephone: 303-312-6774

- EPA Region 9
  - Telephone: 415-947-4246

- EPA Region 10
  - Telephone 206-553-8665

#### Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

- **Date of Government Version:** 01/30/2020
- **Date Data Arrived at EDR:** 02/05/2020
- **Date Made Active in Reports:** 02/14/2020
- **Number of Days to Update:** 9

**Source:** EPA

**Telephone:** N/A

**Last EDR Contact:** 03/04/2020

**Next Scheduled EDR Contact:** 04/13/2020

**Data Release Frequency:** Quarterly

#### NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.
### Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425(e), sites may be deleted from the NPL where no further response is appropriate.

<table>
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<tr>
<th>Date of Government Version</th>
<th>Source</th>
<th>Telephone</th>
<th>Last EDR Contact</th>
<th>Next Scheduled EDR Contact</th>
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### Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

<table>
<thead>
<tr>
<th>Date of Government Version</th>
<th>Source</th>
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<th>Last EDR Contact</th>
<th>Next Scheduled EDR Contact</th>
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SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

<table>
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<tr>
<th>Date of Government Version</th>
<th>Source</th>
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<th>Last EDR Contact</th>
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<td>Quarterly</td>
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### Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive
SEM-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA’s knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be potential NPL site.

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA’s comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.
RCRA-SQG:  RCRA - Small Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/16/2019  
Date Data Arrived at EDR: 12/16/2019  
Date Made Active in Reports: 12/20/2019  
Number of Days to Update: 4  
Source:  Environmental Protection Agency  
Telephone:  (206) 553-1200  
Last EDR Contact: 02/27/2020  
Next Scheduled EDR Contact: 04/06/2020  
Data Release Frequency: Quarterly

RCRA-VSQG:  RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/16/2019  
Date Data Arrived at EDR: 12/16/2019  
Date Made Active in Reports: 12/20/2019  
Number of Days to Update: 4  
Source:  Environmental Protection Agency  
Telephone:  (206) 553-1200  
Last EDR Contact: 02/27/2020  
Next Scheduled EDR Contact: 04/06/2020  
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS:  Land Use Control Information System
LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 11/04/2019  
Date Data Arrived at EDR: 11/13/2019  
Date Made Active in Reports: 01/28/2020  
Number of Days to Update: 76  
Source:  Department of the Navy  
Telephone:  843-820-7326  
Last EDR Contact: 02/10/2020  
Next Scheduled EDR Contact: 05/25/2020  
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List
A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/22/2019  
Date Data Arrived at EDR: 11/22/2019  
Date Made Active in Reports: 01/28/2020  
Number of Days to Update: 67  
Source:  Environmental Protection Agency  
Telephone:  703-603-0695  
Last EDR Contact: 02/20/2020  
Next Scheduled EDR Contact: 06/08/2020  
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls
A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/22/2019  
Date Data Arrived at EDR: 11/22/2019  
Date Made Active in Reports: 01/28/2020  
Number of Days to Update: 67  
Source:  Environmental Protection Agency  
Telephone:  703-603-0695  
Last EDR Contact: 02/20/2020  
Next Scheduled EDR Contact: 06/08/2020  
Data Release Frequency: Varies
Federal ERNS list

ERNS: Emergency Response Notification System
Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/09/2019
Date Data Arrived at EDR: 09/09/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 14
Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/19/2019
Next Scheduled EDR Contact: 04/06/2020
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

HSL: Hazardous Sites List
The Hazardous Sites List is a subset of the CSCSL Report. It includes sites which have been assessed and ranked using the Washington Ranking Method (WARM).

Date of Government Version: 08/28/2019
Date Data Arrived at EDR: 09/06/2019
Date Made Active in Reports: 09/30/2019
Number of Days to Update: 24
Source: Department of Ecology
Telephone: 360-407-7200
Last EDR Contact: 03/02/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Semi-Annually

State- and tribal - equivalent CERCLIS

CSCSL: Confirmed and Suspected Contaminated Sites List
State Hazardous Waste Sites. State hazardous waste site records are the states’ equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 10/17/2019
Date Made Active in Reports: 12/13/2019
Number of Days to Update: 57
Source: Department of Ecology
Telephone: 360-407-7200
Last EDR Contact: 01/15/2020
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Solid Waste Facility Database
Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/04/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/13/2020
Number of Days to Update: 70
Source: Department of Ecology
Telephone: 360-407-6132
Last EDR Contact: 03/02/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Annually

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tanks Site List
Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 11/11/2019
Date Data Arrived at EDR: 11/13/2019
Date Made Active in Reports: 01/13/2020
Number of Days to Update: 61
Source: Department of Ecology
Telephone: 360-407-7183
Last EDR Contact: 02/12/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: Quarterly
INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.
Date of Government Version: 10/10/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 67
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.
Date of Government Version: 08/27/2019
Date Data Arrived at EDR: 08/28/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 75
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/21/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Varies

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST’s are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.
Date of Government Version: 11/11/2019
Date Data Arrived at EDR: 11/13/2019
Date Made Active in Reports: 01/13/2020
Number of Days to Update: 61
Source: Department of Ecology
Telephone: 360-407-7183
Last EDR Contact: 08/14/2020
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: Quarterly

AST: Aboveground Storage Tank Locations
A listing of aboveground storage tank locations regulated by the Department of Ecology’s Spill Prevention, Preparedness and Response Program.
Date of Government Version: 12/14/2015
Date Data Arrived at EDR: 02/02/2016
Date Made Active in Reports: 05/03/2016
Number of Days to Update: 91
Source: Department of Ecology
Telephone: 360-407-7562
Last EDR Contact: 01/27/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Quarterly

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).
Date of Government Version: 10/03/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 72
Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).
Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies
INDIAN UST R10: Underground Storage Tanks on Indian Land
Date of Government Version: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).
Date of Government Version: 10/02/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).
Date of Government Version: 10/04/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/27/2020
Number of Days to Update: 85
Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).
Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)
Date of Government Version: 10/10/2019
Date Data Arrived at EDR: 12/05/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 67
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).
Date of Government Version: 10/11/2019
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 68
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies
State and tribal institutional control / engineering control registries

INST CONTROL: Institutional Control Site List
Sites that have institutional controls.

- Date of Government Version: 10/15/2019
- Date Data Arrived at EDR: 10/17/2019
- Date Made Active in Reports: 12/27/2019
- Number of Days to Update: 71
- Source: Department of Ecology
- Telephone: 360-407-7170
- Next Scheduled EDR Contact: 04/27/2020
- Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

- Date of Government Version: 07/27/2015
- Date Data Arrived at EDR: 09/29/2015
- Date Made Active in Reports: 02/18/2016
- Number of Days to Update: 142
- Source: EPA, Region 1
- Telephone: 617-918-1102
- Next Scheduled EDR Contact: 04/06/2020
- Data Release Frequency: Varies

ICR: Independent Cleanup Reports
These are remedial action reports Ecology has received from either the owner or operator of the sites. These actions have been conducted without department oversight or approval and are not under an order or decree. This database is no longer updated by the Department of Ecology.

- Date of Government Version: 12/01/2002
- Date Data Arrived at EDR: 01/03/2003
- Date Made Active in Reports: 01/22/2003
- Number of Days to Update: 19
- Source: Department of Ecology
- Telephone: 360-407-7200
- Last EDR Contact: 12/17/2019
- Next Scheduled EDR Contact: 04/27/2020
- Data Release Frequency: No Update Planned

INDIAN VCP R7: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

- Date of Government Version: 03/20/2008
- Date Data Arrived at EDR: 04/22/2008
- Date Made Active in Reports: 05/19/2008
- Number of Days to Update: 27
- Source: EPA, Region 7
- Telephone: 913-551-7365
- Next Scheduled EDR Contact: 07/20/2009
- Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Sites
Sites that have entered either the Voluntary Cleanup Program or its predecessor Independent Remedial Action Program.

- Date of Government Version: 10/15/2019
- Date Data Arrived at EDR: 10/17/2019
- Date Made Active in Reports: 12/27/2019
- Number of Days to Update: 71
- Source: Department of Ecology
- Telephone: 360-407-7200
- Last EDR Contact: 01/15/2020
- Next Scheduled EDR Contact: 04/27/2020
- Data Release Frequency: Varies

PTAP: PTAP Site Listing
A list of sites accepted into the Petroleum Technical Assistance Program. The Petroleum Technical Assistance Program (PTAP) expands the state’s ability to respond to the high customer demand to clean up petroleum contaminated sites. Under the PTAP, the Pollution Liability Insurance Agency (PLIA) may provide informal site-specific technical consultations and issue written opinion letters to persons conducting independent remedial actions at qualifying petroleum cleanup sites. PLIA may provide these services under the authority of RCW 70.149.040(9) and the Model Toxics Control Act (MTCA), Chapter 70.149 RCW and Chapter 173-340 WAC.
State and tribal Brownfields sites

BROWNFIELDS: Brownfields Sites Listing
A listing of brownfields sites included in the Confirmed & Suspected Sites Listing. Brownfields are abandoned, idle or underused commercial or industrial properties, where the expansion or redevelopment is hindered by real or perceived contamination. Brownfields vary in size, location, age, and past use -- they can be anything from a five-hundred acre automobile assembly plant to a small, abandoned corner gas station.

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY: Recycling Facility List
A listing of recycling center locations.

SWTIRE 2: Solid Waste Tire Facilities 2
solid waste tire piles
<table>
<thead>
<tr>
<th>Location of Open Dumps on Indian Lands</th>
<th>Date of Government Version: 12/31/1998</th>
<th>Date Data Arrived at EDR: 12/03/2007</th>
<th>Date Made Active in Reports: 01/24/2008</th>
<th>Number of Days to Update: 52</th>
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<tbody>
<tr>
<td>Date of Government Version: 01/12/2009</td>
<td>Date Data Arrived at EDR: 05/07/2009</td>
<td>Date Made Active in Reports: 09/21/2009</td>
<td>Number of Days to Update: 137</td>
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<tr>
<td>Date of Government Version: 06/30/1985</td>
<td>Date Data Arrived at EDR: 08/09/2004</td>
<td>Date Made Active in Reports: 09/17/2004</td>
<td>Number of Days to Update: 39</td>
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<td>Date of Government Version: 04/01/2014</td>
<td>Date Data Arrived at EDR: 08/06/2014</td>
<td>Date Made Active in Reports: 01/29/2015</td>
<td>Number of Days to Update: 176</td>
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<tr>
<td>Date of Government Version: 06/11/2019</td>
<td>Date Data Arrived at EDR: 06/13/2019</td>
<td>Date Made Active in Reports: 09/03/2019</td>
<td>Number of Days to Update: 82</td>
<td></td>
</tr>
</tbody>
</table>

**Local Lists of Hazardous waste / Contaminated Sites**

<table>
<thead>
<tr>
<th>National Clandestine Laboratory Register</th>
<th>Date of Government Version: 06/11/2019</th>
<th>Date Data Arrived at EDR: 06/13/2019</th>
<th>Date Made Active in Reports: 09/03/2019</th>
<th>Number of Days to Update: 82</th>
</tr>
</thead>
</table>
ALLSITES: Facility/Site Identification System Listing
Information on facilities and sites of interest to the Department of Ecology.
Date of Government Version: 10/29/2019  
Source: Department of Ecology  
Date Data Arrived at EDR: 10/30/2019  
Telephone: 360-407-6423  
Date Made Active in Reports: 01/13/2020  
Last EDR Contact: 01/28/2020  
Number of Days to Update: 75  
Next Scheduled EDR Contact: 05/11/2020  
Data Release Frequency: Quarterly

CDL: Clandestine Drug Lab Contaminated Site List
Illegal methamphetamine labs use hazardous chemicals that create public health hazards. Chemicals and residues can cause burns, respiratory and neurological damage, and death. Biological hazards associated with intravenous needles, feces, and blood also pose health risks.
Date of Government Version: 11/04/2019  
Source: Department of Health  
Date Data Arrived at EDR: 11/05/2019  
Telephone: 360-236-3380  
Date Made Active in Reports: 01/13/2020  
Last EDR Contact: 02/03/2020  
Number of Days to Update: 69  
Next Scheduled EDR Contact: 05/18/2020  
Data Release Frequency: Quarterly

HIST CDL: List of Sites Contaminated by Clandestine Drug Labs
This listing of contaminated sites by Clandestine Drug Labs includes non-remediated properties. The current CDL listing does not. This listing is no longer updated by the state agency.
Date of Government Version: 02/08/2007  
Source: Department of Health  
Date Data Arrived at EDR: 06/26/2007  
Telephone: 360-236-3381  
Date Made Active in Reports: 07/19/2007  
Last EDR Contact: 06/02/2008  
Number of Days to Update: 23  
Next Scheduled EDR Contact: 09/01/2008  
Data Release Frequency: No Update Planned

CSCSL NFA: Confirmed and Contaminated Sites - No Further Action
This report contains information about sites that are undergoing cleanup and sites that are awaiting further investigation and/or cleanup. Sites on the Hazardous Sites List (see above) are included in this data set.
Date of Government Version: 10/15/2019  
Source: Department of Ecology  
Date Data Arrived at EDR: 10/17/2019  
Telephone: 360-407-7170  
Date Made Active in Reports: 12/27/2019  
Last EDR Contact: 01/15/2020  
Number of Days to Update: 71  
Next Scheduled EDR Contact: 04/27/2020  
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs
A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.
Date of Government Version: 06/11/2019  
Source: Drug Enforcement Administration  
Date Data Arrived at EDR: 06/13/2019  
Telephone: 202-307-1000  
Date Made Active in Reports: 09/03/2019  
Last EDR Contact: 02/21/2020  
Number of Days to Update: 82  
Next Scheduled EDR Contact: 06/08/2020  
Data Release Frequency: Quarterly

AQUEOUS FOAM: Firefighting Foam Incidents
-> Description here.
Date of Government Version: 01/07/2020  
Source: -> Agency name here.  
Date Data Arrived at EDR: 01/09/2020  
Telephone: -> Phone here.  
Date Made Active in Reports: 02/06/2020  
Last EDR Contact: 01/06/2020  
Number of Days to Update: 28  
Next Scheduled EDR Contact: 04/20/2020  
Data Release Frequency: Varies
PFAS: PFAS Contamination Site Location Listing
PFOS and PFOA stand for perfluorooctane sulfonate and perfluorooctanoic acid, respectively. Both are fluorinated organic chemicals, part of a larger family of compounds referred to as perfluoroalkyl substances (PFASs).

Local Land Records
LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Records of Emergency Release Reports
HMIRS: Hazardous Materials Information Reporting System
HMIRS contains hazardous material spill incidents reported to DOT.

SPILLS: Reported Spills
Spills reported to the Spill Prevention, Preparedness and Response Division.

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Other Ascertainable Records
RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.</td>
<td>This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.</td>
<td>Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.</td>
<td>The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.</td>
<td>All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.</td>
</tr>
<tr>
<td>Date Data Arrived at EDR: 11/19/2019</td>
<td>Date Data Arrived at EDR: 11/10/2006</td>
<td>Date Data Arrived at EDR: 04/11/2018</td>
<td>Date Data Arrived at EDR: 02/03/2017</td>
<td>Date Data Arrived at EDR: 12/19/2019</td>
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<td>Date Made Active in Reports: 01/28/2020</td>
<td>Date Made Active in Reports: 01/11/2007</td>
<td>Date Made Active in Reports: 11/06/2019</td>
<td>Date Made Active in Reports: 04/07/2017</td>
<td>Date Made Active in Reports: 02/27/2020</td>
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<td>Number of Days to Update: 70</td>
<td>Number of Days to Update: 62</td>
<td>Number of Days to Update: 574</td>
<td>Number of Days to Update: 63</td>
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<tr>
<td>Source: U.S. Army Corps of Engineers</td>
<td>Source: USGS</td>
<td>Source: U.S. Geological Survey</td>
<td>Source: Environmental Protection Agency</td>
<td>Source: Environmental Protection Agency</td>
</tr>
<tr>
<td>Last EDR Contact: 02/19/2020</td>
<td>Last EDR Contact: 01/10/2020</td>
<td>Last EDR Contact: 01/09/2020</td>
<td>Last EDR Contact: 02/13/2020</td>
<td>Last EDR Contact: 12/19/2019</td>
</tr>
<tr>
<td>Next Scheduled EDR Contact: 06/01/2020</td>
<td>Next Scheduled EDR Contact: 04/20/2020</td>
<td>Next Scheduled EDR Contact: 04/20/2020</td>
<td>Next Scheduled EDR Contact: 05/25/2020</td>
<td>Next Scheduled EDR Contact: 04/06/2020</td>
</tr>
<tr>
<td>Data Release Frequency: Varies</td>
<td>Data Release Frequency: Semi-Annually</td>
<td>Data Release Frequency: N/A</td>
<td>Data Release Frequency: Varies</td>
<td>Data Release Frequency: Quarterly</td>
</tr>
</tbody>
</table>
EPA WATCH LIST: EPA WATCH LIST

EPA maintains a “Watch List” to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 02/03/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/07/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198
Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/20/2019
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 11/16/2018
Date Made Active in Reports: 11/21/2019
Number of Days to Update: 370
Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/05/2020
Next Scheduled EDR Contact: 06/01/2020
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 05/01/2019
Date Data Arrived at EDR: 10/23/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 84
Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/24/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Annually
ROD: Records Of Decision
Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 02/05/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 9
Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/04/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Annually

RMP: Risk Management Plans
When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/25/2019
Date Data Arrived at EDR: 05/02/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 21
Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/21/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System
RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35
Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 01/30/2020
Date Data Arrived at EDR: 02/06/2020
Date Made Active in Reports: 02/14/2020
Number of Days to Update: 8
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 03/04/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB’s who are required to notify the EPA of such activities.

Date of Government Version: 10/09/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 70
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/10/2020
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Annually
ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.
Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Next Scheduled EDR Contact: 04/20/2020
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.
Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.
Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.
Date of Government Version: 10/25/2019
Date Data Arrived at EDR: 10/25/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 82
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/21/2020
Next Scheduled EDR Contact: 05/04/2020
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.
Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 42
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/04/2019
Next Scheduled EDR Contact: 03/16/2020
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.
Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 02/27/2020
Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Varies
PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 02/07/2020
Next Scheduled EDR Contact: 05/18/2020
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 12/20/2019
Next Scheduled EDR Contact: 04/13/2020
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INS: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 10/01/2019
Date Data Arrived at EDR: 10/29/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 78

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/28/2020
Next Scheduled EDR Contact: 05/11/2020
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.
**GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING**

| Date of Government Version: 09/30/2019 | Source: Department of Justice, Consent Decree Library |
| Date Data Arrived at EDR: 10/09/2019 | Telephone: Varies |
| Date Made Active in Reports: 12/20/2019 | Last EDR Contact: 01/06/2020 |
| Number of Days to Update: 72 | Next Scheduled EDR Contact: 04/20/2020 |
| | Data Release Frequency: Varies |

**BRS: Biennial Reporting System**

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

| Date of Government Version: 12/31/2015 | Source: EPA/NTIS |
| Date Data Arrived at EDR: 02/22/2017 | Telephone: 800-424-9346 |
| Date Made Active in Reports: 09/28/2017 | Last EDR Contact: 02/27/2020 |
| Number of Days to Update: 218 | Next Scheduled EDR Contact: 04/06/2020 |
| | Data Release Frequency: Biennially |

**INDIAN RESERV: Indian Reservations**

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

| Date of Government Version: 12/31/2014 | Source: USGS |
| Date Data Arrived at EDR: 07/14/2015 | Telephone: 202-208-3710 |
| Date Made Active in Reports: 01/10/2017 | Last EDR Contact: 01/07/2020 |
| Number of Days to Update: 546 | Next Scheduled EDR Contact: 04/20/2020 |
| | Data Release Frequency: Semi-Annually |

**FUSRAP: Formerly Utilized Sites Remedial Action Program**

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

| Date of Government Version: 08/08/2017 | Source: Department of Energy |
| Date Data Arrived at EDR: 09/11/2018 | Telephone: 202-586-3559 |
| Date Made Active in Reports: 09/14/2018 | Last EDR Contact: 01/31/2020 |
| Number of Days to Update: 3 | Next Scheduled EDR Contact: 05/18/2020 |
| | Data Release Frequency: Varies |

**UMTRA: Uranium Mill Tailings Sites**

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

| Date of Government Version: 08/30/2019 | Source: Department of Energy |
| Date Data Arrived at EDR: 11/15/2019 | Telephone: 505-845-0011 |
| Date Made Active in Reports: 01/28/2020 | Last EDR Contact: 02/21/2020 |
| Number of Days to Update: 74 | Next Scheduled EDR Contact: 06/01/2020 |
| | Data Release Frequency: Varies |

**LEAD SMELTER 1: Lead Smelter Sites**

A listing of former lead smelter site locations.

| Date of Government Version: 01/30/2020 | Source: Environmental Protection Agency |
| Date Data Arrived at EDR: 02/05/2020 | Telephone: 703-603-8787 |
| Date Made Active in Reports: 02/14/2020 | Last EDR Contact: 03/04/2020 |
| Number of Days to Update: 9 | Next Scheduled EDR Contact: 04/13/2020 |
| | Data Release Frequency: Varies |

**LEAD SMELTER 2: Lead Smelter Sites**

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust.
US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)
The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

MINES VIOLATIONS: MSHA Violation Assessment Data
Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.
US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011  Source: USGS
Date Data Arrived at EDR: 06/08/2011  Telephone: 703-648-7709
Date Made Active in Reports: 09/13/2011  Last EDR Contact: 02/28/2020
Number of Days to Update: 97  Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 12/09/2019  Source: Department of Interior
Date Data Arrived at EDR: 12/11/2019  Telephone: 202-208-2609
Date Made Active in Reports: 02/27/2020  Last EDR Contact: 12/04/2019
Number of Days to Update: 78  Next Scheduled EDR Contact: 03/23/2020
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and ‘pointers’ to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/22/2019  Source: EPA
Date Data Arrived at EDR: 03/02/2020  Telephone: (206) 553-1200
Date Made Active in Reports: 03/02/2020  Last EDR Contact: 03/03/2020
Number of Days to Update: 89  Next Scheduled EDR Contact: 06/15/2020
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018  Source: Environmental Protection Agency
Date Data Arrived at EDR: 07/26/2018  Telephone: 202-564-0527
Date Made Active in Reports: 10/05/2018  Last EDR Contact: 02/21/2020
Number of Days to Update: 71  Next Scheduled EDR Contact: 06/08/2020
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017  Source: Department of Defense
Date Data Arrived at EDR: 01/17/2019  Telephone: 703-704-1564
Date Made Active in Reports: 04/01/2019  Last EDR Contact: 01/13/2020
Number of Days to Update: 74  Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.
FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

AIRS (EMI): Washington Emissions Data System
Emissions inventory data.

ASBESTOS: Asbestos Notification Listing
Asbestos sites

COAL ASH: Coal Ash Disposal Site Listing
A listing of coal ash disposal site locations.

DRYCLEANERS: Drycleaner List
A listing of registered drycleaners who registered with the Department of Ecology (using the SIC code of 7215 and 7216) as hazardous waste generators.

Financial Assurance 1: Financial Assurance Information Listing
A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.
Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/19/2019
Date Data Arrived at EDR: 11/25/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 64
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: Varies

Source: Department of Ecology
Telephone: 360-407-6754
Last EDR Contact: 02/10/2020

Financial Assurance 3: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/15/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 01/04/2018
Number of Days to Update: 45
Next Scheduled EDR Contact: 05/25/2020
Data Release Frequency: No Update Planned

Source: Department of Ecology
Telephone: 360-407-6136
Last EDR Contact: 02/10/2020

INACTIVE DRYCLEANERS: Inactive Drycleaners
A listing of inactive drycleaner facility locations.

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 10/17/2019
Date Made Active in Reports: 12/27/2019
Number of Days to Update: 71
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Annually

Source: Department of Ecology
Telephone: 360-407-6732
Last EDR Contact: 01/13/2020

WA MANIFEST: Hazardous Waste Manifest Data
Hazardous waste manifest information.

Date of Government Version: 03/29/2019
Date Data Arrived at EDR: 03/29/2019
Date Made Active in Reports: 06/24/2019
Number of Days to Update: 87
Next Scheduled EDR Contact: 03/30/2020
Data Release Frequency: Annually

Source: Department of Ecology
Telephone: N/A
Last EDR Contact: 12/12/2019

NPDES: Water Quality Permit System Data
A listing of permitted wastewater facilities.

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 10/17/2019
Date Made Active in Reports: 12/27/2019
Number of Days to Update: 71
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Quarterly

Source: Department of Ecology
Telephone: 360-407-6073
Last EDR Contact: 01/15/2020

UIC: Underground Injection Wells Listing
A listing of underground injection wells.

Date of Government Version: 10/15/2019
Date Data Arrived at EDR: 10/17/2019
Date Made Active in Reports: 12/27/2019
Number of Days to Update: 71
Next Scheduled EDR Contact: 04/27/2020
Data Release Frequency: Quarterly

Source: Department of Ecology
Telephone: 360-407-6143
Last EDR Contact: 01/15/2020

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System
EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR’s researchers. Manufactured gas sites were used in the United States from the 1800’s to 1950’s to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR’s review was limited to those categories of sources that might, in EDR’s opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as “High Risk Historical Records”, or HRHR. EDR’s HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR’s review was limited to those categories of sources that might, in EDR’s opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as “High Risk Historical Records”, or HRHR. EDR’s HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives
RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Ecology in Washington.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176
Source: Department of Ecology
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Ecology in Washington.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/10/2014
Number of Days to Update: 193
Source: Department of Ecology
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank
The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Ecology in Washington.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176
Source: Department of Ecology
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

KING COUNTY:

LF KING: Abandoned Landfill Study in King County
The King County Abandoned Landfill Survey was conducted from October through December 1984 by the Health Department’s Environmental Health Division at the request of the King County Council. The primary objective of the survey was to determine if any public health problems existed at the predetermined 24 sites.

Date of Government Version: 04/30/1985
Date Data Arrived at EDR: 11/07/1994
Date Made Active in Reports: N/A
Number of Days to Update: 0
Source: Seattle-King County Department of Public Health
Telephone: 206-296-4785
Last EDR Contact: 10/21/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SEATTLE COUNTY:

LF SEATTLE CITY: Abandoned Landfill Study in the City of Seattle
The Seattle Abandoned Landfill Survey was conducted in June and July of 1984 by the Health Department’s Environmental Health Division at the request of the Mayor’s Office. The primary objective of the survey was to determine if any public health problems existed at the predetermined 12 sites.

Date of Government Version: 07/30/1984
Date Data Arrived at EDR: 11/07/1994
Date Made Active in Reports: N/A
Number of Days to Update: 0
Source: Seattle - King County Department of Public Health
Telephone: 206-296-4785
Last EDR Contact: 10/21/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SEATTLE/KING COUNTY:
This report presents the Seattle-King County Health Department's follow-up investigation of two city owned and
four county owned abandoned landfills which was conducted from February to December 1986.

SNOHOMISH COUNTY:

LF SNOHOMISH: Solid Waste Sites of Record at Snohomish Health District
Solid waste disposal and/or utilization sites in Snohomish County.

TACOMA/PIERCE COUNTY:

LF TACOMA/PIERCE: Closed Landfill Survey
Following numerous requests for information about closed dumpsites and landfills in Pierce County, the Tacoma-Pierce
County Health Department decided to conduct a study on the matter. The aim of the study was to evaluate public
health risks associated with the closed dumpsites and landfills, and to determine the need, if any, for further
investigations of a more detailed nature. The sites represent all of the known dumpsites and landfills closed
after 1950.

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be
complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the
area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily
mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through
transporters to a TSD facility.

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.
Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association’s annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.
Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Daycare Center Listing
Source: Department of Social & Health Services
Telephone: 253-383-1735

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Ecology
Telephone: 360-407-6121

STREET AND ADDRESS INFORMATION

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APPENDIX C

Table of Wells Located in Wellhead Protection Areas (from Department of Ecology database)
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August 2020

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township_nr

range_nr

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section_nr

qtr_section_cd

qtr_qtr_section_cd

well_comp_dt

county_nm

well_type_cd

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6 BARRY HANKINS

23

8 E

10 NE

SE

30204 King

W

well_log_recv_dt

tax_parcel_nr

ST_PLANE_XCOORD_NR

ST_PLANE_YCOORD_NR
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6 BERNICE KASTNER

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14 NE

SW

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37455

1332464

784890

336397

A051435

50

6 BERNICE KASTNER

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BILL HAND
BILL LAATSCH
BILL STRAIT
BILL VALENTINE
BIONED INC
BLUE HILL LLC
BOB EASTER
BOB KAAKE
BOB YERKES
BOYD BURICS
BOYD BURICS
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The Riley Group
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<td>35</td>
<td>36508</td>
<td>382101</td>
<td>King</td>
<td>W</td>
<td>36538</td>
<td>1332101</td>
<td>362408</td>
</tr>
</tbody>
</table>
Example Landowner Communication Letter
Appendix D: Sample Notification Letters

Example Letter 1  To local jurisdictions / agencies

Dear (Agency/Local Government):

We are writing to let you know that businesses or facilities you regulate are in our public water system wellhead protection area. Please take all reasonable steps to ensure that land use activities within this area do not contaminate our drinking water sources.

Our water company has 450 service connections, and serves about 1,071 people. The Washington State Department of Health rated our system as “highly susceptible.”

The enclosed map shows the 6-month and 1-, 5- and 10-year time-of-travel boundaries for our wellhead protection area. We’re also sending you a list of the facilities or activities of concern. Any groundwater contamination that occurs within this wellhead protection area has a high potential to reach our well.

Thank you for your support in protecting our drinking water.

Sincerely,

Example Letter 2  To potential source owners/operators

Dear (Owner/Operator):

To protect the drinking water supply for the customers of Taylor’s Gulch Water System, we are developing a wellhead protection program as required by state law. As part of our wellhead protection program, we mapped the area overlying the short-term recharge zone of our drinking water supply wells. This is called our wellhead protection area.

Following the mapping of the wellhead protection area, we conducted an inventory of potential groundwater contamination sources within the area. The nature of your business and its location within our wellhead protection area means that your activities have the potential to affect our customers’ drinking water supply.

We have notified the agency or agencies that regulate(s) your type of business/facility that you are in our wellhead protection area. You should contact them to request technical assistance to help manage your business in a way that will best prevent groundwater contamination. We realize you are already careful to protect the environment as you conduct your business. We hope that learning that you are in our wellhead protection area will result in more precautions to ensure that your activities will not affect our drinking water quality.

Sincerely,
NORTH BEND MITIGATION OPERATION AND MONITORING PLAN

Submitted to:

Law Offices of Thomas Pors
On behalf of
City of North Bend

Submitted by:

Golder Associates Inc.
18300 NE Union Hill Road, Suite 200
Redmond, Washington 98052

Nicole DeNovio
Senior Project Hydrogeochemist

Robert H. Anderson
Senior Hydrologist, Principal

May 24, 2007

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Appendix A  Mitigation Functions
1.0 INTRODUCTION

1.1 Purpose/Objectives

The monitoring and operations plan will be used by the City staff to assist in the operation of Mt. Si Springs, Well NB-3 and mitigation sources required as part of the new water right. The current understanding of mitigation system components is provided as background. This plan provides a detailed explanation of data collection activities and mitigation calculations needed to operate the mitigation system.

The City will send reports to Ecology documenting the monitoring and operation of the mitigation system. Quarterly reports will be provided for the first two years, and annual reports thereafter. The reports will include the monitoring measurements, mitigation algorithm calculations, depletion calculations, and all data supporting the calculations. The mitigation algorithm and associated inputs will be revised, as necessary, after the first two years of operations and then every 6 years to be consistent with Water System Plan updates.

1.2 Background

The City of North Bend has been studying the Snoqualmie Aquifer and River basin for many years in support of its water right application, G1-26617. Studies and reports used to develop the operating procedures include:

- **Water Comprehensive Plan and Water System Demand Forecast**: Current and projected future water use for the City of North Bend. Also includes current operating procedures related to water conservation and emergencies (North Bend, 2002; North Bend, 2004).
- **Forecasting Report**: Projections of future annual water demand, instream flow triggers, and forecasts of potential mitigation requirements (Golder, 2004).
- **Amended Mitigation Plan**: An overview of Phase I mitigation sources and the mitigation goals and objectives (Pors, 2007).
- **Mitigation System Capacity Memo**: A simple, comprehensive, and very conservative spreadsheet model used to evaluate the availability of Hobo Springs and Sallal Wells as mitigation supplies (PGG, 2006).
- **Hydrogeologic Report**: Aquifer drilling and testing of Well NB-3, the new water supply well for the City of North Bend (Golder, 2007a).
- **Mitigation Report**: A series of mitigation curves developed to predict the aggregated daily depletion using a range of aquifer properties identified from aquifer testing in Golder (2007a). This analysis also includes the assumptions and results of the modeling and analysis used to determine the availability of the mitigation sources to meet 100% of the daily mitigation requirement using Hobo Springs and Sallal Wells (Golder, 2007b).

The studies and reports listed above provide the foundation necessary for the operation and monitoring associated with the new water right.

1.3 Mitigation Concept and Regulatory Considerations

Water appropriated from Well NB-3 is in hydraulic continuity with the Snoqualmie River and is therefore subject to minimum instream flow levels established for the river (WAC 173-507). When regulatory instream flows for the Snoqualmie River at Snoqualmie Falls, Carnation or Monroe USGS...
stream gauging stations are not met, water from another source will be added to the river to replace the net streamflow depletion resulting from the use of water from the new groundwater source.

The net stream depletion (amount of mitigation water) will be calculated by subtracting the wastewater treatment plant (WWTP) return flows from the maximum predicted volume of aggregated depletion. Net stream depletion will be mitigated by discharging water to Boxley Creek from the available mitigation sources (Hobo Springs and/or Sallal Wells) through the operation of remote switches and valves to control the flow.

The operation and monitoring plan focuses on the two, Phase I, mitigation sources ((1) Hobo Springs and (2) Sallal Wells) to mitigate for the impacts from Well NB-3. Additional Phase II mitigation sources may be developed by the City depending on future analyses and permitting, including: (3) the upper Snoqualmie Deep Aquifer, and (4) surface water from the Tolt River purchased from SPU. The operation and monitoring plan will be updated to reflect these new sources of mitigation water as they are developed.
2.0 SYSTEM DESCRIPTION

This section describes the primary pieces of the mitigation system: minimum instream flow requirements, groundwater resources, mitigation sources and engineering components. The Snoqualmie River streamflows and instream flow requirements identify when the City will need to mitigate for its net stream depletion. The initial mitigation sources include Hobo Springs and the Sallal Wells. In order to implement the mitigation system, the City will need to connect Hobo Springs and the Sallal wellfield to Boxley Creek.

2.1 Snoqualmie River Instream Flow Requirements

The City of North Bend is located between the Middle and South Forks of the Snoqualmie River, downstream from where Boxley Creek joins the South Fork of the Snoqualmie River (Figure 2-1). There are three stream gauges downstream of the City of North Bend on the Snoqualmie and Snohomish Rivers, these include:

- Snoqualmie Gauge (12144500): Snoqualmie River near Snoqualmie, WA. Data are available online at http://waterdata.usgs.gov/nwis/inventory/?site_no=12144500.&
- Carnation Gauge (12149000): Snoqualmie River near Carnation, WA. Data are available online at http://waterdata.usgs.gov/nwis/inventory/?site_no=12149000.&
- Monroe Gauge (12150800): Snohomish River near Monroe, WA. Data are available online at http://waterdata.usgs.gov/nwis/inventory/?site_no=12150800.&

These three gauges are also instream flow control points that will be used as minimum instream flow trigger locations (WAC 173-507) (Figure 2-2). The USGS currently monitors the real-time flow at the three gauges, and this information will be conveyed to the City’s Public Works Department via telemetry each morning. Instream flows that do not meet established minimum requirements will “trigger” mitigation measures by the City (See Section 3.2). Table 2-1 lists the instream flow requirements at each gauge.

2.2 North Bend Water Production Sources

The current source of production water for North Bend is Mt. Si Springs at the base of Mt. Si. The City captures the groundwater before it surfaces near the base of Mt. Si using a buried pipe/intake manifold. The captured water is then piped by gravity to a pump station where the water is treated with chlorine and pumped into the water system that serves North Bend and its service area. The City is required to facilitate the flow of 3 cfs from the spring to the North Fork of the Snoqualmie River. Any water in excess of this 3 cfs is available for diversion into the City’s water system to the limits established by water right certificate S1-00620C (336 acre-feet/year and 3.25 mgd instantaneous). The City’s current diversion capabilities are limited by its pumping capacity at the pump station and the hydraulic capacity of the transmission main. The pump station currently pumps at about 750 gpm with one pump and 1,200 gpm with two pumps running simultaneously. The bypass water from the spring forms a pond, and flows into a tributary to the North Fork Snoqualmie River just upstream of its confluence with the Middle Fork Snoqualmie River (Garrow, 2007a).

A second production source, Well NB-3, is a shallow aquifer well at the Public Works Department site (Figure 2-1). Water from Well NB-3 will be directed to two water systems: the City of North Bend and Sallal Water Association. The water is of a high quality with no indicators as measured in accordance with the Clean Water Act. The planned capacity of the well is 2,500 gpm (Garrow, 2007a). North Bend will control supply to Sallal by means of valving at the Well NB-3 site. The Valley Floor Intertie will connect North Bend’s system with Sallal’s water system.
2.3 Return Flow to Snoqualmie River (WWTP)

Wastewater collected by the City from its residential and commercial customers is treated at the City's wastewater treatment plant (WWTP). The City uses secondary treatment methods to produce high quality water that meets or exceeds applicable standards established by Washington State Department of Ecology (WDOE) and U.S. Environmental Protection Agency (US EPA). The water discharged to the South Fork Snoqualmie River is monitored in accordance with the WDOE-issued discharge permit for the WWTP and the results are reported to WDOE each month (Garrow, 2007b).

Flow from the WWTP that is discharged to the South Fork Snoqualmie River is measured by a flow meter on the outfall pipe. This flow meter (totalizer) is read daily, in the mornings, with flows measured to the nearest 10,000 gallons. The results are recorded manually on a Discharge Monitoring Report (DMR) and sent to WDOE each month.

2.4 Mitigation Sources

The proposed initial mitigation sources are: (1) groundwater from Hobo Springs purchased from Seattle Public Utilities (SPU) and (2) groundwater from Sallal Wells purchased from the Sallal Water Association. Additional mitigation sources that may be available to the City depending on future analyses and permitting include: (3) the upper Snoqualmie Deep Aquifer (to the extent scheduled testing and analysis support its availability and utility as a mitigation source), and (4) surface water from the Tolt River purchased from SPU. Figure 2-3 provides a relative timeline for the development of each mitigation source. Figure 2-4 provides the locations of the initial mitigation sources.

2.4.1 Hobo Springs

Hobo Springs flow is the primary source of mitigation. Flows at Hobo Springs are captured through a large concrete box with a weir at the outlet. The concrete box contains an intake structure attached to the pipe that serves as an emergency source of fireflow for SPU. Any water that is not diverted to the intake structure exits the box at the weir. The weir is monitored with a transducer and the flow is recorded by the City of North Bend. Based on the existing record, it appears that Hobo Springs will likely provide approximately 3 cfs during July through October most years without any modifications (Golder, 2007b). However, flows will likely drop below 3 cfs during fall and winter of dry years (Golder, 2007b).

Based on field observations of Hobo Springs, only a portion of the total Hobo Springs flow is currently captured in the spring collection box and measured at the weir (Figure 2-5). Based on these observations, Hobo Springs’ collection system may be enhanced to generate more mitigation capacity for the City of North Bend in the future.

2.4.2 Sallal Wells

A second groundwater source of mitigation is available to North Bend by agreement with Sallal Water Association. Two of Sallal’s existing municipal wells (Sallal Wells #01 and #02) are located in close proximity to the pipeline that will connect Hobo Springs to Boxley Creek, and will be tied into the same pipeline to deliver mitigation water. The Sallal Wells are located in the Cedar River watershed near Rattlesnake Lake (Figure 2-4).
The Sallal Water Association's municipal water right is 696 AFY (G1-24671C), of which up to 35% (243.6 AFY) will be available to North Bend for mitigation purposes as a supplement to the Hobo Springs source. During periods when low flows are anticipated from Hobo Springs, Sallal will designate one of the wells to mitigation production and 20 to 25% of production from the second well as necessary (Pancoast, 2006). With all of the Sallal Well capacity in place, North Bend will have instantaneous access to at least 800 gpm with expansion to at least 1,000 gpm from the Sallal Wells.

2.4.3 Deep Aquifer

A future source of flow mitigation is augmentation from a deep, semi-confined aquifer in the Snoqualmie Valley. The proposed augmentation concept is based on withdrawal of some portion of the storage capacity of the deep aquifer during the summer only. The aquifer would be "rested" and allowed to recharge during the winter. The concept will reduce, but not necessarily eliminate the need for contracted mitigation water from SPU and Sallal. For example, deep aquifer mitigation may not provide mitigation during winter and may not provide 100% of mitigation during some periods in summer months, although combined with other mitigation sources it is expected to increase flexibility and extend the adequacy of other mitigation sources for at least several years.

The potential mitigation water available from this source has not been determined because aquifer studies and analyses are not yet complete.

2.4.4 Long Tolt

The Tolt Pipeline option involves possible diversion of water from SPU's Tolt Reservoir via a gravity pipeline that would convey water to the upper portion of the North Fork Snoqualmie watershed. The water from the Tolt Reservoir would be purchased by the City of North Bend through the existing wholesale agreement with SPU that supports the Hobo Springs mitigation source. Water would be discharged to the North Fork Snoqualmie River at the confluence with Deep Creek. Permits and easements for the Long Tolt project would be obtained at such time that the City predicts that its municipal growth requires this project to supplement its mitigation supplies. The consequence of not obtaining necessary approvals and constructing this project is that the City's growth could be limited. The City's new water rights are expected to have a condition that limits the City's municipal use of new water rights to the quantity for which it has installed and permitted capacity to mitigate for instream flow impacts in real time. The timing and volume of water delivered to the North Fork Snoqualmie would be further analyzed to ensure that mitigation water reaches the confluence of the North Fork and Middle Fork Snoqualmie coincident with the impact of pumping from Well NB-3.

2.5 New Transmission Infrastructure

2.5.1 Municipal Water System

The existing transmission pipe from the Mt. Si Springs pump station to the distribution system in the City will be unaffected by the new water right.

The City of North Bend drilled a new production well on the North Bend Public Works property. The new production well will be designed with a capacity of 2,500 gpm. The well facilities will include the well pump, piping and hydraulic controls, well house, emergency generator, electrical, HVAC, site features and piping, and the point of connection to the existing system for the new production well.
The intertie with Sallal will be designed with a capacity of 1,000 gpm. The intertie facilities will include flow metering, control and isolation valves, booster pumps, and telemetry.

2.5.2 Mitigation Conveyance System

The Sallal Mitigation Pipeline will be connected to the transmission line that links Hobo Springs and Boxley Creek (Figure 2-6). The existing Hobo Springs intake structure is currently connected to a 6-inch waterline that originally supplied water to the community of Cedar Falls and still provides an emergency source of fireflow to Seattle Public Utilities. An additional waterline was later connected to this system to serve the Sallal Water Association through a booster pump station, which is now abandoned. The waterline and booster pump station are not in sufficient condition to provide water for the mitigation project, nor would they provide the capacity necessary for the maximum mitigation case. Therefore, the existing 6-inch pipe that originally supplied water to the community of Cedar Falls and still provides an emergency source of fireflow to Seattle Public Utilities will be replaced with approximately 8,700 of 16-inch pipe at the intake structure connection. The mitigation line will be 16-inch throughout the entire length of the line.

The Seattle Public Utilities 6-inch emergency fireflow line will be reconnected to the mitigation line. The existing abandoned booster pump station will be demolished, and a new mitigation booster pump station will be constructed on the Iron Horse Trail near the western terminus of the trail. A new meter facility will also be added at this site in order to meter mitigation flow rates. From the booster pump station, the new mitigation line will extend 4,600 feet to a metered outfall at Boxley Creek. The outfall will be engineered to reduce erosion from discharge into Boxley Creek.

The mitigation line will also include a connection to an existing 12-inch waterline that was once used to provide the Sallal system with water from the Masonry Pool adjacent to Chester Morse Lake. This waterline will be reconnected to Sallal's distribution system and will be used to provide water from a Sallal production well nearby. An intertie containing a meter and valves will be installed between the Sallal distribution system and the mitigation line to monitor and control the amount of mitigation water provided by Sallal.

2.6 New North Bend/Sallal Intertie

The new transmission main from Well NB-3 will be connected to an intertie located at the boundary between North Bend and the Sallal Association water purveyors. It will be equipped with telemetry and monitoring equipment to remotely measure flow through the intertie.

The intertie will function as a normal wholesale supply line from North Bend to Sallal. However, in emergencies, water will be able to flow the reverse direction from Sallal into the North Bend system by means of valve operations.
3.0 MONITORING REQUIREMENTS

The City will monitor water production, streamflow, return flows from the WWTP, and mitigation contributions using remote sensors and data loggers that will be connected to the mitigation and production sources. The City will be responsible for monitoring and data collection on a daily basis regardless of whether Well NB-3 was pumped or if instream flows were met. Monitoring must occur on a daily basis because mitigation water, when needed, will be discharged on a daily basis, and the mitigation requirement is based on aggregated impacts from the previous 20 days (Golder, 2007b). The City will input the data into a database each day which will determine the mitigation requirement for the day (Section 4.2).

Table 3-1 lists the monitoring responsibilities of the Public Works Department staff including the components to monitor, the parameters to monitor, and the primary and back-up modes of transmitting the data. A diagram of the monitoring locations is provided in Figure 3-1. More detailed monitoring information for each component is provided below.

3.1 Water System Monitoring

Currently, the City monitors several parameters of its Mt. Si Springs water system on a daily basis. These include pump run times, power usage, total flow pumped from the spring, pounds of chlorine used for treatment, continuous water levels in the storage tanks, and the level of the pond downstream of the Mt. Si Spring intake manifold. These measurements are usually taken in the morning of each day. The readings are done manually and kept on a paper log except for the tank water levels which are kept on a circular log graph.

Modifications to the water system proposed as part of the current water right application would enable water production to be remotely monitored with information conveyed telemetrically to the Public Works Department to facilitate decision making for water resource management at a centralized location. Similarly, the information from the other sources of water for both production and mitigation would be transmitted in the morning of each day to the Public Works Department. The data will be stored in an electronic format for quick review, interpretation with the mitigation algorithm, and water system planning.

3.2 WWTP Flow Monitoring

Flow from the WWTP to the South Fork Snoqualmie River is measured by a flow meter on the outfall pipe. This flow meter (totalizer) is read daily in the mornings with flows measured to the nearest 10,000 gallons. The results will be recorded manually on a DMR and transmitted to the Public Works Department in the morning of each day by e-mail or other reliable means. Monitoring provides the return flows for the previous day, not the mitigation day. As a result, the return flows are recorded to provide a means of estimating the daily WWTP return flow during future operations, as discussed below.

For mitigation volumes to reflect the net stream depletion on the day of interest, the WWTP return flows for the new water right will be estimated using the following equation:

\[
V_{\text{wwp}} = V_{\text{NR}} \times f_{\text{wwp}}, \text{ where}
\]

\[
V_{\text{wwp}} = \text{volume of water returned from wastewater treatment plant}
\]

\[
V_{\text{NR}} = \text{annual volume of water from new water right}
\]
\( f_{\text{wtp}} = \) percentage of annual produced volume from new water right that is returned to the river as WWTP flows divided by days in the year.

The running 12 month total volume of water from the new water right \( V_{\text{NR}} \) will be updated daily. The \( f_{\text{wtp}} \) factor is based on the fraction of total water demand that is returned to the river. Initially, \( f_{\text{wtp}} \) will equal to 0.60 and will be updated with revisions to the operation manual (Section 6.5) or more frequently if necessary using the last six years of continuous data. The initial value for \( f_{\text{wtp}} \) is based on an analysis of four years of summer return flows (2000 – 2003) (Golder, 2004). Golder (2004) determined that the fraction of water returned to the river from the WWTP (relative to annual pumping rates) is lowest during the summer months. Using this fraction year-round for predicting return flows ensures that mitigation calculations are conservative.

The \( f_{\text{wtp}} \) is calculated based on an annual volume of water. However, actual water use varies seasonally (indoor use results in lower water consumption versus outdoor use which results in higher consumption), and therefore, the return flows reflect a smaller percent of the water that is used during the summer because demand is higher and a higher percent during the winter because demand is lower. \( V_{\text{wtp}} \) will be calculated each day.

### 3.3 Streamflow Monitoring

A new City telemetry system which accesses data at USGS gauges 12144500, 12149000 and 12150800 will provide the real-time streamflow data. The telemetry system will download the available instantaneous measurements recorded by each USGS gauge. The minimum measurement during the previous 24 hours will be compared to the minimum instream flow requirement for that day to determine if the instream flow requirement would not be met. If the telemetry system malfunctions, then the City staff would download the data available online. The USGS gauge data that will be used is provisional and subject to revision. The gauge height reading is reported to the nearest hundredth of a foot and the streamflow calculated using a rating curve. However, it is the best available source of data at that time and will be used to determine mitigation triggers. Mitigation will not be subject to revised data.

### 3.4 Groundwater Monitoring

Well NB-3 will be monitored with a transducer to record aquifer drawdown and a totalizer meter to record the daily production volume. The pump run times and instantaneous flow from the well will also be monitored. The data will be transmitted to the Public Works Department telemetrically each morning.

The City will also conduct a 72-hour constant rate pump test within the first two years of implementing the mitigation system. During the pump test, Well NB-3 will be pumped at the maximum safe capacity that can be received by the water system and all of the pumped water will be discharged to a closed water system or outside the radius of influence of the well. The results of the pump test will be analyzed to update estimated transmissivity and storativity and will be reported to WDOE. Future testing will use a similar monitoring system to previous Well NB-3 testing. Results will be used to update transmissivity and storativity, reported to WDOE, and if necessary used to update the mitigation algorithm.
3.5 Hobo Springs Monitoring

Water levels behind the existing weir will continue to be monitored using a pressure transducer to determine flow rates over the weir. The water level at the weir will be translated into a flow rate using a weir equation developed from previous analyses of Hobo Springs data. The transducer will take measurements at a preset time increment of 60 minutes and the data will be transmitted via telemetry.

Masonry Pool elevation will also be downloaded from the USGS data inventory site at least once a week so that the City of North Bend will be able to approximate the average monthly flows at Hobo Springs one month in advance. This will help the City to adequately prepare for low Hobo Springs flows, if necessary.

3.6 Sallal Water System Monitoring

The new transmission main from the new production well will intertie with Sallal’s water system. A flow meter and totalizer on the transmission pipe to Sallal will be monitored daily. Additionally, data will be transmitted telemetrically to the Public Works Department from the Sallal Mitigation Pipeline to facilitate remote operation for supplemental discharge of mitigation water from Sallal wells to Boxley Creek. The Sallal Water Department will inspect the Sallal mitigation intertie as needed.

3.7 Mitigation Water Monitoring

The City will monitor the flow through the outfall pipe into Boxley Creek using a totalizer that will be read at least weekly. This information, along with the streamflow information received from the Boxley Creek gauges (USGS gauges 12143700 and 12143900), will be used to monitor the effectiveness of the stream augmentation. In addition, the instantaneous flow though the mitigation transmission pipeline at Hobo Springs and the intertie with Sallal will be monitored via telemetry (see Sections 2.5.2). Daily mitigation volumes will be calculated by summing the instantaneous flow data. Field inspections will be completed at least monthly to identify potential maintenance issues.
4.0 MITIGATION OPERATIONS AND ALGORITHM

4.1 Operating the Mitigation System

Figure 4-1 outlines the steps required to operate the mitigation system. A discussion of the three-step process is provided below.

4.1.1 Step 1: Daily Monitoring

Every morning, the City will monitor production during the previous 24 hours at Mt. Si Springs, Well NB-3, WWTP flows, USGS streamflow gauges, Hobo Springs flows, Sallal mitigation pipeline flows, and mitigation water flows into Boxley Creek. The data will be conveyed via telemetry to the Public Works Department from Mt. Si Springs, Well NB-3, the USGS gauges, Hobo Springs, the Sallal Water System, and the Boxley Creek outfall. The WWTP totalizer will be read each morning and the data reported to the Public Works Department. Masonry Pool elevation data will be retrieved online once a week. The data collected during this time period is used to determine the mitigation requirements for the previous day’s pumping at Well NB-3.

4.1.2 Step 2: Mitigation Algorithm

The mitigation algorithm defines the rules and calculation methods for determining the daily mitigation requirement under reasonably foreseeable scenarios. The proposed mitigation algorithm includes Hobo Springs and Sallal Well sources of mitigation water (Figure 4-2). The mitigation algorithm will be updated if additional mitigation sources are added and may be updated based on new pump test information.

The first step in the process outlined in Figure 4-2 is to determine the source of the water produced by the City in the preceding 24 hours. If 100 percent of the produced water \( V_{24} \) was from the senior Mt. Si Springs water right, then there is no mitigation requirement from this withdrawal. However, if any of the produced water \( V_{24} \) from the previous 20 days is from the new water right, then it is necessary to calculate the volume of the water produced from the new water right \( V_{NR} \). The total groundwater withdrawal from Well NB-3 is then used to calculate the aggregated stream depletion based on groundwater withdrawals from the previous 20 days. The streamflow and instream flow requirements at each of the three USGS gauges are also compared each day to determine if the minimum instream flow requirements at each of the three USGS gauges are met (See Table 2-1). If the instream flows are met, then there is no mitigation requirement. However, if the instream flows are not met, then it is necessary to determine the daily volume of mitigation water needed to offset net stream impacts.

The maximum stream depletion of water resulting from the new groundwater withdrawals is defined as the maximum aggregated stream depletion resulting from model calculations. The set of mitigation functions used to calculate the maximum aggregated stream depletion is provided in Appendix A. The mitigation volume is equal to the maximum aggregated stream depletion minus the WWTP return flows.
NET STREAM DEPLETION = Maximum Aggregated Stream Depletion – WWTP Return Flow.

The net stream depletion is calculated on a daily basis. The City will input the necessary data into a database that will calculate the net stream depletion. The database will store all of the necessary water system information to calculate mitigation needs (based on the mitigation functions provided in Appendix A) and assist the water system operators in decision making related to the mitigation system. This database may also be used to compile data and assist in preparation of mitigation system reports to satisfy mandatory reporting requirements. An overview of the database inputs and outputs is included in Figure 4-3.

The daily mitigation volume (net stream depletion) is converted into a daily rate so that it can be compared to the Hobo Springs flow. If there is adequate Hobo Springs flow (Q_{h} > Q_{m}) then Hobo Springs can supply the entire mitigation requirement. However, if there is inadequate flow from Hobo Springs, then it is necessary to calculate the volume of mitigation water needed from the Sallal Wells. The daily rate of mitigation water needed from the Sallal Wells is the difference between Hobo Springs flow and the daily rate of mitigation. This daily rate (Q_{d}) is then converted to a volume and added to the total annual Sallal water production volume. This volume (V_{s} + total annual Sallal water production) is compared to the water right capacity of the Sallal water right. If the volume is less than the annual capacity of the water right, then the two mitigation sources can mitigate 100 percent of the net stream depletion resulting from the new water right. If the volume is greater than the capacity, the production from Well NB-3 will be limited to the mitigation capacity provided by Hobo Springs and the Sallal Wells. This would require the possible development of an additional mitigation source or implementation of the City’s water consumption curtailment plan.

4.1.3 Step 3: Supply Mitigation Water

Under normal operating procedures, the City will supply the calculated volume of mitigation water (V_{M}) within the next 24 hours. Any delays in obtaining the necessary information to calculate the previous day’s mitigation requirement will require Q_{M} to be recalculated from V_{M} using a smaller amount of time and will be available through the database calculations. For example, if the calculations are completed two hours late, then Q_{M} is calculated using a period of 22 hours or 1320 minutes: Q_{M} = V_{M}/1320. If normal operating procedures are not possible to maintain (e.g., there is an emergency), then the part of the daily aggregated mitigation requirement that is unfulfilled is added to the mitigation requirement for the next possible day. The rate and volume of mitigation water from each mitigation source will be monitored when in use. Water delivery to Boxley Creek will also be monitored. If monitoring indicates that the City has under-mitigated during normal operations, then the unmitigated volume is added to the next day’s mitigation requirement. See Section 5 for more details on monitoring requirements.

Mitigation water will be supplied from either Hobo Springs or from Sallal Wells. The aggregate volume of mitigation water will be added using remote switches and valves at one or both of the available mitigation sources to provide flows to the Snoqualmie River via Boxley Creek. See Figure 2-6 for a schematic of the mitigation supply outfall into Boxley Creek.
5.0 OTHER OPERATIONAL CONSIDERATIONS

5.1 Maximum Mitigation Capacity

The availability of the water from the mitigation sources (Golder 2007b) is limited by the capacity of Hobo Springs and Sallal Wells. Table 5-1 shows the projected instantaneous mitigation supply available from the Hobo Springs and Sallal Wells mitigation sources after 21 years of growth. These projections were calculated using conservative assumptions (See Golder, 2007b). Information collected during system operation and monitoring may extend the projected time that the maximum mitigation capacity could satisfy the mitigation needs associated with the new water right.

The predicted mitigation needs may be reduced through improvements to the water management system. Optimization of the supply and mitigation system will occur as more data are collected during operation, especially during the first 5 years. The utilization of Well NB-3 and the mitigation system components will undergo constant monitoring, and these data will be used to refine operations and/or adjust mitigation functions to achieve the mitigation requirements. The need for development of new mitigation sources, including expansion of Hobo Springs capacity, will be considered regularly during water system plan updates and can easily be accomplished within 10 years, giving the City ample time to match its actual growth with mitigation source capacity (Golder, 2007b).

5.2 Contingency Responses

Emergencies that would require contingency responses range from a lack of supply to mechanical failure of the system. Procedures to manage and remedy common emergencies due to mechanical failures associated with the mitigation supply system and a reduced mitigation water supply are described below.

5.2.1 Mechanical Failures

Mechanical failures will be promptly addressed and repaired. In the event of a power failure, Puget Power will be contacted to determine the length of the power outage. If the power outage substantially affects the mitigation capability, demand reduction measures will be initiated. The storage capacity of the existing water supply can supply three days of average daily use when the three reservoirs are full.

There are four types of gauges or meters that are vital to the operation of the production and mitigation sources: the USGS streamflow gauges, the Hobo Springs transducer, Mt. Si Spring totalizer, and the production well totalizer. If any of these measuring devices fail, then the previous day's data will be used to determine whether mitigation water is needed and to calculate the volume of mitigation water needed. In addition, if the database is unavailable, then the previous day's mitigation requirement will be continued on that day and every day until the database is available. The database will be a redundant system that will be backed up regularly. Any problems with the database will be fixed as soon as possible.

The City does not have the ability to fix the USGS gauge, but will inform the USGS if the gauge appears to be malfunctioning. It is unlikely that all three USGS gauges would fail at the same time. The high correlation among the gauges to identify when instream flows are not met will ensure that if one or two of the gauges are malfunctioning, the useable gauge(s) would provide the necessary information to determine if instream flows are met (Golder, 2007b). This will help ensure that all of the impacts are mitigated. The City will fix the Hobo Springs transducer or production well totalizer as soon as possible. If needed, an employee can measure Hobo Springs flow manually.
An engineering failure associated with the conveyance network or the Sallal Well or pump would also require action by the City. The City will be responsible for fixing engineering failures associated with its infrastructure within a reasonable time period, including any failures associated with the Boxley Creek mitigation supply. The City will also add the unmet part of the aggregated mitigation requirement to the mitigation requirement for the next possible mitigation day. If there are issues with Sallal’s wells or pump, then the City will inquire as to when the issue is expected to be fixed.

5.2.2 Demand Reduction Measures

There are different procedures forremedying a reduction in mitigation water supply depending on the number of sources that are impacted. If supply is only reduced by one mitigation source, then the alternate source(s) can be used until supply is restored. Since these interruptions in supply are anticipated to be short term, the SPU/Hobo Springs and Sallal water sources should be capable of meeting mitigation requirements while the other source is temporarily unavailable. In addition, the City will have approximately one month to prepare for a reduction in supply from Hobo Springs because of the early warning system that the Masonry Pool elevation provides (Golder, 2007b).

If the mitigation supply is unavoidably reduced, customers will be alerted of the situation and the City’s emergency water shortage plan (adopted by the City Council) will be implemented. This plan includes mandatory curtailment of discretionary water uses. Also, the Sallal/North Bend intertie will be activated for flow into North Bend (Garrow, 2007b). The City’s emergency response plan is described in its Comprehensive Water System Plan (North Bend, 2002), and Table 5-2 is the emergency phone list.

5.3 Water Use Efficiency

Conservation measures can be implemented to help meet the increased demand for water by using existing supplies more efficiently. Based on North Bend’s comprehensive Water Plan, the supply agreement between North Bend and Seattle Public Utilities and the State’s 2003 Municipal Water Law, North Bend will implement conservation efforts to optimize use of water, reduce inefficiencies in the conveyance of the water, and reduce demand by its customers (Garrow, 2007b). Conservation measures undertaken by the City include leak detection, changes and replacements to equipment (e.g., replacement and repair of source and individual meters), capital improvements (e.g., improvements at the WWTP), improved maintenance schedules, utility rate structure changes in 1999, water conservation messages at the local and regional levels, and distribution of conservation kits to residential water users (North Bend, 2002). Based on the Conservation Program Goals in the 2002 Water System Comprehensive Plan, the City of North Bend estimates a 10% reduction in water use from conservation measures (North Bend, 2004).

5.4 Water System Plan Updates

The City of North Bend’s Water System Plan is updated every six years. The last update was in 2002, and the plan is approved through April 15, 2008 (North Bend, 2002). The water system plan provides a long-term planning strategy for the City’s water utility over six and twenty-year planning periods. Updates to the water system plan will enable the City to revise the projected mitigation supply capacity (Golder, 2007b) and ensure that there will be adequate mitigation water available for the new water right over the long-term. The mitigation algorithm and operations plan will be updated as needed with each revision.
6.0 REPORTING REQUIREMENTS

6.1 Daily Mitigation System Documentation

Implementation of the mitigation plan will require daily monitoring of water production from Mt. Si Springs, Well NB-3, Hobo Springs, and Sallal Wells; streamflow at the trigger locations; return flows from the WWTP; and mitigation contributions to Boxley Creek. Remote sensors and data loggers, connected to the mitigation and production sources, maintain data on flows and quantities of water produced, which will be reported on a periodic basis to WDOE to satisfy the conditions of the permit (See Sections 6.3 and 6.4). Streamflow data from the USGS gauging stations will be available to North Bend Public Works Department staff via the City’s new telemetry system which accesses USGS data. The Public Works Department will be responsible for recording all of the daily data into a database which will calculate the mitigation requirement as described in Section 4.2.

6.2 Event Reports

Event reports will be generated when the City misses a mitigation day, supplies insufficient mitigation volume, or has a water system failure. If the City misses a mitigation day or supplies insufficient mitigation volume, then the City will add that volume of water to the total mitigation volume required for the next day. A water system failure is any problem that compromises the ability to compute the mitigation algorithm. If the total volume of water produced in the preceding 24 hours is unknown (i.e., the totalizer number is unknown), then the City would mitigate using the highest level of pumping in the last three days. A report explaining the details of the event, the actions taken to ensure that mitigation was implemented, and how the City can prevent this problem in the future will be sent to WDOE within 30 days of the event. Event reports will be made available to interested stakeholders by Ecology upon request.

6.3 Initial System Reports

Quarterly reports will be generated for the first two years of operation. Reporting will be on an annual basis after the first two years. Reports will be sent to WDOE and made available to concerned stakeholders upon request.

Initial system reports will contain summary information about the mitigation operations on a daily and annual basis. The summary information will include a table detailing: 1) the daily cumulative volume of water produced from Well NB-3; 2) the net stream depletion of the volume of water produced from Well NB-3; 3) the number of days that mitigation water was required; 4) the volume of mitigation required and delivered from each mitigation source; 5) a catalog of incidents; 6) any planned improvements and; 7) data re-evaluation as Q_i (instantaneous quantity) and Q_a (annual quantity) limits are closer. The report will also briefly describe the status of the availability of the mitigation sources, including an update to the basic information contained in Figure 4-2.

Initial system reports will also be generated quarterly during the first two years operation of any new water supply or mitigation source.

6.4 Annual System Report

Annual reports will contain summary information about the mitigation operations on a daily and annual basis. The summary information will include a table detailing: 1) the daily cumulative volume of water produced from Well NB-3; 2) the net stream depletion of the volume of water produced from Well NB-3; 3) the number of days that mitigation water was required; 4) the volume of mitigation required and delivered from each mitigation source; 5) a catalog of incidents; 6) any planned improvements and; 7) data re-evaluation as Q_i (instantaneous quantity) and Q_a (annual quantity)
limitations are closer. The annual report will also briefly describe the status of the availability of the mitigation sources, including an update to the basic information contained in Figure 4-2.

6.5 Mitigation Operations Plan Update

The mitigation operations plan will be updated after the first two years of operation. All of the water monitoring and operations data from the mitigation supply system will be used to update the mitigation operations plan.

After the initial 2-year update, the mitigation operations plan will be updated once every six years to coincide with other water system plan updates. Optimization of the mitigation system will occur as more data are collected during operation, especially during the first 5 years. The mitigation capacity will also be updated using information incorporated for planning purposes and utilization of additional water right if demonstrated. The utilization of Well NB-3 and the mitigation system components will undergo constant monitoring, which will result in improved understanding of the mitigation supply and water use efficiency.
7.0 REFERENCES


TABLES
## TABLE 2-1

Instream Flow Requirements (WAC 173-507)

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### TABLE 2-1

Instream Flow Requirements (WAC 173-507)

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<th>Carnation (cfs)</th>
<th>Monroe (cfs)</th>
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### TABLE 2-1

Instream Flow Requirements (WAC 173-507)

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<th>Monroe (cfs)</th>
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## TABLE 3-1
Monitoring Responsibilities

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<th>Back-up Mode¹</th>
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<td>Daily water production, daily by-pass flows, daily total spring flow, and pump run times</td>
<td>Telemetry</td>
<td>Manual</td>
<td>North Bend Public Works Department</td>
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<tr>
<td>Well NB-3</td>
<td>Daily water production to North Bend, daily water production to Sallal, instantaneous flow, pump run times, and groundwater elevation</td>
<td>Telemetry</td>
<td>Manual</td>
<td>North Bend Public Works Department</td>
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<td>Daily discharge flow to river</td>
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<td>Telemetry</td>
<td>Online</td>
<td>USGS</td>
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<td>(Snoqualmie River near Snoqualmie)</td>
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<td>Instantaneous Streamflow</td>
<td>Telemetry</td>
<td>Online</td>
<td>USGS</td>
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<td>(Snoqualmie River near Carnation)</td>
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<td>Online</td>
<td>USGS</td>
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<td>(Snohom River near Monroe)</td>
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<tr>
<td>Hobo Springs weir</td>
<td>Instantaneous Flow</td>
<td>Telemetry</td>
<td>Manual</td>
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<tr>
<td>Hobo Springs pump</td>
<td>Daily water output, instantaneous flow, pump run times</td>
<td>Telemetry</td>
<td>Manual</td>
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<tr>
<td>Intertie with Sallal Wells</td>
<td>Instantaneous Flow, daily</td>
<td>Telemetry</td>
<td>Manual</td>
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<tr>
<td>Outfall pipe into Boxley Creek³</td>
<td>Total Flow, at least weekly</td>
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<td>Online</td>
<td>USGS</td>
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<td>(Boxley Creek near Edgewick)</td>
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NOTES

1. Manual readings will be communicated to the North Bend Public Works Department staff via email or other reliable means. Online data collection will be performed by the North Bend Public Works Department staff.
2. The Masonry Pool elevation data will be downloaded weekly.
3. The totalizer on the outfall pipe into Boxley Creek will be read at least weekly.
TABLE 5-1
Instantaneous Mitigation System Water Supply after 21 Years of Projected North Bend Growth

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<thead>
<tr>
<th>Month</th>
<th>$Q_h$, Minimum, mgd</th>
<th>Max $Q_m$, mgd</th>
<th>Required Sallal $Q_i$, mgd</th>
<th>Sallal Available $Q_i$, mgd</th>
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<td>0.38</td>
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<td>0.52</td>
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NOTES
Abbreviations: mgd = million gallons per day; $Q_h$ = minimum daily Hobo Springs discharge; $Q_m$ = mitigation requirement; $Q_i$ = instantaneous discharge
Source: Golder (2007b)
### TABLE 5-2
Emergency Phone List

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<td>Water System Supervisor</td>
<td>Pat Osborne</td>
<td>1-425-888-0486 (during normal working hours)</td>
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<tr>
<td>Water System Operator</td>
<td>Fergus McGrath</td>
<td>1-425-736-7697 (for emergency purposes after</td>
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<td></td>
<td>working hours)</td>
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<td>King County Fire District No. 38 (business)</td>
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<td>1-425-392-3433</td>
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<td>1-800-321-4123</td>
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<td>1-206-888-0282</td>
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<td>1-800-533-4171</td>
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<td>Golder Associates, Inc.</td>
<td>Redmond Main Number</td>
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### NOTES
Source: North Bend (2002)
FIGURES
Figure 2-2
Instream Flow Control Points

Legends:
- Well Location
- Gauge Location

Map Projection:
Washington State Plane, North Zone, NAD 83, Feet
Source: Golder, USGS

Monroe Gauge
USGS Gauge 12150800

Carnation Gauge
USGS Gauge 12149000

Snoqualmie Gauge
USGS Gauge 12144500

NB-3

This figure was originally produced in color. Reproduction in black and white may result in a loss of information.
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<td>Deep Groundwater*</td>
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<td>Hobo Springs Expansion</td>
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<tr>
<td>Long Tolt* (If necessary)</td>
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</tbody>
</table>

**Legend**

- Operational
- Design/Construction
- Planning/Permitting

All planning permitting and design complete. Construction/operation depending on need

*Requires additional investigation.
This figure was originally produced in color. Reproduction in black and white may result in a loss of information.

FIGURE 2-4
MITIGATION SOURCES
POR/NS/BEND 2006 MITIGATION/WA

LEGEND

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Map Projection:
Washington State Plane,
North Zone, NAD 83, Feet

Source: USGS
STEP 1: MORNING FLOW DATA COLLECTION - DAILY

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<th>Components Monitored</th>
<th>Actions to be Taken</th>
<th>Use in Mitigation Algorithm?</th>
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<tr>
<td>Mt. Si Springs water production and Well NB-3 water production in previous 24 hours</td>
<td>Calculate the total volume</td>
<td>$V_{24}, V_{ER}, V_{NR}$</td>
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<td>Adjust allowable Mt. Si Spring pumping to meet senior water right conditions on by-pass flow.</td>
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<td>Wastewater Treatment Plant flow from previous 24 hours</td>
<td>Report and catalog</td>
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<td>USGS gauge 12144500 instantaneous flow</td>
<td>Compare minimum during previous 24 hours to instream flow requirement</td>
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<tr>
<td>USGS gauge 12149000 instantaneous flow</td>
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<tr>
<td>Hobo Springs flow</td>
<td>Use the measurement in the morning</td>
<td>$Q_m$</td>
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<tr>
<td>Intertie with Sallal Wells</td>
<td>Calculate total volume over previous 24 hours</td>
<td>No</td>
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</table>

STEP 2: CALCULATE DAILY AGGREGATE MITIGATION REQUIREMENT

Follow the procedure in Figure 4-2 using the data collected in Step 1.

STEP 3: SUPPLY MITIGATION WATER

Water will be supplied from the initial mitigation sources, Hobo Springs and Sallal Wells. Under normal operating procedures, the City will supply the calculated volume of mitigation water ($V_m$) within the next 24 hours. Any delays in obtaining the necessary information to calculate the previous day’s mitigation requirement will require $Q_m$ to be recalculated from $V_m$ using a smaller amount of time. For example, if the calculations are completed two hours late, then $Q_m$ is calculated using a period of 22 hours or 1320 minutes: $Q_m = V_m/1320$. If normal operating procedures are not possible to maintain (e.g., there is an emergency), then the part of the daily mitigation requirement that is unfulfilled is added to the next possible day’s mitigation requirement.
Mitigation Algorithm

Used to Determine Mitigation Requirement

- Is 100% of $V_{SM}$ withdrawal from Mt. Si Springs?
  - No
  - Yes

  - Determine the volume of water from new water right:
    $V_{NR} = V_{SM} - V_{ER}$
  - Determine the net consumptive use:
    $V_{C} = V_{NR} - [V_{wtrp} \times \text{days in year}]$
  - Add $V_{C}$ to annual North Bend groundwater production.

  - Are Minimum Instream Flows met at each of 3 USGS gauges?
    - No
    - Yes

    - No Mitigation Requirement for this Withdrawal

Daily mitigation volume is the maximum aggregated river depletion from previous 20 days of pumping:

$V_{MD} = V_{D1} + V_{D2} + V_{D3} + \ldots + V_{D20}$

Net river depletion calculated as:

$V_{MD} - V_{wtrp} = V_{M}$

Daily rate of mitigation:

$Q_{M} = V_{M}/1440$

- Is the Hobo Springs flow less than the daily rate of mitigation ($Q_{H} < Q_{M}$)?
  - Yes
  - No

  - Adequate Hobo Springs Source

Sallal water needed to mitigate $Q_{S} = Q_{SM} - Q_{H}$

Calculate Sallal water needed: $V_{S} = Q_{S} \times 1440$, add $V_{S}$ to the total annual Sallal water production.

- Does Sallal have adequate water right capacity for mitigation?
  - No
  - Yes

  - New water right production limited to mitigation capacity
  - Adequate Mitigation Capacity

Mitigation Algorithm Key

- $V_{NR} =$ Annual volume of water from new water right.
- $V_{SM} =$ Daily volume of water produced by NB in preceding 24 hours.
- $V_{ER} =$ Annual volume of water from existing Mt. Si water right.
- $V_{C} =$ Annual net consumptive use from new water right.
- $V_{wtrp} =$ Daily volume of water returned from waste water treatment plant associated with new water rights.
- $V_{MD} =$ Daily maximum aggregated depletion calculated using mitigation curves.
- $V_{M} =$ Daily volume of stream depletion occurring from pumping one day ago.
- $V_{SM} =$ Daily mitigation volume, the net stream depletion from previous 20 days.
- $Q_{S} =$ Daily rate of discharge to Boxley Creek from Sallal Wells (gpm).
- $V_{H} =$ Daily volume of mitigation water from Sallal Wells.
- $Q_{M} =$ Daily rate of required mitigation water discharge for next 24 hours (gpm).
- $Q_{H} =$ Daily rate of discharge to Boxley Creek from Hobo Springs (gpm).
Note: * If the database is unavailable, then use the mitigation algorithm to calculate mitigation requirements (Figure 4-2) or the previous day's results.
APPENDIX A

MITIGATION FUNCTIONS
# TABLE A-1

Mitigation Curve Naming Key and Parameter Summary

<table>
<thead>
<tr>
<th>Mitigation Curve Description</th>
<th>Transmissivity (ft²/day)²</th>
<th>Storativity³ (dimensionless)</th>
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NOTES
1. Unless otherwise noted, storativity is equal to the median storativity calculated using the referenced transmissivity and is recorded in the "Storativity" column.
2. Transmissivity values from Golder (2007a) pump tests of Well NB-3.
3. Storativity is calculated using aquifer diffusivity (T/S) and corresponding transmissivity values. Median diffusivity = 3,487 ft²/min; maximum diffusivity = 5,070 ft²/min; minimum diffusivity = 1,774 ft²/min.

Source: Golder (2007b)
# TABLE A-2

Mitigation Functions

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<td>2.23%</td>
<td>1.71%</td>
<td>1.38%</td>
<td>1.14%</td>
<td>0.98%</td>
<td>0.77%</td>
<td>0.77%</td>
<td>0.70%</td>
<td>0.65%</td>
<td>0.62%</td>
<td>0.59%</td>
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NOTES

1. Unless otherwise noted, storativity is equal to the median storativity calculated using the referenced transmissivity and is recorded in the "Storativity" column. See Table A-1 for a list of the maximum and minimum storativity values.
APPENDIX R

WATER SHORTAGE PLAN
ORDINANCE 1723

AN ORDINANCE OF THE CITY OF NORTH BEND, WASHINGTON, APPROVING AND ADOPTING A WATER CONSERVATION CODE UNDER NORTH BEND MUNICIPAL CODE CHAPTER 13.50; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, the City of North Bend desires to conserve the precious resource of water as an integral part of implementing the Sustainability Element of the Comprehensive Plan by supporting the local economy while preserving environmental quality (Comp Plan Policy E. 1. Local Economy and Environmental Quality); and

WHEREAS, NBMC 13.12.220 authorizes the City to prohibit using water for irrigation or lawn sprinkling purposes when there is a water shortage but provides neither a water conservation education or a water rebate program to assist citizens in conserving water; and

WHEREAS, the City Council desires to promote water conservation primarily through education and not regulation, to reward water users who conserve this resource and provide tools to assist citizens to reduce water use through a water rebate program; and

WHEREAS, the Sallal Water Association currently provides water service within North Bend that is not subject to any water conservation controls and this ordinance will address that deficiency; and

WHEREAS, state law requires municipal water suppliers such as the North Bend Water Utility to adopt and implement water use efficiency and conservation programs. See Chapter 90.03 RCW; WAC 246-291-140; and

WHEREAS, this ordinance will also benefit City water customers because using water efficiently helps reduce water and sewer bills. The City’s goal is to achieve compliance with water conservation primarily through education, including the use of an expanded rebate program to reward water savings, but also when necessary to have enforcement tools to preserve and protect this valuable natural resource; and

WHEREAS, it is the desire of the City of North Bend to proactively conserve water to provide environmental leadership and stewardship over this precious resource; and

WHEREAS, the City Council held a Public Hearing on this matter on June 2 and 16, 2020;
NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF NORTH BEND, WASHINGTON, DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. NBMC Chapter 13.50 (Water Conservation), Adopted: A New Chapter 13.50 of the North Bend Municipal Code (Water Conservation) is hereby adopted as set forth in Exhibit A, attached hereto.

Section 2. Severability: Should any section, paragraph, sentence, clause or phrase of this ordinance, or its application to any person or circumstance, be declared unconstitutional or otherwise invalid for any reason, or should any portion of this ordinance be pre-empted by state or federal law or regulation, such decision or pre-emption shall not affect the validity of the remaining portions of this ordinance or its application to other persons or circumstances.

Section 3. Effective Date: This ordinance shall be published in the official newspaper of the City, and shall take effect and be in full force five (5) days after the date of publication.


CITY OF NORTH BEND:  

_____________________________   ______________________________
Rob McFarland, Mayor    Michael R. Kenyon, City Attorney

APPROVED AS TO FORM:

ATTEST/AUTHENTICATED:

______________________________
Susie Oppedal, City Clerk

Published:  June 26, 2020
Effective:  July 1, 2020
## Chapter 13.50
**WATER CONSERVATION**

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EXHIBIT A

13.50.000 Purpose/Intent/Goals

A. The purpose and intent of this chapter is to encourage water conservation for our environment and for future generations. Water conservation helps protect a shared natural resource and retains more water in the Snoqualmie River and other rivers and bodies of water for fish, wildlife and other environmental benefits. Conservation of this limited natural resource also stretches our valuable water supply to meet the needs of citizens within our urban growth area ensuring that we will have sufficient beneficial use and mitigation water for all future generations. This ordinance will also benefit city water customers because using water efficiently helps reduce water and sewer bills. The City’s goal is to achieve compliance with water conservation primarily through education but when necessary to have enforcement tools to preserve and protect this precious natural resource. The City Council is exercising its broad police powers to protect the public health, safety and welfare by adopting this conservation ordinance in order to ensure the continued delivery of safe and reliable drinking water to existing and future water customers and to ensure the protection of water as a finite natural resource.

B. Goals. The goal of this chapter is to reduce general water use to achieve the purposes described in Section 13.50.000(A).

13.50.005 Definitions.

A. “Base Allocation” means the amount of water allocated to each customer class for both interior and exterior use on a monthly or billing cycle basis.

B. “Best Management Practice (BMP)” means a policy, program, practice, rule, regulation ordinance or the use of devices, equipment or facilities that result in more efficient use or conservation of water.

C. “Certified Landscape Irrigation Auditor” means a person certified to perform landscape irrigation audits by a professional trade organization or other educational organization.

D. “City” means the city of North Bend, Washington.

E. “City Administrator” means the City Administrator of the City or their designee unless otherwise stated or indicated by context.
F. “City Customer” means a customer of the City Water System located within the corporate limits of the City of North Bend or a customer of the Sallal Water Association located within the corporate limits of the City of North Bend.

G. “City Water System” means those facilities within and without the City that are within the City’s Water Service Area or within its Urban Growth Area as defined by the Washington State Growth Management Act.

H. “Coordinated Water Plan” means the 1990 East King County Coordinated Water System Plan prepared and adopted consistent with Chapter 36.94 RCW and Title 13 of the King County Code.

I. “Customer” means any person or entity using water supplied by the City or the Sallal Water Association within the City’s Urban Growth Area and within unincorporated King County and within the City’s Water Service Area. The term includes but is not limited to: tenants of single-family dwellings or duplexes, owners of real property and management companies responsible for property management of real property.

J. “Department” means the City of North Bend Public Works utilities department.

K. “Director” means the City’s Public Works Director or their designee.

L. “Fire Chief” means the fire chief of the Eastside Fire and Rescue Department or their designee.

M. “Irrigation Service” means a water service that is exclusively for landscape irrigation purposes.

N. “Gauge at Masonry Pool” means the gauge measuring the level of water at the Masonry Pool, the smaller body of water immediately upstream of the Masonry Dam.

O. “Non-City Customer” means a customer of the City Water System located outside the corporate limits of the City of North Bend.

P. “Nonresidential Customer” means a customer of the City’s water system on whose property a residence is not situated.

Q. “Person” means any person, business, firm, partnership, association, corporation, company, entity, or organization of any kind.
EXHIBIT A

R. “Residential Customer” means a Customer of the City or Sallal Water Association within the City on whose property, whether owned or rented, at least one person resides.

S. “Sallal Water Association” means a private member based association with a water service area within portions of the City and the City’s UGA.

T. “Significant” means more than a small, trivial or insignificant amount and requires a substantial amount of water being wasted or a significant adverse economic impact.

U. “Urban Growth Area” or “UGA” means a boundary created pursuant to the Washington State Growth Management Act (Chapter 36.70A RCW) within which the City is obligated to deliver “urban services,” including water service.

V. “Water Conservation” means the best management practices for the reasonable and efficient use of water for both indoor and outdoor water demands.

W. “Water Conservation Program Guidelines” means the program guidelines developed, maintained, and managed by the Director pursuant to this chapter.

X. “Water Service Area” means the boundaries of the City Water System as defined by the King County Utilities Technical Review Committee.

Y. “Wasteful Use of Water” is as defined in North Bend Municipal Code Section 13.50.050.

13.50.010 Application.
The provisions of this chapter shall apply to all Customers of the City and the Sallal Water Association within the corporate limits of the City.

13.50.020 City responsibility.
A. The City shall have the right to manage water demand for all Customers within the corporate limits of the City and for City Water System Customers outside of the corporate limits of the City but within the City’s Water Service Area.

B. Public Education Program and Public Efficiency Goals. The Director shall implement a public education program and a public process for establishing water efficiency goals in compliance with all applicable rules, regulations and laws.
13.50.030 Water conservation program
A. The Director is authorized to develop best management practices for water use and conservation.

B. The Director shall oversee this chapter’s implementation, compliance with best management practices, and any laws mandating water conservation.

13.50.035 Water Rebate Program

A. Toilets and Urinals. The Director shall implement a rebate program for the replacement of older toilets and urinals with efficient models as determined by the Director but specifically including WaterSense toilets and urinals and high-efficiency commercial flush-valve toilets.

B. Landscaping. The Director shall implement a landscape rebate program for any customer replacing existing non drought tolerant landscaping or lawns with drought tolerant landscaping as determined by the Director.

C. Irrigation. The Director will implement a rebate program for the replacement of automatic sprinkler systems with any efficient drip only irrigation system.

D. Rain Collection Barrels. The Director will implement a rebate program to provide any City Customer rain barrels to use in order to collect rain and stormwater for landscape irrigation purposes

E. Other Rebate Programs. The Director is authorized to implement any additional rebate program described in the Saving Water Partnership among the City of Seattle and other water utilities, which program is adopted by reference as now existing or later amended; provided, that this program and all rebate programs shall not be implemented unless the Finance Director determines the City Council approved budget provides sufficient funds in the water utility fund to pay for such rebate programs.

13.50.040 Base allocation of water.
The Director may develop a base allocation for each class of customer account, taking into account the needs and characteristics of each customer class. This base allocation may be used to evaluate compliance with the conservation stage in effect and to encourage the reasonable and efficient use of water. The Coordinated Water Plan provides for maximum per capita water use and is hereby incorporated herein by this
Ordinance 1723, Exhibit A

reference as now existing or hereafter amended. For residential customers, this base allocation shall be as follows:

(1) Lots of .75 acre or less, no more than 488 gallons of water per day (approximately 55.5 cubic meters or 1957 cubic feet per month) per household based upon the maximum per capita amount set forth in the Consolidated Water Plan; or

(2) Lots greater than .75 acres, no more than 586 gallons of water per day (approximately 66.6 cubic meters or 2348 cubic feet per month) per household;

provided, however, if a Customer has occupants exceeding the average of 2.8 persons per household, the Customer’s base allocation shall be increased pro rata based upon such additional persons and provided, further, if the Customer has a lot larger than 1 acre and believes that the size of the Customer’s lot results in exceeding the above average maximums, the Customer may file an appeal to the Director to increase this maximum allocation for these parcels.

13.50.050 Wasteful use of water.

Any of the following acts or omissions, whether intentional, unintentional, willful, or negligent, shall constitute the wasteful use of water:

A. Significant water flowing away from a property caused by excessive application(s) of water beyond reasonable or practical irrigation rates, duration of application, or other than incidental applications to impervious surfaces.

B. Causing or permitting a significant amount of water to discharge, flow, run to waste into or flood any gutter, sanitary sewer, water course or storm drain, or to any adjacent lot, from any tap, hose, faucet, pipe, sprinkler, or nozzle. In the case of irrigation, “discharge,” “flow” or “run to waste” means that water is applied to the point that the earth intended to be irrigated has been saturated with water so that additional applied water then flows over the earth. In the case of washing, “discharge,” “flow,” or “run to waste,” means that water in excess of that necessary is applied to wash, wet, or clean the dirty or dusty object, such as an automobile, sidewalk, or parking area.

C. Allowing water fixtures or heating or cooling devices to leak or discharge water after becoming aware of such leak or discharge, except as it applies to condensate drains.
D. Maintaining ponds, waterways, decorative basins, or swimming pools without water recirculation devices or with known leaks, both seen and unseen.

E. Discharging water from, and refilling, swimming pools, decorative basins, or ponds in excess of the frequency reasonably necessary to maintain the health, maintenance, or structural considerations of the pool, basin or pond, as determined by the Director.

F. Continued operation of an irrigation system that applies water to an impervious surface or that is in disrepair.

G. Use of a water hose not equipped with a control nozzle capable of completely shutting off the flow of water except when positive pressure is applied.

H. Irrigation of lawns or landscaping when it is raining.

I. Overfilling of any pond, pool, or fountain which results in water discharging from the pond, pool, or fountain.

J. Failure to contact a repair contractor and deliver a repair schedule to the City within five working days when a customer discovers or is notified of leaks in pipes, faulty sprinklers, or other water-related fixtures, unless the Director informs the Customer that the leak must be repaired more quickly, in which case the Customer shall use best efforts to repair the leak as soon as practicable.

K. Irrigating lawns or landscaping between the hours of 10:00 a.m. and 6:00 p.m., unless a variance is granted by the Director. Using a sprinkler, kiddy pool, water slide or other water recreational device on a lawn for short term recreational purposes shall not constitute “irrigation”.

L. Using potable water from the City Water System for compaction, dust control, or other construction purposes without first obtaining approval from the Director as provided in North Bend Municipal Code Section 13.50.080 and a meter from the City.

M. Installing a nonrecirculating system in any new automatic car wash or new commercial laundry system or failure to utilize current best management practices for water conservation that are industry standards.
N. A customer repeatedly exceeding their base allocation of water as described in Section 13.50.040 during stage two or stage three of conservation as described in Section 13.50.070.

**13.50.060 Determination of water conservation stages.**
In determining the City Water System’s water conservation stage, the Director shall determine whether that system’s water supplies available for potable/beneficial use and mitigation water are sufficient to meet the current customer demands on that system and shall consider, among other things:

A. any variations in the reliability of the water supplies available to the City Water System;

B. availability of nonpotable water to meet nonpotable demands on the City Water System;

C. the success, or lack thereof, of previous declarations of a less stringent water conservation stage in causing the water-use reductions sought by the City; and

D. any agreements between the City and local water purveyors for deliveries of additional water supplies to the City. The Director will select the necessary stage for conservation.

**13.50.070 Water use restrictions.**
Water use restrictions during the various conservation stages shall, at a minimum, be as listed below and may be augmented by other restrictions as determined necessary by the City Administrator.

A. During the stage one (basic stage, which will automatically occur each August 15) conservation stage, the following restrictions shall be enforced:

1. Water will be used for beneficial uses; all wasteful use of water is prohibited.

2. Water shall be confined to the Customer’s property and shall not be allowed to significantly run off to adjoining property or to the roadside ditch or gutter. Care shall be taken not to water past the point of saturation.

3. Free flowing hoses are prohibited for all landscape watering, vehicle and equipment washing, ponds, evaporative coolers and livestock watering troughs.
EXHIBIT A

Automatic shut-off devices shall be installed on any hose or filling apparatus in use for the foregoing or similar purposes.

4. All pools, spas, and ornamental fountains/ponds shall be equipped with a recirculation pump and shall be constructed to be leak proof. Pool draining and refilling shall be allowed only to the extent required for health, maintenance, or structural considerations, and must otherwise comply with all applicable federal, state, and local stormwater management requirements.

5. Irrigation of lawns and other landscaped areas is permitted without restrictions as to the day that watering can occur.

B. During the stage two (The Gauge at the Masonry Pool shall be at 1523 feet or less) conservation stage, the following restrictions shall be enforced:

1. All stage one (basic stage) restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.

2. Landscape and pasture irrigation, except drip irrigation, shall be limited to a maximum of three days per week based on the following odd-even schedule, except drip irrigation may be conducted on any day.
   
   a. Customers with street addresses that end with an odd number may irrigate only on Tuesdays, Thursdays, and Saturdays.

   b. Customers with street addresses that end with an even number may irrigate only on Wednesdays, Fridays, and Sundays.

   c. No irrigation is permitted on Mondays.

3. Hand and manual watering follows the same odd/even day schedule and may be done anytime during the day.

4. Washing of streets, parking lots, driveways, sidewalks, buildings or other hardscape surfaces is prohibited, except as necessary for health, sanitation or fire protection purposes.

5. Restaurants shall serve water only upon specific request.

Ordinance 1723, Exhibit A
6. Public and private streetscape landscaping (medians and frontage) may be watered only on the same schedule as Customers with street addresses that end with an even number.

7. No water from the City Water System shall be used for construction purposes such as dust control, compaction, or trench jetting, unless the use is approved by the Director.

C. During the stage three (The Gauge at the Masonry Pool shall be at 1517 feet or less) conservation stage, the following restrictions shall be enforced:

1. All stage two restrictions shall continue to be enforced, except to the extent they are replaced by more restrictive requirements imposed by this section.

2. Landscape and pasture irrigation, except drip irrigation, shall be limited to a maximum of one day per week based on the following odd-even schedule.

   a. Customers with street addresses that end with an odd number may irrigate only on Tuesdays.

   b. Customers with street addresses that end with an even number may irrigate only on Wednesdays.

   c. No irrigation is permitted on Mondays, Thursdays, Fridays, Saturdays and Sundays.

3. Public and private streetscape landscaping (medians and frontage) may be watered only on the same schedule as customers with street addresses that end with an even number.

4. No water from the City Water System shall be used to drain and refill swimming pools, artificial lakes, ponds, or streams and no new permits for swimming pools, artificial lakes, ponds or streams shall be issued until the water conservation stage has been declared to be stage one.

5. Water use for ornamental ponds and fountains is prohibited unless required to maintain existing vegetation, to sustain existing fish/animal life or as necessary for public health reasons.
6. New or expanded landscaping on properties is limited to drought-tolerant trees, shrubs, and ground cover and no new turf or grass shall be planted, hydro-seeded or laid.

7. Washing of automobiles or equipment shall be done at a commercial establishment that uses recycled or reclaimed water.

8. A customer shall contact a repair company to repair all water leaks within twenty-four hours of notification by the utilities department or service may be discontinued.

9. Flushing of sewers or fire hydrants is prohibited, except in case of an emergency and for essential operations.

10. Flushing of fire protection systems is prohibited, except during required maintenance or servicing of the system.

11. No water from the City Water System shall be used for construction purposes such as dust control, compaction, or trench jetting, unless the use is necessary for fire protection system testing, maintenance, or acceptance by the Fire Chief.

13.50.080 New Construction.

A. Construction Water. Water for construction purposes obtained from the City’s water supply may only be used within the City’s existing corporate boundary. Water for dust control, compaction, and other construction activities shall be subject to the following conditions:

1. Use of water from the City Water System for construction purposes shall require a City-issued construction water meter and a refundable security deposit that includes a monthly meter rental fee as established by the Department. Prior to such water use, the construction water customer must obtain approval from the Director to use the water for construction and agree to comply with all of the requirements of this chapter. The Director may impose such additional conditions on the use of such water, including, but limited to, conditions regulating the purpose for the use of the water, rate of use, location, frequency and quantity of use, and such other conditions as deemed reasonably necessary by the Director to effectuate the purposes of this chapter. The construction meter shall be located by
EXHIBIT A

the Department and shall only be relocated or removed by the Department. Unauthorized relocation or removal of a construction meter shall be deemed theft and the offender shall be subject to the penalties set forth in North Bend Municipal Code Section 13.50.170.

2. Construction water shall only be drawn through a construction water meter. Construction water drawn through an unmetered connection shall be deemed theft of water and shall be grounds for the deposit on the construction meter to be forfeited. The offender shall also be subject to the penalties specified in North Bend Municipal Code Section 13.50.150. In the event the person identified as drawing water without a metered connection does not have a meter, the action shall be deemed theft and the offender shall be subject to the penalties specified in North Bend Municipal Code Section 13.50.150.

3. These requirements for construction water use may be modified or supplemented by other conservation measures as determined appropriate by the Director for the declared conservation stage. The Director may terminate the approval granted to use the construction water based on water use restriction stages, violation of the terms and conditions of use, and/or for conduct that amounts to wasteful use of water.

B. New Construction Requirements.

1. Irrigation. All landscape beds, if irrigated, shall be irrigated with a drip irrigation system and not with an automatic sprinkler system.

2. Rain barrels. All gutters shall connect to rain barrels with hose bibs to allow a property owner to irrigate with storm water.

3. Landscaping. All new landscaping shall comply with other chapters of the NBMC and be drought tolerant to the greatest extent possible.

4. Commercial Construction. All commercial construction shall consider the use of on site underground vaults to collect stormwater for landscape irrigation and roof storm water collections to be used for landscape irrigation.
13.50.090 Irrigation system inspections.
All customers, public and private, with a parcel over one acre shall conduct an annual irrigation system inspection prior to the start of the irrigation season on May 1st of each year. This inspection shall be performed by a Certified Landscape Irrigation Auditor or licensed landscape or irrigation contractor and the results forwarded to the Department in accordance with the procedure outlined in the water conservation program guidelines. Single-family residences are exempt unless the Director determines there has been wasteful use of water on a customer’s premises and the owner has either not corrected the condition or contacted a contractor to correct the conditions within five days after the City provided written notification to discontinue such practice.

Customers that have a current irrigation system check-up on file with the Department will be allowed one courtesy water waste warning before being deemed in violation of this chapter.

13.50.120 Unauthorized water use.
A. An illegal connection to the City Water System shall either be metered by the property owner within the time specified by the Department or disconnected at the discretion and direction of the Director, and the offender shall be subject to the penalties specified in North Bend Municipal Code Section 13.50.150.

B. Unauthorized use of a fire hydrant, public or private, for anything other than fire flows or permitted and metered construction water shall subject the offender to the penalties specified in North Bend Municipal Code Section 13.50.150 and Chapter 8.36, North Bend Fire Code.

13.50.130 Violations declared a nuisance.
Any activity in violation of this chapter will adversely and seriously affect the public health, safety, and welfare, is hereby declared to be a public nuisance and may be remedied as provided in this chapter, any other applicable portion of the North Bend Municipal Code or applicable state law.

13.50.140 Enforcement.
A. This chapter shall be enforced pursuant to the provisions of this Chapter, Chapters 1.20 and 8.08 of the North Bend Municipal Code, and any other enforcement mechanism available to the City under the North Bend Municipal Code and/or applicable law.
B. Unless otherwise expressly provided in this chapter, the Director shall enforce the provisions of this chapter.

13.50.150 Notice and Penalties

A. The goal of the provisions of this chapter are to achieve voluntary compliance from the Customer, and the City will take reasonable measures to assure the Customer has information available to promptly and efficiently address water use issues. Where voluntary compliance cannot be achieved through initial contacts, education and warnings, then appropriate administrative penalties and further action are required. Except as otherwise provided herein, consecutive violations for the same condition causing such violation of any provision of this chapter during a calendar year shall be addressed as follows:

<table>
<thead>
<tr>
<th>Customer Contact</th>
<th>Notice or Penalty</th>
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<tbody>
<tr>
<td>First</td>
<td>Personal or written notification (or both) of the condition violating a provision of this Chapter with a request to correct the condition</td>
</tr>
<tr>
<td>Second</td>
<td>Written notification and issuance of a notice to correct violation. Penalty of up to $25 a day for City Customers and up to $50 a day for Non-City Customers, as defined</td>
</tr>
<tr>
<td>Third</td>
<td>Issuance of an administrative penalty up to $100 a day for City Customers and up to $200 a day for Non-City Customers, as defined; and/or other penalties as provided in the Notice of Violation and/or as determined by the Director</td>
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</tbody>
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B. Penalties.

1. Each of the remedies identified in Chapters 1.20 and 8.08 of the North Bend Municipal Code shall be available for enforcement of the provisions of this chapter. Each day a violation of this chapter continues, it shall be deemed a separate violation subject to the above penalties.

2. In addition to any other penalties provided by this chapter, if a Customer of the City Water System violates any of the water use restrictions during a stage two or three water conservation stage, and such conditions are not corrected within five days after the Customer is given written notice, the City is authorized to do any or all of the following:
EXHIBIT A

a. Meter any flat rate service connection and apply the regularly established metered rates. If the parcel has over two thousand five hundred square feet of landscaping, a separate landscape meter may be installed. Costs for the water meters and installation shall be paid by the property owner.

b. If the service is metered, the Customer shall be billed at twice the metered rate during the time that the violation continues. If more than two thousand five hundred square feet are irrigated and the parcel does not have a separate irrigation meter, then an irrigation meter may be installed. The Customer shall be billed at twice the metered rate during the time the violation continues. Costs for the water meter, and for any required cross-connection controls and installation, shall be paid by the property owner.

C. Appeal. Any appeal of administrative penalties imposed pursuant to this Chapter, any order to install a mandatory water meter, or any other orders or decisions of the Director shall be appealable to the City Administrator. Such appeal must be made to the City Clerk within fourteen (14) days of the Customer’s receipt of the notice of the penalties being appealed. Such appeal shall clearly state the factual and/or legal basis for such appeal and be accompanied by a $35.00 appeal fee. The City Clerk shall forward that appeal to the City Administrator, the Director, and the City Attorney. The City Administrator shall make best efforts to issue a decision on such appeal within thirty (30) days of the date such appeal is filed with the City Clerk. The City Administrator’s decision shall be the final administrative decision and there shall be no right of appeal to the City Hearing Examiner nor the City Council.

13.50.160 Remedies cumulative.
The remedies set forth in this chapter are cumulative to any other remedy available to the city. Pursuit of one remedy shall not preclude any other remedy, and nothing contained in this chapter shall limit or be deemed to prevent the city from pursuing any other remedy available to the city under the North Bend Municipal Code or other applicable law

13.50.170 Variances.
In unusual circumstances, application of this chapter may cause unnecessary hardships or results or adversely impact public recreational activities which promote economic development inconsistent with this chapter’s purposes and intent. Therefore, exemptions and variances to some of the requirements of this chapter may be appropriate as delineated below.
A. Exemption. The irrigation of recreational ballfields owned by a public agency or a private party, open to the general public and used for tournament purposes which promote tourism and economic activity are exempt from those portions of this chapter which would significantly interfere with delivering such public recreational services.

B. Authority to Grant Variances. The Director may grant variances from this chapter’s provisions during a stage one, two, or three conservation stage as specified in North Bend Municipal Code Section 13.50.070, Water use restrictions.

C. Other Variances. Customers who seek a variance from this chapter for any reason other than the needs of new landscaping, shall submit to the Department a written request for variance, setting forth, in detail, the extraordinary circumstances that support the application. The Director may approve the application in their discretion; provided, that the variance allows the applicant to use only the minimum amount of water in addition to that allowed by this chapter that the Director reasonably believes is necessary to satisfy the circumstances that support the application. Any such variance shall terminate one year after its issuance, subject to an application for its renewal.

13.50.180 Fire and other emergencies.
Nothing in this chapter limits or may be construed as limiting the availability of water for extinguishing fires, meeting the demands of any other similar emergency, or routine inspection and maintenance of fire hydrants.

13.50.190 City Council Review.
City staff will provide annual water reports to the City Council showing customers’ water use for the prior year in order for the City Council to determine the effectiveness of this chapter.
# TABLE OF CONTENTS

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**WATER SHORTAGE PLAN** .......................................................................................... 2  
  Stage 1 ......................................................................................................................... 2  
    Criteria ....................................................................................................................... 2  
    Conservation Measures ............................................................................................. 2  
  Stage 2 ......................................................................................................................... 3  
    Criteria ....................................................................................................................... 3  
    Conservation Measures ............................................................................................. 3  
  Stage 3 ......................................................................................................................... 3  
    Criteria ....................................................................................................................... 3  
    Conservation Measures ............................................................................................. 3
INTRODUCTION

The City of North Bend (City) has developed this water shortage plan in conjunction with City Ordinance 1723. The water shortage plan addresses the potential water shortages outlined in the City’s 2020 Water System Plan and in Golder Associates watershed and water demand modeling and analysis.

The City operates two water sources, Mount Si Springs and the Centennial Well. Each source has its own withdrawal limitations. Mount Si Springs has a minimum bypass requirement stipulating that 3 cubic feet per second of flow must pass over the weir and into the river. The Centennial Well hydraulically influences the Snoqualmie River and, during periods of low instream Snoqualmie River flow, mitigation water must be supplied as a condition of the water right. As of June 2020, the City’s sole functioning mitigation source is Hobo Springs, a spring source owned by Seattle Public Utilities (SPU). Water is purchased from SPU and is conveyed from Hobo Springs near Cedar Falls to Boxley Creek, a Snoqualmie River tributary.

In a typical year, the City’s water infrastructure and water rights can adequately support water demand including mitigation; however, in the event of a drought, the City’s water sources and the conditions governing their use may require increased measures to manage demands and keep them within the City’s available sources. The City’s Centennial Well draws from an aquifer that can influence the flow in the Snoqualmie River. During periods when instream flow targets are not met in the Snoqualmie River, the City is obligated to mitigate the well withdrawal as a condition of their water right. While periods of low instream flows can occur any time during the year, they often occur during the drier period near the end of summer and the beginning of autumn.

The available flow from Hobo Springs for mitigation is dependent upon the level of the Masonry Pool, which is managed by Seattle Public Utilities. The level decreases seasonally with the lowest level usually occurring in October with the corresponding minimum flows in Hobo Springs at this time. During a very dry year, the level of the Masonry Pool can drop to a point where the flow from Hobo Springs may decrease to where it cannot meet the full Centennial Well capacity. This was the case in 2015, a historically dry year, when the available mitigation water in Hobo Springs limited the amount that could be pumped from the Centennial Well.

In addition, during a drought, the available flows at Mount Si Springs can fall below the minimum 3.0 cubic feet per second, rendering the source inoperable for the City’s use for water production. Consequently, the City intends to use this Water Shortage Plan to ensure that the City’s water demands are managed within the City’s ability to fulfill their water right mitigation obligations.

The Water Shortage Plan identifies critical elevations of Masonry Pool at 1,550, 1,523 and 1,517 feet at which the various stages of the Water Shortage plan described below are implemented. When the water level reaches 1,550 feet, the Masonry Pool separates from
Chester Morse Pool, reducing the amount of water that could be conveyed through the hillside to Hobo Springs. At 1,523 feet, pool drawdowns typically increase as the water is used for stream augmentation purposes. At 1,517 feet, Hobo Springs water production is limited and may be below the capacity of the Centennial Well.

The City’s maximum daily water demand usually coincides with the hottest days of the year with customers use water for irrigation, recreation, and consumption. Decreasing these demand peaks during periods of limited mitigation supply is key to the City’s water management strategy. The goal of this water shortage plan is to clearly articulate the water shortage measures at each stage of the Water Shortage Plan. These measures and criteria are discussed in the following section.

**WATER SHORTAGE PLAN**

The City of North Bend’s Water Shortage plan has three stages which are triggered either by the elevation of Masonry Pool or in the case of Stage 1, by a calendar date. Each stage has associated specific conservation measures that the City will implement. These stages and the associated measures are summarized below. Note, for the most up to date criteria and detailed conservation measure please refer to the most recent water conservation city ordinance.

**STAGE 1**

**Criteria**

Stage 1 will be automatically triggered on August 15th of every year.

**Conservation Measures**

The water conservation measures for Stage 1 shall be the following:

- Water consumption is limited to beneficial uses.
- Water does not surpass saturation in an effort to avoid surface runoff off of a customer’s property.
- Automatic shut-off devices must be used on any free-flowing hose application.
- Recirculation pumps will be used with all pools, spas, and ornamental fountains/ponds.
- Irrigation of lawns and other landscaped areas may continue without restrictions.
STAGE 2

Criteria

Stage 2 will automatically be triggered when the Gauge at the Masonry Pool reads a level of 1,523 feet or less.

Conservation Measures

The water conservation measures for Stage 2 shall be the following:

- All Stage 1 measures will continue unless replaced by more restrictive requirements.
- All non-drip landscape and pasture irrigation (including hand watering) will be limited to a maximum of 3 days per week on designated days.
- All drip irrigation may be continued on any day.
- Washing of streets, parking lots, driveways, sidewalks, buildings or other hardscape surfaces is prohibited.
- Restaurants will only serve water upon specific request.
- Watering of public and private street landscaping is limited to a maximum of 3 days per week on designated days.
- No water from the City Water System shall be used for construction purposes unless otherwise approved.

STAGE 3

Criteria

Stage 3 will automatically be triggered when the Gauge at the Masonry Pool reads a level of 1,517 feet or less.

Conservation Measures

The water conservation measures for Stage 3 shall be the following:

- All Stage 1 and 2 measures will continue unless replaced by more restrictive requirements.
- All non-drip landscape and pasture irrigation shall be limited to a maximum of 1 day per week on designated days.

- Watering of public and private street landscaping is limited to a maximum of 1 day per week on designated days.

- No draining and refill swimming pools, artificial lakes, ponds, or streams.

- No new permits for swimming pools, artificial lakes, ponds or streams shall be issued until the water conservation stage has been declared to be Stage 1.

- Water cannot be used for ornamental ponds unless it is necessary to maintain existing vegetation, to sustain fish/animal life, or for public health purposes.

- Any new or expanded landscaping must be limited to drought-tolerant trees, shrubs, and ground cover.

- Automobiles can only be washed at commercial establishments that uses recycled or reclaimed water.

- A contractor must be contacted to fix any residential leaks within 24 hours of notification by the utilities department.

- Sewers or fire hydrants flushing will only occur in case of an emergency and for essential operations.

- No water from the City Water System shall be used for construction purposes unless deemed essential for fire prevention.
APPENDIX S

CAPITAL IMPROVEMENT PLAN
PROJECT COST ESTIMATES
ASSUMPTIONS FOR COST ESTIMATES

Tax rate 8.9%  
Contingency 20%  
Engineering and Administrative Costs 30%  
Mobilization, Cleanup and Demobilization 8% of subtotal without tax and contingency (round to $1000)

4-inch DI Water Pipe, Including Fittings $65 =UNIT PRICE  
6-inch DI Water Pipe, Including Fittings $70 =UNIT PRICE  
8-inch DI Water Pipe, Including Fittings $85 =UNIT PRICE  
10-inch DI Water Pipe, Including Fittings $100 =UNIT PRICE  
12-inch DI Water Pipe, Including Fittings $150 =UNIT PRICE  
16-inch DI Water Pipe, Including Fittings $180 =UNIT PRICE  
24-inch DI Water Pipe, Including Fittings $220 =UNIT PRICE  

Locate Existing Utilities 2.5% of subtotal without mobilization, tax and contingency (round to $1000)  
Erosion Control 2.5% of subtotal without mobilization, tax and contingency (round to $1000)

Additional Pipe Fittings (LBS)  
4 -inch 0.08 * Pipe Length=LBS (Round to 50 LBS)  
6 -inch 0.12 * Pipe Length=LBS (Round to 50 LBS)  
8 -inch 0.45 * Pipe Length=LBS (Round to 50 LBS)  
10 -inch 0.47 * Pipe Length=LBS (Round to 50 LBS)  
12 -inch 0.50 * Pipe Length=LBS (Round to 50 LBS)  
16 -inch 0.60 * Pipe Length=LBS (Round to 50 LBS)

UNIT PRICE $7.00 PER LB

Trench Safety Systems $5.00 per LF of Pipe Length  
4-inch Gate Valves $1,000 EA 2 Every 300 feet  
6-inch Gate Valves $1,200 EA 2 Every 300 feet  
8-inch Gate Valves $1,500 EA 2 Every 300 feet  
10-inch Gate Valves $2,200 EA 2 Every 300 feet  
12-inch Gate Valves $3,000 EA 2 Every 300 feet  
16-inch Butterfly Valves $10,000 EA 2 Every 600 feet  
18-inch Butterfly Valves N/A EA 2 Every 600 feet  
24-inch Butterfly Valves EA 2 Every 600 feet  
8-inch Tapping Tee & Valve $3,500 EA  
Hydrant Assembly $5,500 EA Every 400 feet

TRENCH WIDTH

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>WIDTH (ft)</th>
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<tbody>
<tr>
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<td>6</td>
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<tr>
<td>8</td>
<td>3.0</td>
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<td>10</td>
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<td>12</td>
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<tr>
<td>16</td>
<td>4.0</td>
</tr>
<tr>
<td>18</td>
<td>4.5</td>
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LANE WIDTH

| WIDTH (ft) | 12.0 |

Gravel Backfill  
Cost per CY $35.00  
CDF  
Cost per CY $150.00  
Foundation Gravel  
Cost per TN $35.00  
HMA Cl. 1/2 PG 58-22  
Cost per TN $200.00  
Sawcutting $4.00 = Cost per LF of sawcutting  
 Crushed Surfacing, Top Course  
Cost per TN $30.00  
Cold Mix Asphalt  
Cost per TN $170.00  
Connections to Existing System $6,000 EA  
3/4" Service Connections, complete $1,000 EA  
1-1/2" Service Connections, complete $2,000 EA  
Traffic Control $100 EA 8 HRS per 300 feet
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DISTRIBUTION SYSTEM IMPROVEMENT G-1
##### General AC Main Replacement Project

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
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<tbody>
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<td>$8,000</td>
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<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
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<td>$8,000</td>
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<td>5</td>
<td>Additional Pipe Fittings</td>
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<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
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</tr>
<tr>
<td>7</td>
<td>8-inch Gate Valves</td>
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<td>$1,500</td>
<td>$12,000</td>
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<td>8</td>
<td>Fire Hydrants</td>
<td>4 EA</td>
<td>$5,500</td>
<td>$22,000</td>
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<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>1,230 TN</td>
<td>$30</td>
<td>$36,900</td>
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<td>10</td>
<td>Foundation Gravel</td>
<td>80 TN</td>
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<td>HMA Cl. 1/2 PG 58-22</td>
<td>170 TN</td>
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<td>12</td>
<td>Sawcutting</td>
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<td>$4</td>
<td>$11,200</td>
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<td>13</td>
<td>Cold Mix Asphalt</td>
<td>64 TN</td>
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<td>14</td>
<td>Connections to Existing System</td>
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<td>15</td>
<td>3/4&quot; Service Connections, complete</td>
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<td>16</td>
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<td>56 HRS</td>
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Subtotal: .................................................................................................................................................. $347,818
Tax rate (8.9%) ........................................................................................................................................ $30,956

Subtotal: .................................................................................................................................................. $378,774
Contingency (20%) ..................................................................................................................................... $76,226

TOTAL ESTIMATED CONSTRUCTION COST: .......................................................... ........................................ $455,000

Engineering and Administrative Costs (30%): .......................................................... .......................... $136,500

TOTAL ESTIMATED PROJECT COST: .......................................................... ........................................ $592,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### STORAGE IMPROVEMENT ST-1
##### 0.5 MG I-90 Reservoir Recoating and Improvements

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Mobilization, Cleanup, and Demobilization</td>
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<td>$36,000</td>
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<td>$8,000</td>
<td>$8,000</td>
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<tr>
<td>3</td>
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<td>$8,000</td>
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<tr>
<td>4</td>
<td>Exterior Reservoir Prep and Recoating</td>
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<td>LS</td>
<td>$120,000</td>
<td>$120,000</td>
</tr>
<tr>
<td>5</td>
<td>Interior Reservoir Prep and Recoating</td>
<td>1</td>
<td>LS</td>
<td>$150,000</td>
<td>$150,000</td>
</tr>
<tr>
<td>6</td>
<td>Containment</td>
<td>1</td>
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</tr>
<tr>
<td>7</td>
<td>Removal of Mill Scale</td>
<td>4,000</td>
<td>SF</td>
<td>$3</td>
<td>$12,000</td>
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<td>8</td>
<td>Ladder Security and Intrusion Switches</td>
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<td>Seismic Vault and Flexible Connections</td>
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<td>TN</td>
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<tr>
<td>11</td>
<td>General Restoration</td>
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</table>

Subtotal: $489,000
Tax rate (8.9%): $43,521
Subtotal: $532,521
Contingency (20%): $106,479

TOTAL ESTIMATED CONSTRUCTION COST: $639,000
Engineering and Administrative Costs (30%): $191,700
TOTAL ESTIMATED PROJECT COST: $831,000

ENR Construction Cost Index = 12,117 (Feb 2020)
CITY OF NORTH BEND  
PRELIMINARY PROJECT COST ESTIMATE  
STORAGE IMPROVEMENT ST-2  
0.75 MG Forster Woods Reservoir Recoating and Improvements

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<th>ITEM</th>
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<th>AMOUNT</th>
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<td>LUMP SUM</td>
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<td>$9,000</td>
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<tr>
<td>4</td>
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<td>$175,000</td>
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<td>Removal of Mill Scale</td>
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<td></td>
<td>$80,000</td>
<td>$80,000</td>
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<tr>
<td>9</td>
<td>General Restoration</td>
<td>1 LS</td>
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<td>$20,000</td>
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Subtotal........................................................................................................................................ $ 576,000
Tax rate (8.9%)................................................................................................................................ $ 51,264

Subtotal:........................................................................................................................................ $ 627,264
Contingency (20%)........................................................................................................................ $ 125,736

TOTAL ESTIMATED CONSTRUCTION COST:.............................................................................. $ 753,000

Engineering and Administrative Costs (30%):........................................................... $ 225,900

TOTAL ESTIMATED PROJECT COST:......................................................................................... $ 979,000

ENR Construction Cost Index = 12,117 (Feb 2020)
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<th>NO.</th>
<th>ITEM</th>
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<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
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<td></td>
<td>$106,000</td>
<td>$106,000</td>
</tr>
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<td>LF</td>
<td>$150</td>
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<tr>
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<td>Additional Pipe Fittings</td>
<td>100</td>
<td>LB</td>
<td>$7.00</td>
<td>$700</td>
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<tr>
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<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td></td>
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<td>$1,000</td>
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<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
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Subtotal: $1,425,700
Tax rate (8.9%): $126,887
Subtotal: $1,552,587
Contingency (20%): $310,413
TOTAL ESTIMATED CONSTRUCTION COST: $1,863,000
Engineering and Administrative Costs (30%): $558,900
TOTAL ESTIMATED PROJECT COST: $2,422,000

ENR Construction Cost Index = 12,117 (Feb 2020)
<table>
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<th>NO.</th>
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<td>Variable Frequency Drive Installation</td>
<td>LUMP SUM</td>
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Subtotal: ................................................................................................................................ $ 54,000

Tax rate (8.9%).................................................................................................................................... 4,806

Subtotal: ................................................................................................................................ $ 58,806

Contingency (20%).................................................................................................................................... 12,194

TOTAL ESTIMATED CONSTRUCTION COST: ......................................................................................... $ 71,000
CITY OF NORTH BEND  
PRELIMINARY PROJECT COST ESTIMATE  
SOURCE IMPROVEMENT SO-2
Centennial Well Pump Replacement

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<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Mobilization, Cleanup, and Demobilization</td>
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<td>2</td>
<td>Replacement Well Pump</td>
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Subtotal...........................................................................................................$135,000

Tax rate (8.9%)..................................................................................................12,015

Subtotal:...........................................................................................................$147,015

Contingency (20%).............................................................................................28,985

TOTAL ESTIMATED CONSTRUCTION COST:.........................................................$176,000

Engineering and Administrative Costs (30%)...............................................$52,800

TOTAL ESTIMATED PROJECT COST:......................................................................$229,000

ENR Construction Cost Index = 12,117 (Feb 2020)
CITY OF NORTH BEND
PRELIMINARY PROJECT COST ESTIMATE
MITIGATION SYSTEM IMPROVEMENT  MT-1
Golf Course Well Improvements

<table>
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<th>QUANTITY</th>
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<th>AMOUNT</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$ 16,000</td>
<td>$ 16,000</td>
</tr>
<tr>
<td>2</td>
<td>6-inch DI Water Pipe, Including Fittings</td>
<td>1,400 LF</td>
<td>$ 70</td>
<td>$ 98,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$ 5,000</td>
<td>$ 5,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$ 5,000</td>
<td>$ 5,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>168 LB</td>
<td>$ 7.00</td>
<td>$ 1,176</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$ 7,000</td>
<td>$ 7,000</td>
</tr>
<tr>
<td>7</td>
<td>6-inch Gate Valves</td>
<td>8 EA</td>
<td>$ 1,200</td>
<td>$ 9,600</td>
</tr>
<tr>
<td>8</td>
<td>Gravel Backfill</td>
<td>460 TN</td>
<td>$ 35</td>
<td>$ 16,100</td>
</tr>
<tr>
<td>9</td>
<td>Replacement Pump</td>
<td>1 LS</td>
<td>$ 40,000</td>
<td>$ 40,000</td>
</tr>
<tr>
<td>10</td>
<td>General Restoration</td>
<td>1 LS</td>
<td>$20,000</td>
<td>$ 20,000</td>
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</table>

Subtotal.................................................................................................................. $ 217,876
Tax rate (8.9%)........................................................................................................... $ 19,391

Subtotal:.................................................................................................................. $ 237,267
Contingency (20%)....................................................................................................... $ 47,733

TOTAL ESTIMATED CONSTRUCTION COST:............................................................... $ 285,000

Engineering and Administrative Costs (30%):....................................................... $ 85,500

TOTAL ESTIMATED PROJECT COST:.............................................................................. $ 371,000

ENR Construction Cost Index = 12,117 (Feb 2020)
<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td></td>
<td>LUMP SUM</td>
<td>$13,000</td>
<td>$13,000</td>
</tr>
<tr>
<td>2</td>
<td>Hobo Springs Intake Improvements</td>
<td>1</td>
<td>LF</td>
<td>$75,000</td>
<td>$75,000</td>
</tr>
<tr>
<td>3</td>
<td>16-inch DI Water Pipe, Including Fittings</td>
<td>300</td>
<td>LF</td>
<td>$180</td>
<td>$54,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td></td>
<td>LUMP SUM</td>
<td>$3,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>180</td>
<td>LB</td>
<td>$7.00</td>
<td>$1,260</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td></td>
<td>LUMP SUM</td>
<td>$1,500</td>
<td>$1,500</td>
</tr>
<tr>
<td>7</td>
<td>16-inch Butterfly Valves</td>
<td>2</td>
<td>EA</td>
<td>$10,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>8</td>
<td>General Restoration</td>
<td>1</td>
<td>LS</td>
<td>$10,000</td>
<td>$10,000</td>
</tr>
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</table>

Subtotal: ........................................................................................................... $177,760
Tax rate (8.9%): ........................................................................................................... $15,821

Subtotal: ........................................................................................................... $193,581
Contingency (20%): ........................................................................................................... $38,419

TOTAL ESTIMATED CONSTRUCTION COST: ............................................................ $232,000

Engineering and Administrative Costs (30%): ................................................... $69,600

TOTAL ESTIMATED PROJECT COST: ................................................................. $302,000

ENR Construction Cost Index = 12,117 (Feb 2020)
# CITY OF NORTH BEND
## PRELIMINARY PROJECT COST ESTIMATE
### MITIGATION SYSTEM IMPROVEMENT MT-3

**Mitigation Well**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$45,000</td>
<td>$45,000</td>
</tr>
<tr>
<td>2</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
<td>300</td>
<td>LF $150</td>
<td>$45,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$13,000</td>
<td>$13,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$13,000</td>
<td>$13,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>150</td>
<td>LB $7.00</td>
<td>$1,050</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$1,500</td>
<td>$1,500</td>
</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>2</td>
<td>EA $3,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>8</td>
<td>Submersible Well Pump Assembly</td>
<td>1</td>
<td>LS $100,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>9</td>
<td>Well Building</td>
<td>1</td>
<td>LS $200,000</td>
<td>$200,000</td>
</tr>
<tr>
<td>10</td>
<td>Electrical and Telemetry</td>
<td>1</td>
<td>LS $160,000</td>
<td>$160,000</td>
</tr>
<tr>
<td>11</td>
<td>General Restoration</td>
<td>1</td>
<td>LS $20,000</td>
<td>$20,000</td>
</tr>
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</table>

Subtotal................................................................................................................................ $604,550
Tax rate (8.9%).................................................................................................................. $53,805
Subtotal................................................................................................................................ $658,355
Contingency (20%)................................................................................................................ $131,645

**TOTAL ESTIMATED CONSTRUCTION COST:**........................................................................... $790,000

**Engineering and Administrative Costs (30%):**............................................................... $237,000

**TOTAL ESTIMATED PROJECT COST:**.................................................................................. $1,027,000

ENR Construction Cost Index = 12,117 (Feb 2020)
<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td></td>
<td>$14,000</td>
<td>$14,000</td>
</tr>
<tr>
<td>2</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
<td>400</td>
<td>LF</td>
<td>$150</td>
<td>$60,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td></td>
<td>$4,000</td>
<td>$4,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td></td>
<td>$4,000</td>
<td>$4,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>200</td>
<td>LB</td>
<td>$7.00</td>
<td>$1,400</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td></td>
<td>$2,000</td>
<td>$2,000</td>
</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>2</td>
<td>EA</td>
<td>$3,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>8</td>
<td>Crushed Surfacing, Top Course</td>
<td>410</td>
<td>TN</td>
<td>$30</td>
<td>$12,300</td>
</tr>
<tr>
<td>9</td>
<td>General Restoration</td>
<td>1</td>
<td>LS</td>
<td>$20,000</td>
<td>$20,000</td>
</tr>
<tr>
<td>10</td>
<td>Electrical and SCADA</td>
<td>1</td>
<td>LS</td>
<td>$50,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>50</td>
<td>TN</td>
<td>$200</td>
<td>$10,000</td>
</tr>
</tbody>
</table>

Subtotal: ................................................................................................................................ $183,700
Tax rate (8.9%): ......................................................................................................................... $16,349

Subtotal: ................................................................................................................................ $200,049
Contingency (20%): ....................................................................................................................... $39,951

TOTAL ESTIMATED CONSTRUCTION COST: ........................................................................................ $240,000

Engineering and Administrative Costs (30%): ............................................................................. $72,000

TOTAL ESTIMATED PROJECT COST: ............................................................................................... $312,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### MITIGATION SYSTEM IMPROVEMENT MT-5

**Mitigation Reservoir**

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$ 539,000</td>
<td>$ 539,000</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
<td>1,000</td>
<td>LF</td>
<td>$ 150</td>
<td>$ 150,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$ 6,000</td>
<td>$ 6,000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$ 6,000</td>
<td>$ 6,000</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>500</td>
<td>LB</td>
<td>$ 7.00</td>
<td>$ 3,500</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$ 5,000</td>
<td>$ 5,000</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>6</td>
<td>EA</td>
<td>$ 3,000</td>
<td>$ 18,000</td>
</tr>
<tr>
<td>8</td>
<td>10 MG Reservoir</td>
<td>1</td>
<td>LS</td>
<td>$ 8,500,000</td>
<td>$ 6,500,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>1,030</td>
<td>TN</td>
<td>$ 30</td>
<td>$ 30,900</td>
</tr>
<tr>
<td>10</td>
<td>General Restoration</td>
<td>1</td>
<td>LS</td>
<td>$20,000</td>
<td>$ 20,000</td>
</tr>
</tbody>
</table>

Subtotal.................................................................................................................................................. $ 7,278,400
Tax rate (8.9%)......................................................................................................................................... $ 647,778

Subtotal:................................................................................................................................................ $ 7,926,178
Contingency (20%):.................................................................................................................................. $ 1,584,822

**TOTAL ESTIMATED CONSTRUCTION COST:**............................................................................................ $ 9,511,000

Engineering and Administrative Costs (30%):.......................................................................................... $ 2,853,300

**TOTAL ESTIMATED PROJECT COST:**....................................................................................................... $ 12,000,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### SOURCE IMPROVEMENT MS-2
Source and Storage SCADA and PLC Upgrades

<table>
<thead>
<tr>
<th>NO</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reservoir SCADA and PLC Upgrades</td>
<td>3</td>
<td>$25,000</td>
<td>$75,000</td>
</tr>
<tr>
<td>2</td>
<td>Source SCADA and PLC Upgrades</td>
<td>2</td>
<td>$15,000</td>
<td>$30,000</td>
</tr>
</tbody>
</table>

Subtotal: $105,000

Tax rate (8.9%): $9,345

Subtotal: $114,345

Contingency (20%): $22,655

TOTAL ESTIMATED CONSTRUCTION COST: $137,000

Engineering and Administrative Costs (30%): $41,100

TOTAL ESTIMATED PROJECT COST: $178,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### SOURCE IMPROVEMENT MS-2
Source and Storage SCADA and PLC Upgrades

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Booster Pump Station SCADA and PLC Upgrades</td>
<td>2</td>
<td>EA</td>
<td>$15,000</td>
<td>$30,000</td>
</tr>
</tbody>
</table>

Subtotal: ........................................................................................................................................ $ 30,000  
Tax rate (8.9%): ................................................................................................................................... 2,670  

Subtotal: ........................................................................................................................................ $ 32,670  
Contingency (20%): .................................................................................................................................. 6,330  

TOTAL ESTIMATED CONSTRUCTION COST: ................................................................................................. $ 39,000  

Engineering and Administrative Costs (30%): ......................................................................................... $ 11,700  

TOTAL ESTIMATED PROJECT COST: ........................................................................................................ $ 51,000  

ENR Construction Cost Index = 12,117 (Feb 2020)
# CITY OF NORTH BEND

## PRELIMINARY PROJECT COST ESTIMATE

### DISTRIBUTION SYSTEM IMPROVEMENT D-1

#### Main Avenue North and West 4th Ave

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$4,000</td>
<td>$4,000</td>
</tr>
<tr>
<td>2</td>
<td>8-inch DI Water Pipe, Including Fittings</td>
<td>100</td>
<td>LF $85</td>
<td>$8,500</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>45</td>
<td>LB $7.00</td>
<td>$315</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>7</td>
<td>8-inch Gate Valves</td>
<td>2</td>
<td>EA $1,500</td>
<td>$3,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>1</td>
<td>EA $5,500</td>
<td>$5,500</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>90</td>
<td>TN $30</td>
<td>$2,700</td>
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<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>10</td>
<td>TN $35</td>
<td>$350</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>10</td>
<td>TN $200</td>
<td>$2,000</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>200</td>
<td>LF $4</td>
<td>$800</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>5</td>
<td>TN $170</td>
<td>$779</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>3</td>
<td>EA $6,000</td>
<td>$18,000</td>
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<tr>
<td>15</td>
<td>Traffic Control</td>
<td>4</td>
<td>HRS $100</td>
<td>$400</td>
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</tbody>
</table>

Subtotal: ........................................................................................................................................ $49,344
Tax rate (8.9%): ................................................................................................................................ $4,392
Subtotal: ........................................................................................................................................ $53,736
Contingency (20%): .......................................................................................................................... $10,264

**TOTAL ESTIMATED CONSTRUCTION COST:................................. $64,000**

Engineering and Administrative Costs (30%):................................. $19,200

**TOTAL ESTIMATED PROJECT COST:........................................ $83,000**

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DISTRIBUTION SYSTEM IMPROVEMENT D-2
North Bend Way and West 2nd Ave

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td></td>
<td>$10,000</td>
<td>$10,000</td>
</tr>
<tr>
<td>2</td>
<td>10-inch DI Water Pipe, Including Fittings</td>
<td>400</td>
<td>LF</td>
<td>$100</td>
<td>$40,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td></td>
<td>$3,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td></td>
<td>$3,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>200</td>
<td>LB</td>
<td>$7.00</td>
<td>$1,400</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td></td>
<td>$2,000</td>
<td>$2,000</td>
</tr>
<tr>
<td>7</td>
<td>10-inch Gate Valves</td>
<td>2</td>
<td>EA</td>
<td>$2,200</td>
<td>$4,400</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>2</td>
<td>EA</td>
<td>$5,500</td>
<td>$11,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>410</td>
<td>TN</td>
<td>$30</td>
<td>$12,300</td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>30</td>
<td>TN</td>
<td>$35</td>
<td>$1,050</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>50</td>
<td>TN</td>
<td>$200</td>
<td>$10,000</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>800</td>
<td>LF</td>
<td>$4</td>
<td>$3,200</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>20</td>
<td>TN</td>
<td>$170</td>
<td>$3,400</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>4</td>
<td>EA</td>
<td>$6,000</td>
<td>$24,000</td>
</tr>
<tr>
<td>15</td>
<td>1-1/2” Service Connections, complete</td>
<td>5</td>
<td>EA</td>
<td>$2,000</td>
<td>$10,000</td>
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<tr>
<td>16</td>
<td>Traffic Control</td>
<td>16</td>
<td>HRS</td>
<td>$100</td>
<td>$1,600</td>
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Subtotal: .......................................................................................................................... $140,350
Tax rate (8.9%): ...................................................................................................................... 12,491

Subtotal: .......................................................................................................................... $152,841
Contingency (20%): .................................................................................................................. 30,159

TOTAL ESTIMATED CONSTRUCTION COST: ............................................................................. $183,000

Engineering and Administrative Costs (30%): ........................................................................ 54,900

TOTAL ESTIMATED PROJECT COST: ...................................................................................... $238,000

ENR Construction Cost Index = 12,117 (Feb 2020)
# City of North Bend
## Preliminary Project Cost Estimate
### Distribution System Improvement D-3
Main Avenue North and Sydney Avenue North

<table>
<thead>
<tr>
<th>NO.</th>
<th>Item</th>
<th>Quantity</th>
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<tbody>
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<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td></td>
<td>LUMP SUM</td>
<td>$12,000</td>
</tr>
<tr>
<td>2</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
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<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
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<tr>
<td>4</td>
<td>Erosion Control</td>
<td></td>
<td>LUMP SUM</td>
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<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>200</td>
<td>LB</td>
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<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td></td>
<td>LUMP SUM</td>
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</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>2</td>
<td>EA</td>
<td>$3,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>2</td>
<td>EA</td>
<td>$5,500</td>
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<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>410</td>
<td>TN</td>
<td>$30</td>
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<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>30</td>
<td>TN</td>
<td>$35</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>50</td>
<td>TN</td>
<td>$200</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>800</td>
<td>LF</td>
<td>$4</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>20</td>
<td>TN</td>
<td>$170</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>3</td>
<td>EA</td>
<td>$6,000</td>
</tr>
<tr>
<td>15</td>
<td>1-1/2&quot; Service Connections, complete</td>
<td>5</td>
<td>EA</td>
<td>$2,000</td>
</tr>
<tr>
<td>16</td>
<td>Traffic Control</td>
<td>16</td>
<td>HRS</td>
<td>$100</td>
</tr>
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</table>

Subtotal: .......................................................... $157,950
Tax rate (8.9%): .......................................................... $14,058

Subtotal: .......................................................... $172,008
Contingency (20%): .......................................................... $33,992

TOTAL ESTIMATED CONSTRUCTION COST: .......................................................... $206,000

Engineering and Administrative Costs (30%): .......................................................... $61,800

TOTAL ESTIMATED PROJECT COST: .......................................................... $268,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DISTRIBUTION SYSTEM IMPROVEMENT D-4
East North Bend Way and Thrasher Ave Northeast

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>UNIT</th>
<th>QUANTITY</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td></td>
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<td>$14,000</td>
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<tr>
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<td>Locate Existing Utilities</td>
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<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
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<td>$4,000</td>
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<td>$4,000</td>
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<td>8-inch Gate Valves</td>
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<td>$6,000</td>
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<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>EA 3</td>
<td></td>
<td>$5,500</td>
<td>$16,500</td>
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<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>TN 700</td>
<td></td>
<td>$30</td>
<td>$21,000</td>
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<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>TN 40</td>
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<td>$35</td>
<td>$1,400</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>TN 100</td>
<td></td>
<td>$200</td>
<td>$20,000</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>LF 1,600</td>
<td></td>
<td>$4</td>
<td>$6,400</td>
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<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>TN 40</td>
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<td>$170</td>
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<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>EA 2</td>
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<td>$12,000</td>
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<tr>
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<td>$5,000</td>
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<tr>
<td>16</td>
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Subtotal .................................................................................................................. $195,100
Tax rate (8.9%) ........................................................................................................ $17,364

Subtotal .................................................................................................................. $212,464
Contingency (20%) ...................................................................................................... $42,536

TOTAL ESTIMATED CONSTRUCTION COST: ................................................................. $255,000

Engineering and Administrative Costs (30%): ......................................................... $76,500

TOTAL ESTIMATED PROJECT COST: ........................................................................... $332,000

ENR Construction Cost Index = 12,117 (Feb 2020)
# CITY OF NORTH BEND
## PRELIMINARY PROJECT COST ESTIMATE
### DISTRIBUTION SYSTEM IMPROVEMENT D-5
#### Riverside Drive

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
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<td>$36,000</td>
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<tr>
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<td>2,000</td>
<td>LF</td>
<td>$85</td>
<td>$170,000</td>
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<td>$11,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td></td>
<td>$11,000</td>
<td>$11,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>900</td>
<td>LB</td>
<td>$7.00</td>
<td>$6,300</td>
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<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td></td>
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<td>$10,000</td>
</tr>
<tr>
<td>7</td>
<td>8-inch Gate Valves</td>
<td>12</td>
<td>EA</td>
<td>$1,500</td>
<td>$18,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>6</td>
<td>EA</td>
<td>$5,500</td>
<td>$33,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>1,760</td>
<td>TN</td>
<td>$30</td>
<td>$52,800</td>
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<td>Foundation Gravel</td>
<td>110</td>
<td>TN</td>
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<td>$3,850</td>
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<td>TN</td>
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<td>$48,000</td>
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<tr>
<td>12</td>
<td>Sawcutting</td>
<td>4,000</td>
<td>LF</td>
<td>$4</td>
<td>$16,000</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>90</td>
<td>TN</td>
<td>$170</td>
<td>$15,300</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>3</td>
<td>EA</td>
<td>$6,000</td>
<td>$18,000</td>
</tr>
<tr>
<td>15</td>
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<td>$30,000</td>
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<td>HRS</td>
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<td>$8,000</td>
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Subtotal: $487,250
Tax rate (8.9%): $43,365
Subtotal: $530,615
Contingency (20%): $106,385
TOTAL ESTIMATED CONSTRUCTION COST: $637,000
Engineering and Administrative Costs (30%): $191,100
TOTAL ESTIMATED PROJECT COST: $828,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DISTRIBUTION SYSTEM IMPROVEMENT  D-6

End of East 2nd Street

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
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<th>UNIT PRICE</th>
<th>AMOUNT</th>
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</thead>
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<td>LUMP SUM</td>
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<td>$9,000</td>
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</tr>
<tr>
<td>3</td>
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<td>$3,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$3,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>100 LB</td>
<td>$7.00</td>
<td>$700</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$1,000</td>
<td>$1,000</td>
</tr>
<tr>
<td>7</td>
<td>16-inch Butterfly Valves</td>
<td>2 EA</td>
<td>$10,000</td>
<td>$20,000</td>
</tr>
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<td>8</td>
<td>Fire Hydrants</td>
<td>1 EA</td>
<td>$5,500</td>
<td>$5,500</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>240 TN</td>
<td>$30</td>
<td>$7,200</td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>10 TN</td>
<td>$35</td>
<td>$350</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>30 TN</td>
<td>$200</td>
<td>$6,000</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>400 LF</td>
<td>$4</td>
<td>$1,600</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>10 TN</td>
<td>$170</td>
<td>$1,700</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>4 EA</td>
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<td>$24,000</td>
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<td>15</td>
<td>Traffic Control</td>
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Subtotal: .......................................................................................................................... $119,850
Tax rate (8.9%).................................................................................................................................. $10,667
Subtotal: .......................................................................................................................... $130,517
Contingency (20%).................................................................................................................. $26,483

TOTAL ESTIMATED CONSTRUCTION COST: ................................................................. $157,000

Engineering and Administrative Costs (30%):................................................................. $47,100

TOTAL ESTIMATED PROJECT COST: ............................................................................. $204,000

ENR Construction Cost Index = 12,117 (Feb 2020)
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<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
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</thead>
<tbody>
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<td>$16,000</td>
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<td>$5,000</td>
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<td>Erosion Control</td>
<td>LUMP SUM</td>
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<td>$5,000</td>
</tr>
<tr>
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<td>Additional Pipe Fittings</td>
<td>300</td>
<td>LB $7.00</td>
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<tr>
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<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
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<td>EA $1,500</td>
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</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>2</td>
<td>EA $5,500</td>
<td>$11,000</td>
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<td>HMA Cl. 1/2 PG 58-22</td>
<td>90</td>
<td>TN $200</td>
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<tr>
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<td>Sawcutting</td>
<td>1,500</td>
<td>LF $4</td>
<td>$6,000</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>30</td>
<td>TN $170</td>
<td>$5,100</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>5</td>
<td>EA $6,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>15</td>
<td>3/4&quot; Service Connections, complete</td>
<td>15</td>
<td>EA $1,000</td>
<td>$15,000</td>
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<tr>
<td>16</td>
<td>Traffic Control</td>
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Subtotal: .................................................................................................................. $211,150
Tax rate (8.9%)............................................................................................................. $18,792

Subtotal: .................................................................................................................. $229,942
Contingency (20%)......................................................................................................... $46,058

TOTAL ESTIMATED CONSTRUCTION COST: ........................................................................ $276,000
Engineering and Administrative Costs (30%): .............................................................. $82,800

TOTAL ESTIMATED PROJECT COST: ................................................................................ $359,000

ENR Construction Cost Index = 12,117 (Feb 2020)
<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
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<td>LUMP SUM</td>
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<td>$ 6,000</td>
</tr>
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<td>4</td>
<td>Erosion Control</td>
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<td>LUMP SUM</td>
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<td>$ 2,000</td>
</tr>
<tr>
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<td>Additional Pipe Fittings</td>
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<td>$ 700</td>
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<tr>
<td>6</td>
<td>Trench Safety Systems</td>
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<td>$ 1,500</td>
</tr>
<tr>
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<td>8-inch Gate Valves</td>
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<td>$ 3,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>1</td>
<td>EA</td>
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<td>$ 5,500</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
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<td>TN</td>
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<td>10</td>
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<td>TN</td>
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<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>40</td>
<td>TN</td>
<td>$ 200</td>
<td>$ 8,000</td>
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<td>12</td>
<td>Sawcutting</td>
<td>600</td>
<td>LF</td>
<td>$ 4</td>
<td>$ 2,400</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>10</td>
<td>TN</td>
<td>$ 170</td>
<td>$ 1,700</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>3</td>
<td>EA</td>
<td>$ 6,000</td>
<td>$ 18,000</td>
</tr>
<tr>
<td>15</td>
<td>Traffic Control</td>
<td>12</td>
<td>HRS</td>
<td>$ 100</td>
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Subtotal: ........................................................................................................................................ $ 86,000
Tax rate (8.9%): ................................................................................................................................ $ 7,654

Subtotal: ........................................................................................................................................ $ 93,654
Contingency (20%): ............................................................................................................................. $ 18,346

TOTAL ESTIMATED CONSTRUCTION COST: .................................................................................................. $ 112,000

Engineering and Administrative Costs (30%): ...................................................................................... $ 33,600

TOTAL ESTIMATED PROJECT COST: .......................................................................................................... $ 146,000

ENR Construction Cost Index = 12,117 (Feb 2020)
CITY OF NORTH BEND  
PRELIMINARY PROJECT COST ESTIMATE  
DISTRIBUTION SYSTEM IMPROVEMENT D-9  
End of SE 108th Street

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
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<td>$13,000</td>
<td>$13,000</td>
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<td>8</td>
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<td>14</td>
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Subtotal:.......................................................... $177,150  
Tax rate (8.9%).......................................................... $15,766

Subtotal:.......................................................... $192,916  
Contingency (20%)...................................................... $38,084

TOTAL ESTIMATED CONSTRUCTION COST:.......................... $231,000  

Engineering and Administrative Costs (30%):.................. $69,300  

TOTAL ESTIMATED PROJECT COST:................................. $300,000

ENR Construction Cost Index = 12,117 (Feb 2020)
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<tr>
<th>NO.</th>
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<th>UNIT PRICE</th>
<th>AMOUNT</th>
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</thead>
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<td>Fire Hydrants</td>
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<td>9</td>
<td>Crushed Surfacing, Top Course</td>
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<td>13</td>
<td>Cold Mix Asphalt</td>
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<td>TN</td>
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<td>Connections to Existing System</td>
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<td>EA</td>
<td>$6,000</td>
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Subtotal:............................................................................................................................................... $103,250
Tax rate (8.9%):.................................................................................................................................... $9,189

Subtotal:............................................................................................................................................... $112,439
Contingency (20%):.................................................................................................................................... $22,561

TOTAL ESTIMATED CONSTRUCTION COST:........................................................... $135,000

Engineering and Administrative Costs (30%):........................................................... $40,500

TOTAL ESTIMATED PROJECT COST:.................................................................................. $176,000

ENR Construction Cost Index = 12,117 (Feb 2020)
### CITY OF NORTH BEND
PRELIMINARY PROJECT COST ESTIMATE
DISTRIBUTION SYSTEM IMPROVEMENT D-11
Borst Avenue Northeast and Northeast 6th Street

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<td>$7,000</td>
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<td>8</td>
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<td>EA</td>
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<td>$5,500</td>
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<td>$30</td>
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<td>Foundation Gravel</td>
<td>TN</td>
<td>20</td>
<td>$35</td>
<td>$700</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>TN</td>
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<td>$200</td>
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<tr>
<td>12</td>
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<td>LF</td>
<td>700</td>
<td>$4</td>
<td>$2,800</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>TN</td>
<td>20</td>
<td>$170</td>
<td>$3,400</td>
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<tr>
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<td>Connections to Existing System</td>
<td>EA</td>
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<td>$12,000</td>
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Subtotal .......................................................................................................................... $99,250
Tax rate (8.9%) .................................................................................................................. $8,833

Subtotal: .............................................................................................................................. $108,083
Contingency (20%) ................................................................................................................ $21,917

TOTAL ESTIMATED CONSTRUCTION COST: ............................................................................. $130,000
Engineering and Administrative Costs (30%): ............................................................... $39,000

TOTAL ESTIMATED PROJECT COST: ..................................................................................... $169,000

ENR Construction Cost Index = 12,117 (Feb 2020)
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<th>NO</th>
<th>ITEM</th>
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<th>AMOUNT</th>
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<td>$ 1,000</td>
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<td>8-inch Gate Valves</td>
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<td>$ 3,000</td>
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<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>1</td>
<td>EA $ 5,500</td>
<td>$ 5,500</td>
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<tr>
<td>9</td>
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<td>TN $ 35</td>
<td>$ 350</td>
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<td>TN $ 170</td>
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<td>15</td>
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<td>8</td>
<td>HRS $ 100</td>
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Subtotal: ........................................................................................................................................ $ 66,050
Tax rate (8.9%) .................................................................................................................................... $ 5,878

Subtotal: ........................................................................................................................................ $ 71,928
Contingency (20%) ................................................................................................................................. $ 14,072

TOTAL ESTIMATED CONSTRUCTION COST: ............................................................... $ 86,000

Engineering and Administrative Costs (30%): ................................................................. $ 25,800

TOTAL ESTIMATED PROJECT COST: .................................................................................. $ 112,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DISTRIBUTION SYSTEM IMPROVEMENT D-13
##### Picket Avenue Northeast

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<td>$3,000</td>
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<td>8-inch Gate Valves</td>
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<tr>
<td>8</td>
<td>Fire Hydrants</td>
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<td>$11,000</td>
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<tr>
<td>9</td>
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<td>$15,900</td>
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<td>Foundation Gravel</td>
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<td>$35</td>
<td>$1,050</td>
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<td>30 TN</td>
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Subtotal: .................................................................................................................. $170,350

Tax rate (8.9%).............................................................................................................. $15,161

Subtotal: .................................................................................................................. $185,511

Contingency (20%)......................................................................................................... $37,489

TOTAL ESTIMATED CONSTRUCTION COST: ........................................................................ $223,000

Engineering and Administrative Costs (30%): ................................................................. $66,900

TOTAL ESTIMATED PROJECT COST: ............................................................................... $290,000

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<td>LUMP SUM</td>
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<td>$4,000</td>
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<tr>
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<td>Cold Mix Asphalt</td>
<td>30</td>
<td>TN</td>
<td>$170</td>
<td>$5,100</td>
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<td>Connections to Existing System</td>
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<td>$12,000</td>
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<td>24</td>
<td>HRS</td>
<td>$100</td>
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</table>

Subtotal.......................................................... $171,350
Tax rate (8.9%).......................................................... $15,250

Subtotal.......................................................... $186,600
Contingency (20%).......................................................... $37,400

TOTAL ESTIMATED CONSTRUCTION COST.......................... $224,000

Engineering and Administrative Costs (30%).......................... $67,200

TOTAL ESTIMATED PROJECT COST.................................... $291,000

ENR Construction Cost Index = 12,117 (Feb 2020)
# CITY OF NORTH BEND
# PRELIMINARY PROJECT COST ESTIMATE
# DISTRIBUTION SYSTEM IMPROVEMENT D-15
# Merritt Avenue NE

<table>
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</tr>
<tr>
<td>4</td>
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<td>LUMP SUM</td>
<td></td>
<td>$3,000</td>
<td>$3,000</td>
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<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>LB</td>
<td>200</td>
<td>$7.00</td>
<td>$1,400</td>
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<td>6</td>
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<td>LUMP SUM</td>
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<td>$2,500</td>
<td>$2,500</td>
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<tr>
<td>7</td>
<td>8-inch Gate Valves</td>
<td>EA</td>
<td>2</td>
<td>$1,500</td>
<td>$3,000</td>
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<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>EA</td>
<td>2</td>
<td>$5,500</td>
<td>$11,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>TN</td>
<td>440</td>
<td>$30</td>
<td>$13,200</td>
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<td>Foundation Gravel</td>
<td>TN</td>
<td>30</td>
<td>$35</td>
<td>$1,050</td>
</tr>
<tr>
<td>11</td>
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<td>60</td>
<td>$200</td>
<td>$12,000</td>
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<tr>
<td>12</td>
<td>Sawcutting</td>
<td>LF</td>
<td>1,000</td>
<td>$4</td>
<td>$4,000</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>TN</td>
<td>20</td>
<td>$170</td>
<td>$3,400</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>EA</td>
<td>2</td>
<td>$6,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>15</td>
<td>3/4&quot; Service Connections, complete</td>
<td>EA</td>
<td>11</td>
<td>$1,000</td>
<td>$11,000</td>
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<tr>
<td>16</td>
<td>Traffic Control</td>
<td>HRS</td>
<td>20</td>
<td>$100</td>
<td>$2,000</td>
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</tbody>
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Subtotal: $135,050  
Tax rate (8.9%):  
Subtotal: $147,069  
Contingency (20%):  
Subtotal: $28,931  

TOTAL ESTIMATED CONSTRUCTION COST: $176,000  
Engineering and Administrative Costs (30%): $52,800  
TOTAL ESTIMATED PROJECT COST: $229,000  
ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DISTRIBUTION SYSTEM IMPROVEMENT D-16
436th Avenue NE

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
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<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
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<td>$ 34,000</td>
</tr>
<tr>
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<td>1,400 LF</td>
<td>$ 150</td>
<td>$ 210,000</td>
</tr>
<tr>
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<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
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<td>$ 10,000</td>
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<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$ 10,000</td>
<td>$ 10,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>700 LB</td>
<td>$ 7.00</td>
<td>$ 4,900</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$ 7,000</td>
<td>$ 7,000</td>
</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>8 EA</td>
<td>$ 3,000</td>
<td>$ 24,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>4 EA</td>
<td>$ 5,500</td>
<td>$ 22,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>1,440 TN</td>
<td>$ 30</td>
<td>$ 43,200</td>
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<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>90 TN</td>
<td>$ 35</td>
<td>$ 3,150</td>
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<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>190 TN</td>
<td>$ 200</td>
<td>$ 38,000</td>
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<tr>
<td>12</td>
<td>Sawcutting</td>
<td>2,800 LF</td>
<td>$ 4</td>
<td>$ 11,200</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>60 TN</td>
<td>$ 170</td>
<td>$ 10,200</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>2 EA</td>
<td>$ 6,000</td>
<td>$ 12,000</td>
</tr>
<tr>
<td>15</td>
<td>3/4&quot; Service Connections, complete</td>
<td>8 EA</td>
<td>$ 1,000</td>
<td>$ 8,000</td>
</tr>
<tr>
<td>16</td>
<td>Traffic Control</td>
<td>56 HRS</td>
<td>$ 100</td>
<td>$ 5,600</td>
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Subtotal:$ 453,250
Tax rate (8.9%):$ 40,339

Subtotal:$ 493,589
Contingency (20%):$ 98,411

**TOTAL ESTIMATED CONSTRUCTION COST:** $ 592,000

Engineering and Administrative Costs (30%):$ 177,600

**TOTAL ESTIMATED PROJECT COST:** $ 770,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DISTRIBUTION SYSTEM IMPROVEMENT D-17
##### Mt. Si Business Park Fireflow Improvements

<table>
<thead>
<tr>
<th>NO</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td></td>
<td>LUMP SUM</td>
<td>$ 49,000</td>
<td>$ 49,000</td>
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<tr>
<td>2</td>
<td>16-inch DI Water Pipe, Including Fittings</td>
<td>1,750</td>
<td>LF</td>
<td>$ 180</td>
<td>$ 315,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td></td>
<td>LUMP SUM</td>
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<td>$ 15,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td></td>
<td>LUMP SUM</td>
<td>$ 15,000</td>
<td>$ 15,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>1,100</td>
<td>LB</td>
<td>$ 7.00</td>
<td>$ 7,700</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td></td>
<td>LUMP SUM</td>
<td>$ 8,800</td>
<td>$ 8,800</td>
</tr>
<tr>
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<td>16-inch Butterfly Valves</td>
<td>4</td>
<td>EA</td>
<td>$ 10,000</td>
<td>$ 40,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>5</td>
<td>EA</td>
<td>$ 5,500</td>
<td>$ 27,500</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>2,050</td>
<td>TN</td>
<td>$ 30</td>
<td>$ 61,500</td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>130</td>
<td>TN</td>
<td>$ 35</td>
<td>$ 4,550</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>260</td>
<td>TN</td>
<td>$ 200</td>
<td>$ 52,000</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>3,500</td>
<td>LF</td>
<td>$ 4</td>
<td>$ 14,000</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>80</td>
<td>TN</td>
<td>$ 170</td>
<td>$ 13,600</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>5</td>
<td>EA</td>
<td>$ 6,000</td>
<td>$ 30,000</td>
</tr>
<tr>
<td>15</td>
<td>1-1/2” Service Connections, complete</td>
<td>3</td>
<td>EA</td>
<td>$ 2,000</td>
<td>$ 6,000</td>
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<td>16</td>
<td>Traffic Control</td>
<td>72</td>
<td>HRS</td>
<td>$ 100</td>
<td>$ 7,200</td>
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</tbody>
</table>

Subtotal: ........................................................................................................ $ 666,850
Tax rate (8.9%) ........................................................................................................ $ 59,350

Subtotal: ........................................................................................................ $ 726,200
Contingency (20%) ................................................................................................... $ 144,800

TOTAL ESTIMATED CONSTRUCTION COST: ........................................................... $ 871,000
Engineering and Administrative Costs (30%): ....................................................... $ 261,300

TOTAL ESTIMATED PROJECT COST: ....................................................................... $ 1,132,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DISTRIBUTION SYSTEM IMPROVEMENT D-18
Middle Fork River Crossing

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
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<td>LUMP SUM</td>
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<td>$19,000</td>
</tr>
<tr>
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<td>500 LF</td>
<td>$350</td>
<td>$175,000</td>
</tr>
<tr>
<td>3</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
<td>100 LF</td>
<td>$150</td>
<td>$15,000</td>
</tr>
<tr>
<td>4</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>5</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$5,000</td>
<td>$5,000</td>
</tr>
<tr>
<td>6</td>
<td>Additional Pipe Fittings</td>
<td>300 LB</td>
<td>$7.00</td>
<td>$2,100</td>
</tr>
<tr>
<td>7</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$2,500</td>
<td>$2,500</td>
</tr>
<tr>
<td>8</td>
<td>12-inch Gate Valves</td>
<td>2 EA</td>
<td>$3,000</td>
<td>$6,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>510 TN</td>
<td>$30</td>
<td>$15,300</td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>30 TN</td>
<td>$35</td>
<td>$1,050</td>
</tr>
<tr>
<td>11</td>
<td>Connections to Existing System</td>
<td>2 EA</td>
<td>$6,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>14</td>
<td>Traffic Control</td>
<td>20 HRS</td>
<td>$100</td>
<td>$2,000</td>
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</tbody>
</table>

Subtotal: ................................................................................................................................. $259,950
Tax rate (8.9%)............................................................................................................................. 23,136

Subtotal: ................................................................................................................................. $283,086
Contingency (20%)........................................................................................................................ 56,914

TOTAL ESTIMATED CONSTRUCTION COST: ....................................................................................... $340,000

Engineering and Administrative Costs (30%).............................................................................. $102,000

TOTAL ESTIMATED PROJECT COST: .............................................................................................. $442,000

ENR Construction Cost Index = 12,117 (Feb 2020)
<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>LUMP SUM</td>
<td>$23,000</td>
<td>$23,000</td>
</tr>
<tr>
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<td>600</td>
<td>LF $350</td>
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<tr>
<td>3</td>
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<td>100</td>
<td>LF $150</td>
<td>$15,000</td>
</tr>
<tr>
<td>4</td>
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<td>$7,000</td>
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<tr>
<td>5</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
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<td>$7,000</td>
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<tr>
<td>6</td>
<td>Additional Pipe Fittings</td>
<td>300</td>
<td>LB $7.00</td>
<td>$2,100</td>
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<tr>
<td>7</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$3,000</td>
<td>$3,000</td>
</tr>
<tr>
<td>8</td>
<td>12-inch Gate Valves</td>
<td>4</td>
<td>EA $3,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>620</td>
<td>TN $30</td>
<td>$18,600</td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>40</td>
<td>TN $35</td>
<td>$1,400</td>
</tr>
<tr>
<td>11</td>
<td>Connections to Existing System</td>
<td>2</td>
<td>EA $6,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>12</td>
<td>Traffic Control</td>
<td>24.0</td>
<td>HRS $100</td>
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</table>

Subtotal:........................................................................................................................................ $313,500

Tax rate (8.9%):..................................................................................................................................... $27,902

Subtotal:........................................................................................................................................ $341,402

Contingency (20%):................................................................................................................................... $68,599

TOTAL ESTIMATED CONSTRUCTION COST:................................................................................................. $410,000

Engineering and Administrative Costs (30%):......................................................................................... $123,000

TOTAL ESTIMATED PROJECT COST:............................................................................................................ $533,000

ENR Construction Cost Index = 12,117 (Feb 2020)
CITY OF NORTH BEND  
PRELIMINARY PROJECT COST ESTIMATE  
DISTRIBUTION SYSTEM IMPROVEMENT D-20  
Avenue Southeast to River Crossing

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
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<td>LUMP SUM</td>
<td>$141,000</td>
<td>$141,000</td>
</tr>
<tr>
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<td>5,000 LF</td>
<td>$180</td>
<td>$900,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
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<td>$42,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$42,000</td>
<td>$42,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>3,000 LB</td>
<td>$7.00</td>
<td>$21,000</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
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<td>$25,000</td>
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<tr>
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<tr>
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<td>Fire Hydrants</td>
<td>13 EA</td>
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<td>$71,500</td>
</tr>
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</tr>
<tr>
<td>10</td>
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<td>$12,950</td>
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<tr>
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<td>Sawcutting</td>
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<td>$40,000</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>230 TN</td>
<td>$170</td>
<td>$39,100</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>2 EA</td>
<td>$6,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>15</td>
<td>3/4&quot; Service Connections, complete</td>
<td>50 EA</td>
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<td>$50,000</td>
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<tr>
<td>16</td>
<td>Traffic Control</td>
<td>200 HRS</td>
<td>$100</td>
<td>$20,000</td>
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</table>

Subtotal: ......................................................................................................... $1,898,650  
Tax rate (8.9%).................................................................................................. $168,980  
Subtotal: ......................................................................................................... $2,067,630  
Contingency (20%)............................................................................................... $413,370  

TOTAL ESTIMATED CONSTRUCTION COST: ............................................................... $2,481,000  
Engineering and Administrative Costs (30%): .................................................... $744,300  

TOTAL ESTIMATED PROJECT COST: ........................................................................ $3,225,000  
ENR Construction Cost Index = 12,117 (Feb 2020)
### City of North Bend

**Preliminary Project Cost Estimate**

**Distribution System Improvement D-21**

Avenue Southeast and Southeast 92nd Street

<table>
<thead>
<tr>
<th>NO.</th>
<th>Item</th>
<th>Quantity</th>
<th>Unit Price</th>
<th>Amount</th>
</tr>
</thead>
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<td>$75,000</td>
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<td>$22,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$22,000</td>
<td>$22,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>1,700 LB</td>
<td>$7.00</td>
<td>$11,900</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
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<td>$13,800</td>
</tr>
<tr>
<td>7</td>
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<td>8 EA</td>
<td>$10,000</td>
<td>$80,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>7 EA</td>
<td>$5,500</td>
<td>$38,500</td>
</tr>
<tr>
<td>9</td>
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<td>3,230 TN</td>
<td>$30</td>
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<td>10</td>
<td>Foundation Gravel</td>
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<td>$35</td>
<td>$7,000</td>
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<td>HMA Cl. 1/2 PG 58-22</td>
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<td>$80,000</td>
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<tr>
<td>12</td>
<td>Sawcutting</td>
<td>5,500 LF</td>
<td>$4</td>
<td>$22,000</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>130 TN</td>
<td>$170</td>
<td>$22,100</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>2 EA</td>
<td>$6,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>15</td>
<td>3/4&quot; Service Connections, complete</td>
<td>9 EA</td>
<td>$1,000</td>
<td>$9,000</td>
</tr>
<tr>
<td>16</td>
<td>Traffic Control</td>
<td>112 HRS</td>
<td>$100</td>
<td>$11,200</td>
</tr>
</tbody>
</table>

Subtotal: .................................................................................................................. $1,018,400

Tax rate (8.9%): .............................................................................................................. $90,638

Subtotal: .................................................................................................................. $1,109,038

Contingency (20%): ....................................................................................................... $221,962

**Total Estimated Construction Cost:** ................................................................. $1,331,000

Engineering and Administrative Costs (30%): ........................................................ $$399,300

**Total Estimated Project Cost:** ............................................................................. $1,730,000

ENR Construction Cost Index = 12,117 (Feb 2020)
### CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
### DEVELOPER EXTENSION SYSTEM IMPROVEMENT DE-1
### 420th Avenue SE and SE 102nd Street

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$93,000</td>
<td>$93,000</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
<td>4,000 LF</td>
<td>$150</td>
<td>$600,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$28,000</td>
<td>$28,000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$28,000</td>
<td>$28,000</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>2,000 LB</td>
<td>$7.00</td>
<td>$14,000</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$20,000</td>
<td>$20,000</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>26 EA</td>
<td>$3,000</td>
<td>$78,000</td>
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</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>11 EA</td>
<td>$5,500</td>
<td>$60,500</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>4,110 TN</td>
<td>$30</td>
<td>$123,300</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>260 TN</td>
<td>$35</td>
<td>$9,100</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>540 TN</td>
<td>$200</td>
<td>$108,000</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>8,000 LF</td>
<td>$4</td>
<td>$32,000</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>180 TN</td>
<td>$170</td>
<td>$30,600</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>2 EA</td>
<td>$6,000</td>
<td>$12,000</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Traffic Control</td>
<td>160 HRS</td>
<td>$100</td>
<td>$16,000</td>
<td></td>
</tr>
</tbody>
</table>

Subtotal: ......................................................................................................... $1,252,500

Tax rate (8.9%)........................................................................................................ 111,473

Subtotal: ......................................................................................................... $1,363,973

Contingency (20%).................................................................................................. $273,028

**TOTAL ESTIMATED CONSTRUCTION COST:** ............................................................ $1,637,000

Engineering and Administrative Costs (30%):.................................................... $491,100

**TOTAL ESTIMATED PROJECT COST:** ..................................................................... $2,128,000

ENR Construction Cost Index = 12,117 (Feb 2020)
## CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
#### DEVELOPER EXTENSION SYSTEM IMPROVEMENT DE-2
428th Avenue SE and SE 120th Street

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$88,000</td>
<td>$88,000</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>16-inch DI Water Pipe, Including Fittings</td>
<td>3,200 LF</td>
<td>$180</td>
<td>$576,000</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$26,000</td>
<td>$26,000</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$26,000</td>
<td>$26,000</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>1,900 LB</td>
<td>$7.00</td>
<td>$13,300</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$16,000</td>
<td>$16,000</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>16-inch Butterfly Valves</td>
<td>10 EA</td>
<td>$10,000</td>
<td>$100,000</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>9 EA</td>
<td>$5,500</td>
<td>$49,500</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>3,760 TN</td>
<td>$30</td>
<td>$112,800</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>230 TN</td>
<td>$35</td>
<td>$8,050</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>470 TN</td>
<td>$200</td>
<td>$94,000</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>6,400 LF</td>
<td>$4</td>
<td>$25,600</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>150 TN</td>
<td>$170</td>
<td>$25,500</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>2 EA</td>
<td>$6,000</td>
<td>$12,000</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Traffic Control</td>
<td>128 HRS</td>
<td>$100</td>
<td>$12,800</td>
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</tr>
</tbody>
</table>

Subtotal: ........................................................................................................ $ 1,185,550
Tax rate (8.9%) ........................................................................................................ 105,514

Subtotal: ........................................................................................................ $ 1,291,064
Contingency (20%) ........................................................................................................ $ 257,936

TOTAL ESTIMATED CONSTRUCTION COST: ................................................................. $ 1,549,000

Engineering and Administrative Costs (30%): ......................................................... $ 464,700

TOTAL ESTIMATED PROJECT COST: .......................................................... $ 2,014,000

ENR Construction Cost Index = 12,117 (Feb 2020)
# CITY OF NORTH BEND
## PRELIMINARY PROJECT COST ESTIMATE
### DEVELOPER EXTENSION SYSTEM IMPROVEMENT DE-3
#### 417th Avenue SE

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$58,000</td>
<td>$58,000</td>
</tr>
<tr>
<td>2</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
<td>2,500</td>
<td>LF</td>
<td>$150</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$17,000</td>
<td>$17,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$17,000</td>
<td>$17,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>1,300</td>
<td>LB</td>
<td>$7.00</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$12,500</td>
<td>$12,500</td>
</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>16</td>
<td>EA</td>
<td>$3,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>7</td>
<td>EA</td>
<td>$5,500</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>2,570</td>
<td>TN</td>
<td>$30</td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>160</td>
<td>TN</td>
<td>$35</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>340</td>
<td>TN</td>
<td>$200</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>5,000</td>
<td>LF</td>
<td>$4</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>110</td>
<td>TN</td>
<td>$170</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>2</td>
<td>EA</td>
<td>$6,000</td>
</tr>
<tr>
<td>15</td>
<td>Traffic Control</td>
<td>100</td>
<td>HRS</td>
<td>$100</td>
</tr>
</tbody>
</table>

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Subtotal:</td>
<td></td>
<td></td>
<td>$786,500</td>
<td></td>
</tr>
<tr>
<td>Tax rate (8.9%)</td>
<td></td>
<td></td>
<td>$69,999</td>
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</tr>
<tr>
<td>Subtotal:</td>
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<td></td>
<td>$856,499</td>
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</tr>
<tr>
<td>Contingency (20%)</td>
<td></td>
<td></td>
<td>$171,502</td>
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<td>TOTAL ESTIMATED CONSTRUCTION COST:</td>
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<td></td>
<td>$1,028,000</td>
<td></td>
</tr>
<tr>
<td>Engineering and Administrative Costs (30%)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>TOTAL ESTIMATED PROJECT COST:</td>
<td></td>
<td></td>
<td>$1,336,000</td>
<td></td>
</tr>
</tbody>
</table>

ENR Construction Cost Index = 12,117 (Feb 2020)
### CITY OF NORTH BEND
### PRELIMINARY PROJECT COST ESTIMATE
### DEVELOPER EXTENSION SYSTEM IMPROVEMENT DE-4
### SE 101st Street

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$40,000</td>
<td>$40,000</td>
</tr>
<tr>
<td>2</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
<td>1,700 LF</td>
<td>$150</td>
<td>$255,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>900 LB</td>
<td>$7.00</td>
<td>$6,300</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$8,500</td>
<td>$8,500</td>
</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>10 EA</td>
<td>$3,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>5 EA</td>
<td>$5,500</td>
<td>$27,500</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>1,750 TN</td>
<td>$30</td>
<td>$52,500</td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>110 TN</td>
<td>$35</td>
<td>$3,850</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>230 TN</td>
<td>$200</td>
<td>$46,000</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>3,400 LF</td>
<td>$4</td>
<td>$13,600</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>80 TN</td>
<td>$170</td>
<td>$13,600</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>2 EA</td>
<td>$6,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>15</td>
<td>Traffic Control</td>
<td>68 HRS</td>
<td>$100</td>
<td>$6,800</td>
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</tbody>
</table>

Subtotal: ........................................................................................................................................ $ 539,650
Tax rate (8.9%) .................................................................................................................................. $ 48,029

Subtotal: ........................................................................................................................................ $ 587,679
Contingency (20%) ............................................................................................................................... $ 117,321

TOTAL ESTIMATED CONSTRUCTION COST: .............................................................................................. $ 705,000

Engineering and Administrative Costs (30%): .................................................................................. $ 211,500

TOTAL ESTIMATED PROJECT COST: ......................................................................................................... $ 917,000

ENR Construction Cost Index = 12,117 (Feb 2020)
CITY OF NORTH BEND  
PRELIMINARY PROJECT COST ESTIMATE  
DEVELOPER EXTENSION SYSTEM IMPROVEMENT DE-5  
14th Street NW

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td>$35,000</td>
<td>$35,000</td>
</tr>
<tr>
<td>2</td>
<td>12-inch DI Water Pipe, Including Fittings</td>
<td>1,500 LF</td>
<td>$150</td>
<td>$225,000</td>
</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
<td>$11,000</td>
<td>$11,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td>$11,000</td>
<td>$11,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>800 LB</td>
<td>$7.00</td>
<td>$5,600</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td>$7,500</td>
<td>$7,500</td>
</tr>
<tr>
<td>7</td>
<td>12-inch Gate Valves</td>
<td>10 EA</td>
<td>$3,000</td>
<td>$30,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>4 EA</td>
<td>$5,500</td>
<td>$22,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>1,540 TN</td>
<td>$30</td>
<td>$46,200</td>
</tr>
<tr>
<td>10</td>
<td>Foundation Gravel</td>
<td>100 TN</td>
<td>$35</td>
<td>$3,500</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>200 TN</td>
<td>$200</td>
<td>$40,000</td>
</tr>
<tr>
<td>12</td>
<td>Sawcutting</td>
<td>3,000 LF</td>
<td>$4</td>
<td>$12,000</td>
</tr>
<tr>
<td>13</td>
<td>Cold Mix Asphalt</td>
<td>70 TN</td>
<td>$170</td>
<td>$11,900</td>
</tr>
<tr>
<td>14</td>
<td>Connections to Existing System</td>
<td>2 EA</td>
<td>$6,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>15</td>
<td>Traffic Control</td>
<td>60 HRS</td>
<td>$100</td>
<td>$6,000</td>
</tr>
</tbody>
</table>

Subtotal................................................................................................................................................. $478,700  
Tax rate (8.9%)........................................................................................................................................... 42,604  

Subtotal:.................................................................................................................................................... $521,304  
Contingency (20%)...................................................................................................................................... $104,696  

TOTAL ESTIMATED CONSTRUCTION COST:........................................................................................................ $626,000  
Engineering and Administrative Costs (30%) .................................................................................................. $187,800  

TOTAL ESTIMATED PROJECT COST:.................................................................................................................. $814,000  
ENR Construction Cost Index = 12,117 (Feb 2020)
# CITY OF NORTH BEND
# PRELIMINARY PROJECT COST ESTIMATE
# DEVELOPER EXTENSION SYSTEM IMPROVEMENT DE-6
# NW 8th Street

<table>
<thead>
<tr>
<th>NO.</th>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>PRICE</th>
<th>AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mobilization, Cleanup, and Demobilization</td>
<td>LUMP SUM</td>
<td></td>
<td>$83,000</td>
<td>$83,000</td>
</tr>
<tr>
<td>2</td>
<td>16-inch DI Water Pipe, Including Fittings</td>
<td>3,000 LF</td>
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<td>$180</td>
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</tr>
<tr>
<td>3</td>
<td>Locate Existing Utilities</td>
<td>LUMP SUM</td>
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<td>$25,000</td>
<td>$25,000</td>
</tr>
<tr>
<td>4</td>
<td>Erosion Control</td>
<td>LUMP SUM</td>
<td></td>
<td>$25,000</td>
<td>$25,000</td>
</tr>
<tr>
<td>5</td>
<td>Additional Pipe Fittings</td>
<td>1,800 LB</td>
<td></td>
<td>$7.00</td>
<td>$12,600</td>
</tr>
<tr>
<td>6</td>
<td>Trench Safety Systems</td>
<td>LUMP SUM</td>
<td></td>
<td>$15,000</td>
<td>$15,000</td>
</tr>
<tr>
<td>7</td>
<td>16-inch Butterfly Valves</td>
<td>10 EA</td>
<td></td>
<td>$10,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>8</td>
<td>Fire Hydrants</td>
<td>8 EA</td>
<td></td>
<td>$5,500</td>
<td>$44,000</td>
</tr>
<tr>
<td>9</td>
<td>Crushed Surfacing, Top Course</td>
<td>3,520 TN</td>
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<td>$30</td>
<td>$105,600</td>
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<td>10</td>
<td>Foundation Gravel</td>
<td>220 TN</td>
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<td>$35</td>
<td>$7,700</td>
</tr>
<tr>
<td>11</td>
<td>HMA Cl. 1/2 PG 58-22</td>
<td>440 TN</td>
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<td>$200</td>
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Subtotal.................................................................................................................................$1,117,700
Tax rate (8.9%):.................................................................................................................$99,475

Subtotal:.................................................................................................................................$1,217,175
Contingency (20%):.........................................................$243,825

TOTAL ESTIMATED CONSTRUCTION COST:.................................................................$1,461,000

Engineering and Administrative Costs (30%):.........................................................$438,300

TOTAL ESTIMATED PROJECT COST:..............................................................................$1,899,000

ENR Construction Cost Index = 12,117 (Feb 2020)
<table>
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<th>NO.</th>
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Subtotal................................................................................................................................ $743,450
Tax rate (8.9%).......................................................................................................................... $66,167

Subtotal................................................................................................................................ $809,617
Contingency (20%)...................................................................................................................... $162,383

TOTAL ESTIMATED CONSTRUCTION COST:......................................................................................... $972,000

Engineering and Administrative Costs (30%).............................................................................. $291,600

TOTAL ESTIMATED PROJECT COST:............................................................................................... $1,264,000

ENR Construction Cost Index = 12,117 (Feb 2020)
### CITY OF NORTH BEND
PRELIMINARY PROJECT COST ESTIMATE
DEVELOPER EXTENSION SYSTEM IMPROVEMENT DE-8
NE 10th Street from 428th Avenue to Borst Avenue NE

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Subtotal.................................................................................................................................. $ 743,450
Tax rate (8.9%)................................................................................................................................ $ 66,167

Subtotal:...................................................................................................................................... $ 809,617
Contingency (20%)........................................................................................................................ $ 162,383

TOTAL ESTIMATED CONSTRUCTION COST:......................................................................... $ 972,000

Engineering and Administrative Costs (30%):................................................................. $ 291,600

TOTAL ESTIMATED PROJECT COST:..................................................................................... $ 1,264,000

ENR Construction Cost Index = 12,117 (Feb 2020)
CITY OF NORTH BEND  
PRELIMINARY PROJECT COST ESTIMATE  
developer extension system improvement DE-9  
SE 87th Street, 436th Place SE, and 438th Place SE

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Subtotal.................................................................................................................................................. $ 577,350
Tax rate (8.9%)........................................................................................................................................ $ 51,384
Subtotal.................................................................................................................................................. $ 628,734
Contingency (20%)...................................................................................................................................... $ 125,266

TOTAL ESTIMATED CONSTRUCTION COST:........................................................................................................ $ 754,000

Engineering and Administrative Costs (30%)........................................................................................... $ 226,200

TOTAL ESTIMATED PROJECT COST:.............................................................................................................. $ 980,000

ENR Construction Cost Index = 12,117 (Feb 2020)
APPENDIX T

SEPA CHECKLIST
NOTICE OF STATE ENVIRONMENTAL POLICY ACT (SEPA)
DETERMINATION OF NONSIGNIFICANCE (DNS)

Project Name: City of North Bend Water System Plan

DNS Issuance Date: March 27, 2020
Public Comment Deadline: April 20, 2020, 12p.m.

Description of Proposal:
The City of North Bend Water System Plan is a planning document evaluating and describing the City’s water system and providing a list of capital projects necessary to provide water service through the 10-year planning period. It is used as a resource by the City and state regulatory agencies. The plan describes management, standards, policies, service area, geography, quality, infrastructure, operations and finance of the City’s water utility.

The Checklist and Plan are available on the City’s website under public notices.

Threshold Determination:
The City of North Bend (lead agency for this proposal) has determined that this proposal does not have a probable significant adverse impact on the environment that cannot be mitigated through compliance with the conditions of the North Bend Municipal Code and other applicable regulations. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist on file with the lead agency. This information is available to the public on request by contacting Senior Planner Jamie Burrell at the email or phone below and the Plan is available for viewing under Public Notices on the City website at http://northbendwa.gov.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date of publication of the notice of DNS, allowing time for public comment. The issuance of this DNS should not be interpreted as acceptance or approval of this proposal as presented. The City of North Bend reserves the right to deny or approve said proposal subject to conditions if it is determined to be in the best interest of the City and/or necessary for the general health, safety, and welfare of the public.

SEPA Responsible Official:
David Miller, CED Director

For More Information:
Contact Jamie Burrell at the Community and Economic Development Department at (425) 888-7642 or via email to jburrell@northbendwa.gov. Email or mail written comments for the DNS to the North Bend Community and Economic Development Department, PO Box 896, North Bend, WA 98045.
Purpose of checklist:
Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

Instructions for applicants:
This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:
Please adjust the format of this template as needed. Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals:
For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements—that do not contribute meaningfully to the analysis of the proposal.

A. Background [HELP]

1. Name of proposed project, if applicable:
City of North Bend Water System Plan

2. Name of applicant:
City of North Bend
3. Address and phone number of applicant and contact person:

Donald DeBerg  
PO Box 896  
North Bend, WA 98045  
(425) 888-7652

4. Date checklist prepared:  
March 6, 2020

5. Agency requesting checklist:  
City of North Bend

6. Proposed timing or schedule (including phasing, if applicable):  
Each project proposed in the Water System Plan (Plan) will be scheduled on a project-specific basis. The recommendations proposed in the current 10-year and future 20-year planning periods are subject to change based on changing priorities and effort to coordinate with other projects.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.  
This proposal is non-project action; therefore, this question does not apply.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.  
City of North Bend Comprehensive Plan, 2015  
East King County Ground Water Management Plan, December 1998  
East King County Coordinated Water System Plan October 1989, 1996

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.  
None applicable.

10. List any government approvals or permits that will be needed for your proposal, if known.  
The plan requires approval of the Department of Health and Department of Ecology. The plan will also be checked for consistency with King County policies and planning.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)  
The City of North Bend Water System Plan is a planning document evaluating and describing the City’s water system and providing a list of capital projects necessary to provide water service through the 10-year planning period. It is used as a resource by the City and state regulatory agencies. The plan describes management, standards, policies,
12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The project area includes the City’s water service area as shown on Figure 1-3 of the Plan.

B. Environmental Elements

1. Earth

   a. General description of the site:

      (circle one): Flat, rolling, hilly, steep slopes, mountainous, other _______________

   b. What is the steepest slope on the site (approximate percent slope)?

      The southwestern edge of the City has steep slopes, which are approximately 15%.

   c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

      Soils will be considered on a project specific basis.

   d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

      The City has not had a history of unstable soils. However, slope stability will be determined on a project specific basis.

   e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

      No filling or grading will occur at this time. Grading and filling quantities will be developed along with permits and approvals for specific projects.

   f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

      Construction associated with recommended water system capital improvement projects will include protective measures for erosion control where necessary. Appropriate best management practices, erosion control, and mitigation measures will be determined on a project specific basis prior to the actual time of construction.

   g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

      This will be determined on a project specific basis.
h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:
No earth impacts are anticipated as a result of Plan adoption. Project specific impacts will be evaluated on a project specific basis.

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.
   Recommended water system capital improvement construction projects should not result in impacts to air quality with the possible exception of dust and vehicle emissions from construction equipment. Project specific impacts will be evaluated on a project specific basis.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.
   This will be determined on a project specific basis.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:
No impacts to air are anticipated as a result of the adoption of this Plan. Project specific impacts will be evaluated on a project specific basis.

3. Water [help]

a. Surface Water: [help]
   1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.
   The North, Middle and South Forks of the Snoqualmie River run through or adjacent to the City’s water service area. Additionally, there are several small streams and creeks as well as wetlands within the water service area.

   2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.
      This will be determined on a project specific basis.

   3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.
      This will be determined on a project specific basis.

   4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.
      This will be determined on a project specific basis.
5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
   Portions of the water service area lie within the 100-year flood plain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
   None anticipated. However, this will be determined on a project specific basis.

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.
   This will be determined on a project specific basis.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals . . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (If applicable), or the number of animals or humans the system(s) are expected to serve.
   None anticipated.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.
   This will be determined on a project specific basis.

2) Could waste materials enter ground or surface waters? If so, generally describe.
   None anticipated.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.
   This will be determined on a project specific basis.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:
   None required with this Plan. Individual projects will be evaluated on a project specific basis and utilize best management practices to control runoff water impacts.

4. Plants [help]
a. Check the types of vegetation found on the site:

- _x_ deciduous tree: alder, maple, aspen, other
- _x_ evergreen tree: fir, cedar, pine, other
- _x_ shrubs
- _x_ grass
- _x_ pasture
- _x_ crop or grain
- _x_ Orchards, vineyards or other permanent crops.
- _x_ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
- _x_ water plants: water lily, eelgrass, milfoil, other
- _x_ other types of vegetation

b. What kind and amount of vegetation will be removed or altered?
This will be determined on a project specific basis.

c. List threatened and endangered species known to be on or near the site.
No threatened or endangered species have been identified within the water service area or surrounding area.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
This will be determined on a project specific basis.

e. List all noxious weeds and invasive species known to be on or near the site.
This will be determined on a project specific basis.

5. Animals [help]
a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

- birds: hawk, heron, eagle, songbirds, other: crows
- mammals: deer, bear, elk, beaver, other:
- fish: bass, salmon, trout, herring, shellfish, other __________

b. List any threatened and endangered species known to be on or near the site.
Endangered species include gray wolves. Proposed threatened species included North American wolverines. Threatened birds include marbled murrelet and Yellow-billed cuckoo. Threatened fish include the bull trout.

Threatened and endangered species will also be evaluated on a project-specific basis.

c. Is the site part of a migration route? If so, explain.
Yes, Western Washington is part of the Pacific Flyway. Potential impacts will be evaluated on a project specific basis.
d. Proposed measures to preserve or enhance wildlife, if any:
This will be evaluated on a project specific basis.

e. List any invasive animal species known to be on or near the site.
This will be evaluated on a project specific basis.

6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Energy needs will be evaluated on a project specific basis. However, energy demands will largely consist of electrical energy for operation of pumps and electronics systems.

b. Would your project affect the potential use of solar energy by adjacent properties?
   If so, generally describe.

Potential impacts will be evaluated on a project-specific basis, but projects are unlikely to impact potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal?
   List other proposed measures to reduce or control energy impacts, if any:

Opportunities for energy-conserving features will be identified on a project-specific basis.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal?
   If so, describe.

Potential hazards will be identified on a project-specific basis.

1) Describe any known or possible contamination at the site from present or past uses.
   No anticipated contamination issues at project sites; sites will be fully evaluated on a project-specific basis.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.
   Gas transmission and service lines, when present within a project area, will be identified on project plans, and will be avoided. The designer and the contractor will coordinate with the gas utility provider on a project-specific basis to avoid utility conflicts.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.
Use of toxic or hazardous chemicals will be evaluated on a project-specific basis.

4) Describe special emergency services that might be required.
   To be determined on a project-specific basis.

5) Proposed measures to reduce or control environmental health hazards, if any:
   To be determined on a project-specific basis.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

   Traffic noise is anticipated in some project areas, but is not expected to impact projects. Other potential sources of noise will be evaluated on a project-specific basis.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

   This is a non-project action, however during implementation of the projects described in the plan, short-term noise from construction activities is anticipated during normal daytime working hours.

3) Proposed measures to reduce or control noise impacts, if any:
   Necessary measures will be determined on a project-specific basis.

8. Land and Shoreline Use  [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.
   To be determined on a project-specific basis. In general, projects will be within existing City property and ROW, and are not anticipated to affect land uses on nearby or adjacent properties.

b. Has the project site been used as working farmlands or working forest lands? If so, describe.
   How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?
   This will be determined on a project specific basis.

   1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

      None anticipated.

   c. Describe any structures on the site.
      To be determined on a project specific basis.

   d. Will any structures be demolished? If so, what?
To be determined on a project specific basis.

e. What is the current zoning classification of the site?
To be determined on a project specific basis.

f. What is the current comprehensive plan designation of the site?
To be determined on a project specific basis.

g. If applicable, what is the current shoreline master program designation of the site?
To be determined on a project specific basis.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.
To be determined on a project specific basis.

i. Approximately how many people would reside or work in the completed project?
None.

j. Approximately how many people would the completed project displace?
None anticipated.

k. Proposed measures to avoid or reduce displacement impacts, if any:
To be determined on a project-specific basis. No displacement impacts are anticipated.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
Proposals will be consistent with local ordinances related to land use planning and will be determined on a project specific basis.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:
No impacts anticipated.

9. Housing  [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
None anticipated.

c. Proposed measures to reduce or control housing impacts, if any:
No impacts anticipated.

10. Aesthetics  [help]
a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
To be determined on a project-specific basis. One new water storage reservoir is contemplated in the plan. The height will likely match an existing, neighboring water reservoir of 29 feet.

b. What views in the immediate vicinity would be altered or obstructed?
To be determined on a project-specific basis; no impacts are anticipated.

b. Proposed measures to reduce or control aesthetic impacts, if any:
To be determined on a project-specific basis; no impacts are anticipated.

11. Light and Glare  [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
To be determined on a project-specific basis; no impacts are anticipated.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
To be determined on a project-specific basis; no impacts are anticipated.

c. What existing off-site sources of light or glare may affect your proposal?
To be determined on a project-specific basis.

d. Proposed measures to reduce or control light and glare impacts, if any:
To be determined on a project-specific basis; no impacts are anticipated.

12. Recreation  [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?
To be determined on a project-specific basis.

b. Would the proposed project displace any existing recreational uses? If so, describe.
To be determined on a project-specific basis.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
To be determined on a project-specific basis.

13. Historic and cultural preservation  [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.
This proposal is a non-project action and does not affect a specific site. The following historic properties are listed in the Land Use Element of the City’s Comprehensive Plan: Tollgate Farm, Si View Park Buildings, Fort Smalley, Meadowbrook Farm, Milwaukee Railroad Bridge (since removed), Downtown Commercial Historic District, Snoqualmie
Tribe “Swing Rock”, and the Forest Service Complex. Some of these are listed on King County’s Historic Preservation Program and there are efforts to identify other historic sites and to list these with King County’s program.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

This proposal is a non-project action and does not affect a specific site. The City of North Bend includes some landmarks or evidence of historic, archaeological, scientific, or cultural importance; however no known specific sites are affected by this proposal.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

Future projects will adhere to and comply with all local, State, and Federal historical and archaeological preservation laws, should any artifacts or items be discovered during construction. Washington cultural resource laws (RCW 27.53) state that no known archaeological resources or site can knowingly be damaged without obtaining a certified permit from the Washington State Office of Archaeology and Historic Preservation (OAHP). Also under Washington State law, all archaeological sites and resources are protected on private and public lands (RCW 27.53). Section 106 of the National Historic Preservation Act of 1996, as amended, stipulates early, often, and continuous consultation with the project’s Federal/State lead agency and affected Native American Tribe(s) depending on the jurisdiction of the proposed project. If any significant archaeological resources are discovered during project related construction excavation and/or operation/maintenance, all activities must stop in the immediate area. A professional archaeologist should be contacted to inspect and assess the disturbed archaeological deposits. If necessary, OAHP and the affected Native American Tribe(s) would be contacted to further assess the damaged cultural resources. Future site-specific project actions would be subject to further environmental review on a case-by-case basis.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

To be determined on a project-specific basis.

14. Transportation [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

To be determined on a project-specific basis.
b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

**To be determined on a project-specific basis.**

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

**To be determined on a project-specific basis.**

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

**To be determined on a project-specific basis.**

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

**To be determined on a project-specific basis.**

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?

**To be determined on a project-specific basis.**

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

**To be determined on a project-specific basis.**

h. Proposed measures to reduce or control transportation impacts, if any:

**To be determined on a project-specific basis.**

15. **Public Services**  [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

**No. Projects will facilitate provision of public services such as drinking water and fire protection.**

b. Proposed measures to reduce or control direct impacts on public services, if any.

**No effects anticipated.**

16. **Utilities**  [help]

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other phone, cable television
c. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Projects recommended by this plan propose water utility improvements, provided by the City of North Bend.

C. Signature  [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____________________________________________________________
Name of signee  Donald DeBerg  __________________________________________
Position and Agency/Organization  City of North Bend ________________________
Date Submitted:  3/12/2020 ______
D. Supplemental sheet for nonproject actions

(IT IS NOT NECESSARY to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

The Water System Plan, alone, does not result in an increased discharge to water, emissions to air, production, storage, or release of toxic or hazardous substances, or production of noise. Construction of the projects proposed in the plan may increase impervious surface areas, causing increases in the amount of stormwater discharged to water. These impacts will be determined and evaluated on a project specific basis.

Proposed measures to avoid or reduce such increases are:

Projects that are subject to SEPA will be reviewed to identify environmental impacts and mitigation measures. Furthermore, all projects will comply with local, state, and federal regulations related to environmental impacts. Stormwater runoff impact will be mitigated consistent with the standards in the version of the King County Surface Water Design Manual that the City has adopted at the time of design.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

The Water System Plan, alone, does not result in any impacts on plants, animals, fish, or marine life. Some proposed projects identified in the plan may result in increased impervious surface area and runoff quantities. These impacts will be determined and evaluated on a project specific basis.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

Projects that are subject to SEPA will be reviewed to identify environmental impacts and mitigation measures. Furthermore, all projects will comply with local, state, and federal regulations related to environmental impacts. Stormwater runoff impact will be mitigated consistent with the standards in the version of the King County Surface Water Design Manual that the City has adopted at the time of design. If threatened or endangered plant, animal, fish or marine species are discovered during construction, all work will cease until the Department of Fish and Wildlife or the Department of Natural Resources can be contacted and an expert brought on to the site.
3. How would the proposal be likely to deplete energy or natural resources?
The Water System Plan, alone, does not result in any effects on energy or natural resources. Subsequent construction and operation of the water system may result in increased energy demand and usage. These impacts will be determined and evaluated on a project specific basis.

Proposed measures to protect or conserve energy and natural resources are:
To be determined on a project specific basis.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?
The Water System Plan, alone, does not result in any direct impacts on sensitive areas or areas designated for governmental protection such as parks, wilderness, wild and scenic rivers, threatened or endangered species, historic or cultural sites, wetlands, floodplains, or prime farmlands. Subsequent developments would be required to satisfy current local, state, and federal regulations governing these aforementioned areas of concern.

Proposed measures to protect such resources or to avoid or reduce impacts are:
To be determined on a project specific basis.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?
The Water System Plan, alone, does not result in any direct impacts to land and shoreline use. Project developments will be required to comply with all local, state, and federal regulations.

Proposed measures to avoid or reduce shoreline and land use impacts are:
Projects that are required to satisfy SEPA requirements will be thoroughly screened and reviewed for environmental compliance. Furthermore, all projects will be required to comply with local, state, and federal regulations related to environmental impacts. To be determined on a project specific basis.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?
This will be determined on a project specific basis. However, the proposal is not likely to increase demands on transportation or public service and utilities. Improvements to the water utility will increase reliability of the water system.

Proposed measures to reduce or respond to such demand(s) are:

Construction associated with the water distribution system will be scheduled to avoid peak hour impacts to major arterials. Traffic control plans will be developed and approved by the City of North Bend, King County, and/or WSDOT to minimize any
impacts to local neighborhoods and commercial areas. No long-term transportation impacts are anticipated as a result of this proposal.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

The proposal does not conflict with local, state, or federal laws or requirements for the protection of the environment.
NOTICE OF STATE ENVIRONMENTAL POLICY ACT (SEPA)
DETERMINATION OF NONSIGNIFICANCE (DNS)

Project Name: City of North Bend Water System Plan

DNS Issuance Date: March 27, 2020
Public Comment Deadline: April 10, 2020, 12p.m.

Description of Proposal:
The City of North Bend Water System Plan is a planning document evaluating and describing the City’s water system and providing a list of capital projects necessary to provide water service through the 10-year planning period. It is used as a resource by the City and state regulatory agencies. The plan describes management, standards, policies, service area, geography, quality, infrastructure, operations and finance of the City’s water utility.

The Checklist and Plan are available on the City’s website under public notices.

Threshold Determination:
The City of North Bend (lead agency for this proposal) has determined that this proposal does not have a probable significant adverse impact on the environment that cannot be mitigated through compliance with the conditions of the North Bend Municipal Code and other applicable regulations. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist on file with the lead agency. This information is available to the public on request by contacting Senior Planner Jamie Burrell at the email or phone below and the Plan is available for viewing under Public Notices on the City website at http://northbendwa.gov.

This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date of publication of the notice of DNS, allowing time for public comment. The issuance of this DNS should not be interpreted as acceptance or approval of this proposal as presented. The City of North Bend reserves the right to deny or approve said proposal subject to conditions if it is determined to be in the best interest of the City and/or necessary for the general health, safety, and welfare of the public.

SEPA Responsible Official:
David Miller, CED Director

For More Information:
Contact Jamie Burrell at the Community and Economic Development Department at (425) 888-7642 or via email to iburrell@northbendwa.gov. Email or mail written comments for the DNS to the North Bend Community and Economic Development Department, PO Box 896, North Bend, WA 98045.

City of North Bend Community & Economic Development
920 SE Cedar Falls Way, P.O. Box 896, North Bend, WA 98045 • Phone 425.888.5633 • Fax 425.888-5636 • northbendwa.gov
APPENDIX U

CORRESPONDENCE AND APPROVALS
ORDINANCE 1728

AN ORDINANCE OF THE CITY OF NORTH BEND, WASHINGTON, ADOPTING THE 2020 WATER SYSTEM PLAN; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, Washington Administrative Code 246-290 requires Class A water system managers to prepare every 10 years a Water System Plan (Plan) of the water system; and

WHEREAS, the City of North Bend, a manager of a Class A water system, caused a Plan to be prepared in accordance with WAC 246-290; and

WHEREAS, the draft Plan was routed to all interested parties and their comments incorporated into the final version of the Plan; and

WHEREAS, the City held a Town Hall meeting about the Plan on May 26, 2020, as well as two Public Hearings on the Plan on June 16, 2020 and August 4, 2020 as prescribed in WAC 246-290-100;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF NORTH BEND, WASHINGTON, DOES HEREBY ORDAIN AS FOLLOWS:

Section 1. July 2020 Water System Plan, Adopted: The July 2020 Water System Plan, as prepared by Gray & Osborne, Inc. (G&O #19473), is hereby adopted, contingent on approval by the Washington State Department of Health as may be required by law. Pursuant to RCW 35A.12.140, a copy of the 2020 Water System Plan shall be filed in the office of the City Clerk for use and examination by the public and is also available on the City’s website.

Section 2. Severability: Should any section, paragraph, sentence, clause or phrase of this ordinance, or its application to any person or circumstance, be declared unconstitutional or otherwise invalid for any reason, or should any portion of this ordinance be pre-empted by state or federal law or regulation, such decision or pre-emption shall not affect the validity of the remaining portions of this ordinance or its application to other persons or circumstances.

Section 3. Effective Date: This ordinance shall be published in the official newspaper of the City, and shall take effect and be in full force five (5) days after the date of publication.

CITY OF NORTH BEND:

Rob McFarland, Mayor

Published: August 14, 2020
Effective: August 19, 2020

APPROVED AS TO FORM:

Michael R. Kenyon, City Attorney

ATTEST/AUTHENTICATED:

Susie Oppedal, City Clerk
## City Council Agenda Bill

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<tr>
<th>SUBJECT:</th>
<th>Agenda Date: August 4, 2020</th>
<th>Department/Committee/Individual</th>
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<tbody>
<tr>
<td>Public Hearing Cont., and Ordinance Adopting the 2020 Water System Plan</td>
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<td>Mayor Rob McFarland</td>
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<td>City Administrator – David Miller</td>
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<td>City Attorney – Mike Kenyon</td>
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<td>Community &amp; Economic Development – David Miller</td>
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<td>Finance – Dawn Masko</td>
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<td>Public Works – Mark Rigos, P.E.</td>
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### Attachments:
- Ordinance, Executive Summary, Public Hearing Notice, Public Comments

### SUMMARY STATEMENT:

On March 19, 2019, the City Council authorized a work order with Gray and Osborne, Inc. (G&O) to update the City’s Water System Plan (the Plan) in accordance with WAC 246-290-100. Previously, plan updates were required to be completed every 6 years, however recent changes to state law now allow plans to be updated every 10 years. The most recent update to the plan was completed in 2010 and this new plan is intended to be adequate until 2030.

Once in draft form, the plan is submitted to the Washington State Department of Health (DOH) and the King County Utilities Technical Review Committee (UTRC) for review. DOH shares the Plan with the Washington State Department of Ecology (Ecology) and all three entities check for consistency with state law and/or consistency with Countywide planning documents. Ultimately, the Plan must be approved by DOH, but this can only be done after adoption by the City Council.

The Plan was completed in Draft form and sent to DOH and UTRC on March 18, 2020. All three entities had up to 90 days to complete their review and submit comments to the City. Ecology submitted their comments on May 22, 2020, DOH submitted theirs on June 11, 2020, and UTRC submitted initial comments on June 30, 2020. UTRC Chair Jae Hill informed City staff that they may have additional comments after their July 15, 2020 meeting. After receiving comments, staff worked with G&O to make necessary changes to the Plan. The next steps are City Council adoption and submission to DOH and UTRC for final approval.

Public Involvement is also required for adoption of the Plan. The City held a virtual Town Hall meeting on May 26, 2020 and opened a public hearing for the Plan at the June 16, 2020 City Council Meeting. The public hearing was continued to the August 4, 2020 City Council meeting, where final adoption of the Plan is anticipated to take place. This is a conditional adoption of the plan, contingent on approval by King County and the DOH.

The Executive Summary for the draft Plan is attached and the full draft Plan can be viewed on the City’s website at the following URL: [https://northbendwa.gov/DocumentCenter/View/7646/Water-System-Plan](https://northbendwa.gov/DocumentCenter/View/7646/Water-System-Plan)

### APPLICABLE BRAND GUIDELINES:
Consistent delivery of quality basic services including transportation and traffic management.

### COMMITTEE REVIEW AND RECOMMENDATION:
This item was discussed at the June 26, 2020 Transportation and Public Work Committee meeting and was recommended for approval.
RECOMMENDED ACTION: MOTION to approve AB20-107, an ordinance adopting the 2020 Water System Plan, as a 5 Year Plan and incorporating those ministerial amendments proposed by the King County Utilities Technical Review Committee in its letter dated August 3, 2020, as a final reading.

<table>
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<tr>
<th>Meeting Date</th>
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<tr>
<td>June 16, 2020</td>
<td>AB20-085 – Passed - 1st Reading</td>
<td>6-0</td>
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<tr>
<td>August 4, 2020</td>
<td>Passed Ordinance 1728</td>
<td>5-0</td>
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</tbody>
</table>
June 11, 2020

MARK RIGOS  
NORTH BEND, CITY OF  
PO BOX 896  
NORTH BEND WA 98045

Subject: City of North Bend, ID# 60100  
King County  
Water System Plan Review - 2020  
Submittal #20-0303

Dear Mr. Rigos:

Thank you for submitting the Water System Plan (WSP) for the City of North Bend (the City), received in this office on March 18, 2020. We have reviewed the plan and offer the following comments. These comments must be adequately addressed prior to approval of the WSP.

We recognize that the City requires Mitigation water from Sallal Water Association (Sallal) in order to meet demands in the near future and that the validity of this plan relies on the pending agreement between the two systems.

**Description of Water System**

1. Provide a determination of local government consistency from the City of North Bend’s Planning Department.

2. King County Utilities Technical Review Committee will review your WSP. Please respond to their issues. Adequate responses to their issues will be necessary in order to receive a WSP Adoption Ordinance from King County.

3. Is the Cedar River Partners’ property in the City’s Retail Service Area and/or its Wholesale Service Area? Are the water demands for this project included in the City’s demand forecast? Is Sallal’s service area included in the City’s Wholesale Service Area?

**Basic Planning Data**

4. Consider including in this chapter or in an appendix, a description of and graphics showing the historical seasonal variation in mitigation volume required.

5. The WSP states that enhanced efforts are needed to address summer peak demands. These would include 1) reduction of summer MDD, 2) reduction in distribution system leakage, 3)
the agreement with Sallal, and 4) additional mitigation sources such as Golf Course Well water right. If these efforts do not occur, at what point would the City be prepared to impose a moratorium?

System Analysis

6. I believe the 2009 version of our water system design manual said to design a pump station to provide fire flow plus maximum day demand assuming the largest routinely used pump was out of service. The update in our water system design manual reflects the requirement for system reliability per Chapter 246-293 of the WAC and does not include the word “routinely.” This means that in a coordinated water system plan area, the booster pump station serving a closed system must be able to provide fire flow at maximum day demand with the largest pump out of service. In this case, the 2,650gpm pump of the 710 booster pump station. Please show the system meets this requirement or provide suggested system improvements with updated capital improvement schedule.

7. Table 3-11 Source Pumping Capacity Analysis uses the Mt. Si Springs pump capacity to fill the clearwell (2,000gpm) and not the pump capacity to the system (1,250gpm as noted on pages 1-7 and 1-9). Source capacity is also used to determine the time it takes to replenish fire suppression storage (refer to Tables 3-1 and 3-2). Does the system meet the city and Water System Design Manual source requirements and resiliency recommendations where 1,250gpm is used for Mt. Si Springs source? Please explain why it makes sense to use the pump capacity to the clearwell and not the system.

8. Chapter 4 Hydraulic Modeling. The hydraulic model should be re-calibrated to verify that the model still accurately reflects the distribution system. Inadvertent valve closures, PRV station changes and pump station operating characteristic can all change. As you are aware the department is allowing ten-year approval periods for qualifying water system plans, this could mean that the hydraulic model will not be verified for nearly 20 years. Provide a schedule for verifying the model calibration.

Water Use Efficiency/ Water Rights

9. Respond to the issues contained in Department of Ecology’s letter dated May 22, 2020 and incorporate those into your WSP.

10. Please provide documentation of the public meeting held to discuss the 2020-2026 Water Use Efficiency Goals for the City.

11. Has the North Bend Operation and Monitoring Plan referenced in the Centennial well permit documentation been updated since 2007? If not, what is the intention regarding updating this plan? Please include the North Bend Operation and Monitoring Plan (Golder, 2007e), its update, or both.

Source Protection

12. A few sources of potential contamination do not appear to be included in the EDR & windshield survey. Please consider other land uses like cemeteries, farms, parks, school athletic fields, which can be sources of contamination from chemical application.
13. It is unusual to combine CFR & modelled delineation methods, please elucidate 1) what the model uncertainties were that are addressed by including the CFR and 2) why the City wants to take an overly conservative approach?

14. Note that the area identified as “buffer” for the spring source appears to be more appropriately identified as the Critical Aquifer Recharge Area (CARA). Depending on how local codes are written, the “buffer” delineation may not be considered a part of the wellhead protection area (WHPA) or provided the appropriate protections. The spring source is located outside of City limits, the plan should include a discussion of King County’s CARA regulation and any coordination the City has done with the County, Department of Natural Resources and the US Forest Service relating to the protection of the spring source.

15. The adoption of the WHPA areas should be done as a part of the adoption of the water system plan and not be a recommendation. The recommendations about updating the CARA are appropriate.

16. The Wellhead Protection Plan recommends that the City adopt requirements for secondary containment within WHPA time of travel zones. Does the City intend to implement this and other recommendations in section 6.3? Please discuss.

**Water Quality**

17. Please provide the Stage 2 Disinfection Byproduct Monitoring Plan.

18. Regarding the Coliform Monitoring Plan (CMP), we have the following comments.

   a. Please provide standard operating procedures for coliform routine and repeat sampling in the appendix with the CMP.

   b. In Section E, as part of the routine sample schedule, this indicates that X14 (S01 Mt Si Spring) and S17 (S02, Centennial Well) are used as routine sample sites. Only distribution sites are appropriate as routine coliform sample sites. Please update or clarify. The recent coliform sample locations in our database correctly show that the Spring or well are not used as routine sites.

   c. Consider adding a coliform sample site in the 780 pressure zone. It appears that there is not a routine sample site in this pressure zone.

   d. Consider sampling more often each month to keep monitoring more continuous. For example, you may want to sample three times per month (two samples per week for three weeks) or two times per month (three samples each week).

   e. The City’s Water Facilities Inventory (WFI) includes 239 non-residential connections (industrial, institutions, commercial) and four recreational services. However, no non-residential population is listed on the WFI. Some students, employees, visitors or other users of these non-residential connections may already be counted as residents of North Bend. While cautioning not to double count, please do provide estimates of consumers who come from outside the North Bend area in each of the WFI non-residential population sections. This additional population may or may not affect the number of routine coliform samples required each month.
f. Please consider when the Sallal emergency intertie may be in use. If North Bend incurs a positive bacteriological sample in its distribution system and the Sallal intertie is in use, North Bend must contact Sallal for Sallal to sample any of their groundwater wells that were in use.

**Operations & Maintenance**

19. Has the City completed the “Water Shortage Response Plan”? We typically see this plan as part of the emergency response plan. Given the history of the City not meeting the system demand (to include mitigation demand), planning for water shortage seems especially important. This response plan should identify the drought of record and what measures the City and community will execute to minimize demand.

20. Please add to the record keeping section of this chapter, the water main distribution system project construction completion reports. Please discuss the City’s customer complaint program.

21. Consider updating the cross-connection control (CCC) program / manual. At a minimum, add a revision date to the CCC manual.
   
   a. Page 4 of the CCC manual refers to the authority given by Municipal Code 13.28. Codification of Ordinance No. 391 was updated from 13.38 to 13.16.

   b. The CCC program / manual must include procedures for responding to backflow incidents.

   c. Reference to AWWA PNWS CCC manual is great. Consider adding Table 9 hazards from WAC 246-290-490 to highlight the minimum required protection for high hazard connections. For example, wastewater treatment plants require RPBA and air gap. This is not a recommendation as the AWWA reference suggests.

**Distribution Facilities Design and Construction Standards**

22. A complete up-to-date set of water distribution standard details and specifications must be submitted and reviewed if seeking project submittal exception to DOH for distribution main projects under WAC 246-290-125(2). Appendix K, Construction Standards, Section 6 WATER, 6.01 General Requirements refers to the standards applying within city limits. The city must provide construction standards for the city water system, both in and out of city limits, to meet the criteria for the submittal exception. Please make it clear that this set of water distribution standard details and specifications applies to projects inside and outside of city limits, clearly describe identify where these deviate if needed, or provide a set for projects outside of city limits.

23. The Standard Detail No. W-16 Air Vacuum Release Valve Assembly shows a drilled hole to drain the vent line. The Department considers this a potential cross-connection. Think about eliminating the drilled hole from the air vacuum release valve design.

24. Appendix K, Construction Standards, Section 6 Water, hydrostatic test refers to Standard Specification Section 7-09.3(23). Is this a reference to WSDOT standard specification section 7-09.3(23)? Please clarify what this refers to.
Improvement Plan

25. Has the City implemented an asset management program, which includes a remaining useful life assessment of major water system facilities? Please note that systems with an asset management program are awarded more points in the ranking process for selecting State Revolving Fund projects to fund. The Capital Improvement Plan (CIP) is a good place to describe the City’s asset management program.

26. Please note that Sallal Well 2 now is required to provide disinfection treatment that achieves 4-log virus inactivation before the first customer. They installed 300-lineal feet of main to meet this requirement. Confirm that the MT-4 Sallal Mitigation Intertie project can still be constructed as described in this plan or update the chapter.

27. As mentioned in the plan, the system has considerable distribution system leak rate and the existing system does not meet minimum fire flow requirements. Some project to address critical fire flow deficiencies are not scheduled for completion during this planning period. For example, project D-6 to address inadequate fire flow at the elementary school (400 East 3rd) Node J-58 of the hydraulic analysis (refer to Tables 4-8, 4-10, and 7-2). How was the ranking or prioritization of main replacement projects conducted (material type, age, frequency of leaks, fire flow requirements for example)?

28. Given the limitations in supply and considerable distribution system leak rate of more than 20% throughout most of the last planning period, consider a more aggressive main replacement schedule.

29. We notice that the Mitigation Reservoir, Project reference MT5 is not included in the 10 year CIP schedule. Please explain.

Financial Planning

No comments.

Other Documentation

30. The water system must meet the consumer input process outlined in WAC 246-290-100(8). Please include documentation of a consumer meeting discussing the WSP, prior to DOH approval of the WSP.

31. Prior to DOH approval, the City’s governing body must approve and adopt the WSP.

32. Please provide copies of any comments made by adjacent purveyors or other interested parties, along with the City’s response to those comments.

33. A signed SEPA Checklist was included with the draft WSP. Provide a SEPA threshold determination with the final WSP submittal.

34. Please have your engineers sign and date the PE stamp page for the final copy submitted to the Department.
Closing

We hope that you have found these comments to be clear, constructive and helpful in the development of your final draft WSP. We ask that you submit the revised WSP on or before September 12, 2020. In order to expedite the review of your revised submittal, please include a cover letter summarizing how each of the above comments was addressed in the revised WSP and where each response is located (i.e., page numbers, Appendices, etc.)

Regulations establishing a schedule of fees for review of planning, engineering, and construction documents have been adopted (WAC 246-290-990). The total cost is $3705.00. An itemized invoice for the review of this project has been sent to the primary contact on file for your water system. Please note that this fee covers our current review and one more submittal for this project. If additional submittals are required, then an invoice for additional fees will be included with our final approval letter. Please remit complete payment in the form of a check or money order within thirty days of the date of this letter in the enclosed envelope or mail payment to: WSDOH, Revenue Section, PO Box 1099, Olympia WA 98507-1099.

Thank you again for submitting your revised Water System Plan for our review. If you have any comments or questions concerning our review, please contact me at (253) 395-6771.

Sincerely,

Richard Rodriguez
Regional Planner

Enclosure (invoice)

cc: Jae Hill, King County UTRC
    Seattle/King County Health
    Ria Berns, WSDOE - NWRO
    Russ Porter, P.E., Grey & Osborne, Inc.
    Kraig Kramer, Certified Operator, North Bend
    Don DeBerg, P.E., City Engineer, North Bend

ecc: Brietta Carter, P.E., DOH
Mark Rigos
Public Works Director
City of North Bend
920 SE Cedar Falls Way
North Bend, WA 98045
mrigos@northbendwa.gov

Water System Plan Comment Letter
ADVISORY COMMENT(S) Below

RE: City of North Bend – Water System Plan, Washington State Department of Health
System ID #60100A Reviewed by Washington State Department of Ecology

Dear Mark Rigos:

Thank you for the opportunity to review the City of North Bend’s (North Bend) March 2020 Water System Plan (WSP), received by Ecology on March 18, 2020. Consistent with the Memorandum of Understanding between the Department of Health (DOH) and Department of Ecology (Ecology) regarding joint review and approval of WSPs, this letter is being sent to your office with Ecology’s comments. Specific elements of Ecology’s WSP review included the Water Rights Self-Assessment (Appendix E) of North Bend’s Water System as well as additional water rights documentation, including the water right files themselves and North Bend’s previous WSPs and project reports.

Ecology identified several issues when reviewing the WSP and supplemental documentation. Please see our ADVISORY COMMENTS below.

ADVISORY COMMENTS

Expected Future Mitigation Demand to Exceed Existing Mitigation Capacity

North Bend’s two water rights, the certificate for Mt. Si Springs (S1-00260C) and the permit for the Centennial Well (G1-26617(A)P), combined, have authorized instantaneous and annual quantities that are above the City’s current production, meaning the City seemingly has capacity for growth. This characterization does not wholly capture the actual limits of the City’s water
rights, which are interruptible and tied to the availability of mitigation water. The City actively mitigates its withdrawals from the Centennial Well with water from a facility at Hobo Springs that is purchased from the City of Seattle. However, based on forecasts that Golder Associates produced for North Bend and discussed in the Executive Summary for the draft “City of North Bend Water Supply and Mitigation Forecast” (included in Appendix F of the WSP), it appears that North Bend could exceed its available mitigation capacity within the next 5 years.

This forecast highlights that North Bend needs to acquire additional sources of mitigation or modify current system management in order to continue to grow while remaining compliant with permit G1-26617(A)P. Additionally, the Report of Examination (ROE) for water right permit G1-26617(A)P requires that North Bend reach an agreement with Sallal Water System to obtain water for backup/additional mitigation and install infrastructure to make that water available when required for mitigation. Until North Bend secures this secondary mitigation source, or an alternative secondary mitigation source, there is vulnerability for the City in its continued reliance on this permit. In the 13 years since the ROE was issued, North Bend and Sallal have not reached an agreement. At this time, North Bend has no other approved secondary mitigation sources. Ecology recognizes that North Bend intends to reach an agreement with Sallal within the next two years, as described in the WSP Executive summary, and this planned source of mitigation water is included in the WSP’s Capital Improvement Plan. While North Bend has continued to work towards developing a more resilient water system, including increased transparency and operational changes, Ecology emphasizes that this agreement, along with other potential sources of mitigation water, is essential for North Bend’s ability to accommodate near-term future growth.

If North Bend does not secure additional mitigation sources within the next five years, North Bend runs the risk of non-compliance with G1-26617(A)P and may exceed its capacity to serve future growth. To address these mitigation shortfalls, North Bend should take clear and measured steps in the short term to build mitigation capacity or plan to curtail growth.

**Missing and Incorrect Information on Water Right Self-Assessment**

In the water rights documentation presented on the Water Rights Self-Assessment (Appendix E), Ecology identified the following missing or incorrect information:

1. North Bend does not identify the limitations of S1-00620C and G1-26617(A)P, as required by the form, although these are identified elsewhere in the WSP. Specifically:
   A. S1-00620C is subject to a 3.0 cubic-feet-per-second (CFS) bypass flow at the diversion, to be maintained at all times, as described in the ROE.
   B. G1-26617(A)P is subject to WAC 173-507 and may only be used when mitigated, as described in the ROE and permit.
2. The Water Right Permit and Certificate numbers appear to be switched with Water Facilities Inventory source numbers.
3. S1-28050 is not a change application. S1-28050 is an application for a new water right.
Cascade Golf Course Water Right

North Bend describes the 2018 purchase of the Cascade Golf Course water right and North Bend’s intent to add and use the water right as a mitigation source in Chapters 1, 3, and 7 of the WSP. Ecology has not yet received or processed an application to change the purpose of this water right from irrigation to mitigation. To memorialize this acquired water right as an additional mitigation source, Ecology encourages North Bend to expeditiously move forward with the water right change application process.

Additionally, Ecology observed an abandoned well on the site of the former Cascade Golf Course during a site visit in 2018, before North Bend purchased the golf course and appurtenant water right, G1-00142C. Ecology’s well log records do not indicate that this well was ever decommissioned, as required by WAC 173-160-381. If this well is not yet decommissioned, the work should be completed in a timely manner and Ecology will require decommissioning as part of any authorization to change G1-00142C.

Water Shortage Response Plan

The city needs to complete its water shortage response plan, as required by WAC 246-290-420. Ecology notes that compliance with WAC 246-290 is an explicit provision in permit G1-26617(A)P. The need for this plan is discussed in Chapters 3 and 6, but a plan is not presented in the WSP. The documents provided in Appendix M do not include a plan to address mitigation capacity issues. While there is no formal decision Ecology can make regarding this specific plan, Ecology requests to review it prior to finalization and is willing to offer technical assistance.

Typographic Error in Chapter 3 – Facility Analysis, Page 3-18

The Mt. Si Springs water right, S1-00620C, requires that a 3.0 CFS bypass flow must be maintained at all times, not 30 CFS as written in the WSP.

GENERAL INFORMATION

Water Right Summary

North Bend’s water rights portfolio consists of ADDITIVE WATER RIGHTS S1-00620C and G1-26617(A)P.

In addition to the ADVISORY COMMENTS provided earlier in this letter, please see Table 1 below for a comprehensive list of North Bend’s water rights and their respective relationships. Please note that the water rights summarized here AGREE with North Bend’s Water Right Self-Assessment (Appendix E) of the WSP.
Table 1. Existing Water Rights

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<tr>
<td>S1-00620C</td>
<td>Mt Si Springs/S01</td>
<td>5 CFS</td>
<td>0</td>
<td>336 ac-ft/yr*</td>
<td>0</td>
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<td></td>
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<td>(2,250 GPM)</td>
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<td></td>
<td>0</td>
<td>3,360 ac-ft/yr*</td>
<td></td>
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<tr>
<td>G1-26617(A)P</td>
<td>Centennial Well/S03</td>
<td>2,646 GPM**</td>
<td>0</td>
<td>3,094 ac-ft/yr**</td>
<td>0</td>
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<td></td>
<td>4,896 GPM**</td>
<td>3,430 ac-ft/yr**</td>
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</tr>
</tbody>
</table>

*Quantities reported in acre-feet per year, or ac-ft/yr. Use of S1-00620C is subject to a 3 cfs bypass flow at Mt. Si Springs at all times. This flow is not always met in the summer months. Therefore, North Bend cannot use this water right continuously.

** Fully utilizing the annual and instantaneous quantities associated with G1-26617(A)P requires mitigation from another source. Mitigation availability is a key limiting factor for this permit, in addition to the additive Qi and Qa listed on this permit.

** Future Demand **

The WSP provides metering records from 2009 – 2019, connection records from 2009 – 2019, and calculations based on this information in Tables 2-1 through 2-10. As of 2019, North Bend served approximately 2,745 connections. Total production (from Table 3-10 of the WSP) was 613 acre-feet. The calculations provided in Table 2-10 indicate that each connection served between 0.8 and 2.9 equivalent residential units or ERUs, depending on the connection type. These calculations in Table 2-10 also show that North Bend served 3,908 ERUs in 2019. The per-ERU water use from 2009 – 2019 was 158 gallons per day, and is shown in Table 2-9. Based on the metering and connection records provided, these calculations are correct.

Projected future demand for North Bend was estimated at 6,451 ERUs by 2040. At 158 gallons per day, the demand would be about 1,150 ac-ft/yr. The future demand projections were provided in Chapter 2 of the WSP, based on growth projections provided in Appendix F of the WSP.

Based on the information provided in the Water Rights Self-Assessment (Appendix E) and in Chapter 2 Appendix of the WSP, dated March 2020, annual capacity DOES NOT appear to be an issue. However, mitigation capacity is anticipated to be an issue, as stated in ADVISORY COMMENTS earlier in this letter.

** Distribution System Leakage and Water Conservation Policies **

North Bend’s water production and delivery records from the last 10 years indicate that more than 10% of water the city produces is lost to leakage, and more than 20% of this water was lost to leakage over the last 3 years. Per WAC 246-290-820, the City is required to develop and implement a water loss action control plan. This plan is provided in Chapter 5 of the WSP.
Ecology notes that compliance with WAC 246-290 is an explicit provision in permit G1-26617(A)P. Part 8 of WAC 246-290 pertains to how and when water systems develop water use efficiency programs. Ecology supports North Bend’s efforts to comply with state law and the provisions of its water rights.

**Service Area**

RCW 90.03.386(2) requires that water systems be in compliance with the terms of their WSP and that any alteration of the place of use not be inconsistent with any comprehensive plans or development regulations. An evaluation of any such change should be undertaken if a future expansion of North Bend’s water system service area is planned.

Sincerely,

Kellie Gillingham
Water Master
Water Resources Program

ecc: Richard Rodriguez, Department of Health
Russell L. Porter, PE, Gray and Osborne, Inc.
Ria Berns, Department of Ecology
July 20, 2020

Mayor Rob McFarland
City of North Bend
920 SE Cedar Falls Way
P.O. Box 896
North Bend, WA  98045

RE:  Information on the Status of the City of North Bend’s Water Right Permit and Sallal Water Association’s Water Right as a Source for Mitigation

Dear Mayor McFarland:

This letter responds to a question posed in your June 1, 2020 letter. In that letter, you sought clarification from the Department of Ecology (Ecology) regarding a sentence in a previous April 10, 2020 letter I sent, which characterized the provisions in G1-26617(A) as including, “the requirement to secure a secondary mitigation source through agreement with Sallal.”

Through this letter, Ecology is clarifying its interpretation of the provisions and requirements of Water Right Permit G1-26617(A) and its Report of Examination (ROE), as they relate to securing mitigation water from Sallal Water Association (Sallal). It is Ecology’s interpretation that securing a secondary mitigation source through agreement with Sallal is not a requirement of this permit. The City of North Bend’s permit requires that the City mitigate for its Centennial Well withdrawals when instream flows on the Snoqualmie River are not met. So long as the City continues to meet this mitigation requirement through its primary source at Hobo Springs, the City is in compliance with its permit. While Sallal wells are an authorized mitigation source, the Permit does not compel the City to reach agreement with Sallal, nor does it condition permit compliance on securing Sallal as a secondary mitigation source.

Ecology continues to be concerned about the City’s ability to meet growth demand without additional mitigation sources. Thus, we urge the City to proactively and aggressively seek new mitigation sources to meet the City’s near-term projected growth demands and to remain in compliance with the City’s water right permit G1-26617(A).
I look forward to ongoing discussions with you and City staff on any permit management questions. If you have any follow-up questions related to information shared in this letter, please contact me at ria.berns@ecy.wa.gov or by phone at (425) 495-3917.

Sincerely,

Ria Berns
Section Manager
Water Resources Program

ecc: Bob James, Department of Health, Office of Drinking Water
     Jae Hill, King County, Utilities Technical Review Committee
     Ted Stonebridge, Sallal Water Association
July 29, 2020

Ms. Kellie Gillingham
Water Resources Program
Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, Washington 98008-5452

SUBJECT: RESPONSES TO COMMENTS, WATER SYSTEM PLAN
CITY OF NORTH BEND, KING COUNTY, WASHINGTON
G&O #19473.00

Dear Ms. Gillingham:

Thank you for your comments regarding the City of North Bend (City) Water System Plan (WSP) provided via email on May 22, 2020. In order to more easily respond to the comments, we have placed the original comments in italics, followed by our responses below.

ADVISORY COMMENTS

Expected Future Mitigation Demand to Exceed Existing Mitigation Capacity

North Bend’s two water rights, the certificate for Mt. Si Springs (S1-00260C) and the permit for the Centennial Well (G1-26617(A)P), combined, have authorized instantaneous and annual quantities that are above the City’s current production, meaning the City seemingly has capacity for growth. This characterization does not wholly capture the actual limits of the City’s water rights, which are interruptible and tied to the availability of mitigation water. The City actively mitigates its withdrawals from the Centennial Well with water from a facility at Hobo Springs that is purchased from the City of Seattle. However, based on forecasts that Golder Associates produced for North Bend and discussed in the Executive Summary for the draft “City of North Bend Water Supply and Mitigation Forecast” (included in Appendix F of the WSP), it appears that North Bend could exceed its available mitigation capacity within the next 5 years.

This forecast highlights that North Bend needs to acquire additional sources of mitigation or modify current system management in order to continue to grow while
remaining compliant with permit G1-26617(A)P. Additionally, the Report of Examination (ROE) for water right permit G1-26617(A)P requires that North Bend reach an agreement with Sallal Water System to obtain water for backup/additional mitigation and install infrastructure to make that water available when required for mitigation. Until North Bend secures this secondary mitigation source, or an alternative secondary mitigation source, there is vulnerability for the City in its continued reliance on this permit. In the 13 years since the ROE was issued, North Bend and Sallal have not reached an agreement. At this time, North Bend has no other approved secondary mitigation sources. Ecology recognizes that North Bend intends to reach an agreement with Sallal within the next two years, as described in the WSP Executive summary, and this planned source of mitigation water is included in the WSP’s Capital Improvement Plan. While North Bend has continued to work towards developing a more resilient water system, including increased transparency and operational changes, Ecology emphasizes that this agreement, along with other potential sources of mitigation water, is essential for North Bend’s ability to accommodate near-term future growth.

If North Bend does not secure additional mitigation sources within the next five years, North Bend runs the risk of non-compliance with G1-26617(A)P and may exceed its capacity to serve future growth. To address these mitigation shortfalls, North Bend should take clear and measured steps in the short term to build mitigation capacity or plan to curtail growth.

The City shares Ecology’s concerns regarding possible mitigation shortfalls. The forecasts by Golder and Associates provided in Appendix F and the conclusion in Chapter 3 of the March 2020 Draft WSP both indicate that action must be taken to address both the City’s supply and demand for mitigation water. The City is committed to addressing this through three measures:

1. Control and lower distribution system leakage through targeted capital improvement projects that replace aging asbestos-concrete mains and other suspected leaking pipes. This will reduce the overall water production and the mitigation requirements associated with well withdrawal in the summer and fall.

2. Decrease the magnitude of maximum day water demand during periods of low mitigation capacity. The June 2020 adoption of City Ordinance 1723 and the Water Shortage Plan by the City Council gives the City the ability to impose and enforce conservation measures during times of water shortage. Three tiers have been identified based on the elevation of the masonry pool which is hydraulically connected to the City’s mitigation
source, Hobo Springs. The Ordinance and Water Shortage Plan can be found in Appendix R.

3. Increase and diversify the number of mitigation sources and overall capacity. The City has created a Mitigation Capacity Action Plan which will be executed either in tandem or in lieu of a wholesale water agreement with Sallal. While the City looks forward to continuing negotiations with Sallal on an acceptable water supply agreement, Ecology has confirmed by letter dated July 20, 2020:

> It is Ecology’s interpretation that securing a secondary mitigation source through agreement with Sallal is not a requirement of this permit [emphasis in original]. The City of North Bend’s permit requires that the City mitigate for its Centennial Well withdrawals when instream flows on the Snoqualmie River are not met. So long as the City continues to meet this mitigation requirement through its primary source at Hobo Springs, the City is in compliance with its permit. While Sallal wells are an authorized mitigation source, the Permit does not compel the City to reach agreement with Sallal, nor does it condition permit compliance on securing Sallal as a secondary mitigation source.

The action plan includes the following steps:

a. The Cascade Golf Course water mitigation system becomes operational in 2021. This project is listed in Chapter 7 of the WSP as Project MT-1. This project will add a second mitigation source, thereby increasing capacity and adding redundancy to the City’s mitigation system.

b. Hobo Springs Improvements will increase mitigation supply by 2022. This project is listed in Chapter 7 of the WSP as Project MT-2. A new catchment basin will capture excess water which currently flows over the existing weir. This project will increase the available mitigation capacity at Hobo Springs.

c. The City will continue discussions Seattle Public Utilities (SPU) regarding the purchase of additional mitigation water.
d. Further assessment and refining of the Mitigation Reservoir. This project is listed in Chapter 7 of the WSP as Project MT-5. The City has already funded feasibility studies which have assessed prospective sites for a large 10 MG mitigation reservoir. The City will continue these assessments and refining design. The WSP projects possible construction around 2031.

Missing and Incorrect Information on Water Right Self-Assessment

In the water rights documentation presented on the Water Rights Self-Assessment (Appendix E), Ecology identified the following missing or incorrect information:

1. North Bend does not identify the limitations of S1-00620C and G1-26617(A)P, as required by the form, although these are identified elsewhere in the WSP. Specifically:
   
   A. S1-00620C is subject to a 3.0 cubic-feet-per-second (CFS) bypass flow at the diversion, to be maintained at all times, as described in the ROE.
   
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2. The Water Right Permit and Certificate numbers appear to be switched with Water Facilities Inventory source numbers.

3. S1-28050 is not a change application. S1-28050 is an application for a new water right.

These corrections have been made.

Cascade Golf Course Water Right

If North Bend does not secure additional mitigation sources within the next five years, North Bend runs the risk of non-compliance with G1-26617(A)P and may exceed its capacity to serve future growth. To address these mitigation shortfalls, North Bend should take clear and measured steps in the short term to build mitigation capacity or plan to curtail growth.

Additionally, Ecology observed an abandoned well on the site of the former Cascade Golf Course during a site visit in 2018, before North Bend purchased the golf course and
appurtenant water right, G1-00142C. Ecology’s well log records do not indicate that this well was ever decommissioned, as required by WAC 173-160-381. If this well is not yet decommissioned, the work should be completed in a timely manner and Ecology will require decommissioning as part of any authorization to change G1-00142C.

The Mitigation Capacity Action Plan described above will ensure that mitigation capacity is increased in the near term.

The investigation and decommissioning (if necessary) of the abandoned well has been added to CIP Project MT-1 on page 7-3.

Water Shortage Response Plan

The city needs to complete its water shortage response plan, as required by WAC 246-290-420. Ecology notes that compliance with WAC 246-290 is an explicit provision in permit G1-26617(A)P. The need for this plan is discussed in Chapters 3 and 6, but a plan is not presented in the WSP. The documents provided in Appendix M do not include a plan to address mitigation capacity issues. While there is no formal decision Ecology can make regarding this specific plan, Ecology requests to review it prior to finalization and is willing to offer technical assistance.

The North Bend City Council passed Ordinance 1723 and adopted the Water Shortage Plan. Both the ordinance and the plan can be found in Appendix R of the WSP.

Typographic Error in Chapter 3 – Facility Analysis, Page 3-18

The Mt. Si Springs water right, S1-00620C, requires that a 3.0 CFS bypass flow must be maintained at all times, not 30 CFS as written in the WSP.

This typographical error has been corrected.

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<td>0</td>
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<td><strong>TOTALS:</strong></td>
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<td>4,896 GPM</td>
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** Fully utilizing the annual and instantaneous quantities associated with G1-26617(A)P requires mitigation from another source. Mitigation availability is a key limiting factor for this permit, in addition to the additive Qi and Qa listed on this permit.

Noted.

Future Demand

The WSP provides metering records from 2009 – 2019, connection records from 2009 – 2019, and calculations based on this information in Tables 2-1 through 2-10. As of 2019, North Bend served approximately 2,745 connections. Total production (from Table 3-10 of the WSP) was 613 acre-feet. The calculations provided in Table 2-10 indicate that each connection served between 0.8 and 2.9 equivalent residential units or ERUs, depending on the connection type. These calculations in Table 2-10 also show that North Bend served 3,908 ERUs in 2019. The per-ERU water use from 2009 – 2019 was 158 gallons per day, and is shown in Table 2-9. Based on the metering and connection records provided, these calculations are correct.

Projected future demand for North Bend was estimated at 6,451 ERUs by 2040. At 158 gallons per day, the demand would be about 1,150 ac-fl/yr. The future demand projections were provided in Chapter 2 of the WSP, based on growth projections provided in Appendix F of the WSP.

Based on the information provided in the Water Rights Self-Assessment (Appendix E) and in Chapter 2 Appendix of the WSP, dated March 2020, annual capacity DOES NOT
appear to be an issue. However, mitigation capacity is anticipated to be an issue, as stated in ADVISORY COMMENTS earlier in this letter.

Noted.

**Distribution System Leakage and Water Conservation Policies**

*North Bend’s water production and delivery records from the last 10 years indicate that more than 10% of water the city produces is lost to leakage, and more than 20% of this water was lost to leakage over the last 3 years. Per WAC 246-290-820, the City is required to develop and implement a water loss action control plan. This plan is provided in Chapter 5 of the WSP.*

Ecology notes that compliance with WAC 246-290 is an explicit provision in permit G1-26617(A)P. Part 8 of WAC 246-290 pertains to how and when water systems develop water use efficiency programs. Ecology supports North Bend’s efforts to comply with state law and the provisions of its water rights.

Noted.

**Service Area**

*RCW 90.03.386(2) requires that water systems be in compliance with the terms of their WSP and that any alteration of the place of use not be inconsistent with any comprehensive plans or development regulations. An evaluation of any such change should be undertaken if a future expansion of North Bend’s water system service area is planned.*

Noted.

Thank you once again for your review comments. Based on your comments and the comments of other agencies, we have incorporated your comments into the final WSP. Upon your approval of the WSP, we will provide you with a final WSP in hard copy and
electronically for your files. Please contact me if you have any additional questions or concerns.

Sincerely,

GRAY & OSBORNE, INC.

Russell Porter, P.E.

cc: Mr. Mark Rigos, P.E., Public Works Director, City of North Bend
    Mr. Don DeBerg, P.E., City Engineer, City of North Bend
    Mr. Kraig Kramer, Certified Operator, City of North Bend
    Ms. Ria Berns, Water Resources Manager, Washington State Dept. of Ecology
    Mr. Richard Rodriguez, Regional Planner, Washington State Dept. of Health
    Mr. Jae Hill, Principal Planner, King County Utilities Technical Review Committee
North Bend Water System Plan Review – Initial Comments

June 30, 2020
Mark Rigos
Public Works Director, City of North Bend

On March 17, 2020, the City of North Bend submitted their draft Water System Plan for review by the King County Utilities Technical Review Committee (UTRC). On June 17, 2020, the UTRC held an open public meeting and deliberated the plan content. Due to the volume of comments and materials received by both the public and the applicants—including during the meeting—the UTRC decided:

• to issue a preliminary comment letter based on the initial submittal materials,
• to close the public comment period on June 24,
• to subsequently review the new materials, and
• to deliberate at a later meeting, and issue a second comment letter, if necessary, on all new submitted items.

This letter is that first comment letter, and a second letter may be forthcoming in July. To obtain the UTRC’s “recommendation of adequacy” to the King County Council—the final approving authority of Comprehensive Water and Sewer System Plans, per King County Code 13.24—the Committee respectfully requests that you satisfactorily address the following items:

CONTENT EDITS

1. Appendix I (Water Reclamation Evaluation Checklist) claims that "any use of reclaimed water for purposes other than river augmentation would negatively impact the city’s ability to provide mitigation water.” Has the district considered the use of reclaimed water—for irrigation customers, for example—to reduce demands on the Centennial production well and thereby reduce the need for mitigation water?

2. The Plan does not address salmon recovery impacts. Please address how pumping regimes, mitigation flows, and other operations beneficially or negatively impact salmon recovery.

3. The Plan states that the City only has a duty-to-serve within 200 feet of existing mains. Please describe the process for coordinating water supply (i.e., wells) with applicants who will not be served if outside of this radius. This could include a requirement for a certificate of future connection or other measures.

4. The City has an expired franchise with King County that lapsed on 11/28/98. Please indicate that North Bend will be applying for a franchise, and any general expected terms.

5. Revisions to the Plan shall include details on successful compliance with Ecology’s conditions of approval for the Centennial Well water right, and addressing Ecology’s concerns in their May 22,
2020 letter. If alternative mitigation sources are preferred over the use of Sallal as a source, please indicate an action plan, as opposed to simply a list of potential sources.

**TYPOGRAPHICAL EDITS**

1. Middle of page 1-4, typo reads "agreement with Salla" instead of "Sallal"
2. Table 2-9 has ERU in GPM instead of GPD.

The UTRC thanks you for the opportunity to review and comment.

Regards,

Jae Hill, AICP, CFM
Principal Planner | Chair of the Utilities Technical Review Committee
King County Dept. of Local Services
jhill@kingcounty.gov
o: 206-263-5690
July 29, 2020

Mr. Jae Hill  
Principal Planner  
Utilities Technical Review Committee  
King County Department of Local Services – Permitting  
35030 SE Douglas Street, Suite 210  
Snoqualmie, Washington 98065-9266

SUBJECT: RESPONSES TO COMMENTS, WATER SYSTEM PLAN  
CITY OF NORTH BEND, KING COUNTY, WASHINGTON  
G&O #19473.00

Dear Mr. Hill:

Thank you for your comments regarding the City of North Bend (City) Water System Plan (WSP) provided via letter on June 30, 2020. In order to more easily respond to the comments, we have placed the original comments in italics, followed by our responses below.

CONTENT EDITS

1. Appendix I (Water Reclamation Evaluation Checklist) claims that “any use of reclaimed water for purposes other than river augmentation would negatively impact the city’s ability to provide mitigation water.” Has the district considered the use of reclaimed water—for irrigation customers, for example—to reduce demands on the Centennial production well and thereby reduce the need for mitigation water?

The City receives credit per the ROE for mitigation resulting from wastewater treatment plant (WWTP) effluent flows to the Snoqualmie River. Though the use of reclaimed water as irrigation water may result in a slight decrease in water demand, it would decrease effluent leaving the WWTP and directly increase the mitigation water required, thereby increasing strain on the City’s mitigation capacity.
2. *The Plan does not address salmon recovery impacts. Please address how pumping regimes, mitigation flows, and other operations beneficially or negatively impact salmon recovery.*

The City’s Centennial Well source is the only municipal water source in the Upper Snoqualmie Basin that fully mitigates impacts to instream flows whenever the minimum instream flows set by Department of Ecology regulations are not achieved. The operation of this source therefore benefits salmon recovery by providing a fully mitigated source of supply in place of other available water sources that are not mitigated and would have impacts on water quantity and temperature when utilized during low-flow periods.

Additionally, the mitigation water, which coming from Hobo Springs, is both high quality (having been filtered through the hillside) and lower temperature. Both characteristics are beneficial to salmon.

3. *The Plan states that the City only has a duty-to-serve within 200 feet of existing mains. Please describe the process for coordinating water supply (i.e., wells) with applicants who will not be served if outside of this radius. This could include a requirement for a certificate of future connection or other measures.*

If a user is more than 200 feet away from an existing water main, the City issues a Water Availability Certificate allowing a private exempt well.

4. *The City has an expired franchise with King County that lapsed on 11/28/98. Please indicate that North Bend will be applying for a franchise, and any general expected terms.*

The City intends to pursue reactivation of the Franchise Agreement.

5. *Revisions to the Plan shall include details on successful compliance with Ecology’s conditions of approval for the Centennial Well water right, and addressing Ecology’s concerns in their May 22, 2020 letter. If alternative mitigation sources are preferred over the use of Sallal as a source, please indicate an action plan, as opposed to simply a list of potential sources.*

Ecology’s comments provided in the letter dated May 22, 2020, have been addressed. The response letter can be found in Appendix U. At this point, alternative mitigation sources are being pursued in lieu of or to
supplement a potential wholesale agreement with Sallal. The following Action Plan is proposed:

a. The Cascade Golf Course water mitigation system becomes operational in 2021. This project is listed in Chapter 7 of the WSP as Project MT-1. This project will add a second mitigation source, thereby increasing capacity and adding redundancy to the City’s mitigation system.

b. Hobo Springs Improvements will increase mitigation supply by 2022. This project is listed in Chapter 7 of the WSP as Project MT-2. A new catchment basin will capture excess water which currently flows over the existing weir. This project will increase the available mitigation capacity at Hobo Springs.

c. The City will begin discussions Seattle Public Utilities (SPU) regarding the purchase of additional mitigation water.

d. Further assessment and refining of the mitigation reservoir. This project is listed in Chapter 7 of the WSP as Project MT-5. The City has already funded feasibility studies which have assessed prospective sites for a large 10 MG mitigation reservoir. The City will continue these assessments and refining design, but such a project will likely be largely grant funded. The WSP projects possible construction around 2031.

**TYPOGRAPHICAL EDITS**

1. *Middle of page 1-4, typo reads “agreement with Salla” instead of “Sallal.”*

2. *Table 2-9 has ERU in GPM instead of GPD.*

These typographical errors have been corrected.

Thank you once again for your review comments. Based on your comments and the comments of other agencies, we have incorporated your comments into the final WSP. Upon your approval of the WSP, we will provide you with a final WSP in hard copy and
electronically for your files. Please contact me if you have any additional questions or concerns.

Sincerely,

GRAY & OSBORNE, INC.

Russell Porter, P.E.

RLP.hh

cc: Mr. Mark Rigos, P.E., Public Works Director, City of North Bend
    Mr. Don DeBerg, P.E., City Engineer, City of North Bend
    Mr. Kraig Kramer, Certified Operator, City of North Bend
    Ms. Ria Berns, Water Resources Manager, Washington State Dept. of Ecology
    Mr. Richard Rodriguez, Regional Planner, Washington State Dept. of Health
August 13, 2020

Mr. Jae Hill  
Principal Planner  
Utilities Technical Review Committee  
King County Department of Local Services – Permitting  
35030 SE Douglas Street, Suite 210  
Snoqualmie, Washington 98065-9266

SUBJECT: RESPONSES TO COMMENTS, WATER SYSTEM PLAN  
CITY OF NORTH BEND, KING COUNTY, WASHINGTON  
G&O #19473.00

Dear Mr. Hill:

Thank you for your comments regarding the City of North Bend (City) Water System Plan (WSP) provided via letter on August 3, 2020. In order to more easily respond to the comments, we have placed the original comments in italics followed by our responses below.

CONTENT EDITs

1. Wellhead Protection Plan

   a. Chapter 3.0 “Wellhead Protection Area Delineation” mentions the City’s zoning and land use controls, but most of the CARA is in the unincorporated county. Please address any desired source protection strategies specifically related to land use controls in the unincorporated area CARAs, if any.

      Golder Response: Section 3.2 has been edited to state that, where possible, similar source protection strategies will be utilized for portions of the WHPAs that are in unincorporated King County.

   b. Chapter 6.0 “Wellhead Protection Measures” only references North Bend City Codes with regards to the CARAs. Please provide
references to King County Code Title 21A et seq. if you’re interested in CARA protections outside of City Limits.

**Golder Response:** The text was revised to include reference to the King County code.

c. *On Figure 6 (pg. 43) please indicate the Urban Growth Area boundary on the map.*

**Golder Response:** The figure has been revised.

d. *On Figure 8 (pg. 45) please display all of the zoning in the unincorporated county, or explain why such zoning districts are not included. Please note that RA-5 and RA-10 zoning districts have primarily residential uses, but may contain businesses and other facilities which may be impacted by CARA regulation.*

**Golder Response:** The figure has been revised.

2. *The UTRC has serious concerns about the Plan’s duration and—in light of the recent appeal of the Fuget Western property—the combined impacts on water supply in the area. Given the five-year upper bound on available mitigation water for the Centennial Well in the Golder Report, and given the lack of agreement with Sallal for mitigation water provision as detailed in Chapter 7 et seq., the UTRC cannot recommend approval of a plan with a greater duration than five years at this time. You may thusly choose one of three options:*

   a. Request approval of an “interim plan” with a five-year approval horizon and a commitment to have a new plan approved within that five-year timeframe; or,

   b. Provide a detailed capital plan for the provision of mitigation water from sources other than Sallal with a minimum of ten years of suitable supply; or

   c. Provide an executed agreement with Sallal indicating suitable mitigation supply for the ten-year duration.

The City has selected Option A and seeks 5-year approval of the 2020 Water System Plan.
Thank you once again for your review comments. Based on your comments and the comments of other agencies, we have incorporated your comments into the final WSP. Upon your approval of the WSP, we will provide you with a final WSP in hard copy and electronically for your files. Please contact me if you have any additional questions or concerns.

Sincerely,

GRAY & OSBORNE, INC.

[Signature]
Russell Porter, P.E.

RLP/hh

cc: Mr. Mark Rigos, P.E., Public Works Director, City of North Bend
    Mr. Don DeBerg, P.E., City Engineer, City of North Bend
    Mr. Kraig Kramer, Certified Operator, City of North Bend
    Ms. Ria Berns, Water Resources Manager, Washington State Dept. of Ecology
    Mr. Richard Rodriguez, Regional Planner, Washington State Dept. of Health
August 13, 2020

Mr. Richard Rodriguez
Regional Planner
Washington State Department of Health
Northwest Drinking Water Operations
20425 72nd Avenue South, Building 2, Suite 310
Kent, Washington 98032-2358

SUBJECT: RESPONSES TO COMMENTS, WATER SYSTEM PLAN
CITY OF NORTH BEND, KING COUNTY, WASHINGTON
G&O #19473.00

Dear Mr. Rodriguez:

Thank you for your comments regarding the City of North Bend (City) Water System Plan (WSP) provided via letter on June 11, 2020. In order to more easily respond to the comments, we have placed the original comments in italics followed by our responses below.

DESCRIPTION OF WATER SYSTEM

1. **Provide a determination of local government consistency from the City of North Bend’s Planning Department.**

   The Consistency Statement from the City of North Bend’s Planning Department can be found in Appendix D.

2. **King County Utilities Technical Review Committee will review your WSP. Please respond to their issues. Adequate responses to their issues will be necessary in order to receive a WSP Adoption Ordinance from King County.**

   Responses to the King County Utilities Technical Review Committee’s (UTRC’s) comments provided on June 30 and August 13, 2020, can be found in Appendix U. The City has opted to receive 5-year approval from the UTRC.
3. **Is the Cedar River Partners’ property in the City’s Retail Service Area and/or its Wholesale Service Area? Are the water demands for this project included in the City’s demand forecast? Is Sallal’s service area included in the City’s Wholesale Service Area?**

The Cedar River Partners property would be in the City’s Retail Service Area (RSA). Water demands for this development were included in the projected demand forecasts.

Sallal’s service area is included in the City’s Wholesale Service Area (WSA), as shown on Figure 1-5, pending the ratification of the Wholesale Water Agreement. The intent would be to only supply, at most, the water demand for the portion of the Sallal RSA that falls within the City’s UGA.

**BASIC PLANNING DATA**

4. **Consider including in this chapter or in an appendix, a description of and graphics showing the historical seasonal variation in mitigation volume required.**

Graphics and a summary table of historical mitigation and production volumes have been added to Appendix E. These show seasonal variations for 2009 through 2017.

5. **The WSP states that enhanced efforts are needed to address summer peak demands. These would include 1) reduction of summer MDD, 2) reduction in distribution system leakage, 3) the agreement with Sallal, and 4) additional mitigation sources such as Golf Course Well water right. If these efforts do not occur, at what point would the City be prepared to impose a moratorium?**

In the Water Supply and Mitigation Forecast Report dated October 2019, the City’s water hydrologist (Golder) calculated the impacts of implementing a water conservation ordinance and reducing DSL (Golder Report). Accordingly, by Resolution 1940, the North Bend City Council directed staff to expeditiously implement a significant DSL program and by Ordinance 1723, the North Bend City Council adopted a water conservation ordinance (WCO). The Golder Report concluded that reducing DSL alone would extend available beneficial use and mitigation water supply until 2054. Separately, the Golder Report concluded that by adoption of the WCO and implementation of the conservation measures
contained therein, the City has available beneficial and mitigation water until 2040. The forgoing operational and management changes extend water availability without either the Sallal agreement or the Cascade water. Once our water hydrological experts opine that the City does not have sufficient water, the City would be prepared to impose a moratorium. However, that date is not in the near term.

SYSTEM ANALYSIS

6. *I believe the 2009 version of our water system design manual said to design a pump station to provide fire flow plus maximum day demand assuming the largest routinely used pump was out of service. The update in our water system design manual reflects the requirement for system reliability per Chapter 246-293 of the WAC and does not include the word “routinely.” This means that in a coordinated water system plan area, the booster pump station serving a closed system must be able to provide fire flow at maximum day demand with the largest pump out of service. In this case, the 2,650 gpm pump of the 710 booster pump station. Please show the system meets this requirement or provide suggested system improvements with updated capital improvement schedule.*

The word “routinely” has been removed from page 3-22 and Table 3-14. Pumping capacities in Table 3-14 have been updated as well. The 710 Booster Station serves an open zone while the 780 Booster Station serves a closed zone. However, fire flow for both the 710 and 780 Zones is supplied by the Forster Woods Reservoir through the 710 Zone piping and hydrants. Page 3-22 of the WSP states that the high-flow pump in the 710 Booster Station exists to provide redundancy.

7. *Table 3-11 Source Pumping Capacity Analysis uses the Mt. Si Springs pump capacity to fill the clearwell (2,000 gpm) and not the pump capacity to the system (1,250 gpm as noted on pages 1-7 and 1-9). Source capacity is also used to determine the time it takes to replenish fire suppression storage (refer to Tables 3-1 and 3-2). Does the system meet the city and Water System Design Manual source requirements and resiliency recommendations where 1,250 gpm is used for Mt. Si Springs source? Please explain why it makes sense to use the pump capacity to the clearwell and not the system.*

A recent pump test was performed at the Mount Si Springs source on July 13, 2020, in order to confirm transmission capacity limitations. The
pump capacity limit was determined to be 1,500 gpm. Table 3-11 has been updated to reflect this capacity limitation. The transmission mains which contribute to the limitation are addressed by upsizing the existing water main in CIP Projects D-18, D-10, and D-21 which are detailed in Chapter 7.

The system does still meet the Water System Design Manual’s source resiliency with the four reliability recommendations in Section 3.10.5 as outlined below:

1. The City has two sources available.

2. The City’s sources can replenish fire suppression storage within 72 hours, allowing for 24 hours pumping, while concurrently supplying MDD to the system. In fact, the Centennial Well is capable of doing so on its own until at least the 10-year planning horizon.

3. Sources can meet MDD by pumping for 20 hours or less. Table 3-12 indicated that MDD can be met using only the Centennial Well.

4. If the Centennial Well is out of the service, Mount Si Springs is capable of meeting ADD. If Mount Si Springs is out of service, the Centennial Well is capable of meeting ADD. It is very unlikely both sources would be inoperable at the same time.

8. Chapter 4 Hydraulic Modeling. The hydraulic model should be re-calibrated to verify that the model still accurately reflects the distribution system. Inadvertent valve closures, PRV station changes and pump station operating characteristic can all change. As you are aware the department is allowing ten-year approval periods for qualifying water system plans, this could mean that the hydraulic model will not be verified for nearly 20 years. Provide a schedule for verifying the model calibration.

The hydraulic model was recalibrated using hydrant testing data from July 13, 2020. The results and discussion of the recalibration can be found on pages 4-3 through 4-5.
WATER USE EFFICIENCY/WATER RIGHTS

9. Respond to the issues contained in Department of Ecology’s letter dated May 22, 2020 and incorporate those into your WSP.

The response letter to the Department of Ecology comments dated July 29, 2020, addresses the issues and concerns raised in the letter dated May 22 and highlights the changes made to the WSP. The response letter can be found in Appendix U.

10. Please provide documentation of the public meeting held to discuss the 2020-2026 Water Use Efficiency Goals for the City.

The public hearing for Water Use Efficiency Goals will be held on September 1, 2020. Documentation of the hearing will be provided and added to Appendix I.

11. Has the North Bend Operation and Monitoring Plan referenced in the Centennial well permit documentation been updated since 2007? If not, what is the intention regarding updating this plan? Please include the North Bend Operation and Monitoring Plan (Golder, 2007c), its update, or both.

The City has not published an updated Operation and Monitoring Plan since the 2007 Golder document. An effort was made to update this plan in 2014; however, that iteration of the document was never finished. The City is aware it needs to update the plan based on the ROE, the latest Wellhead Protection Plan, and after the changes to the Cascade water right are complete. As a result, the City intends to submit an updated document soon after the changes to the Cascade water right are complete. The 2007 plan can now be found in Appendix Q.

SOURCE PROTECTION

12. A few sources of potential contamination do not appear to be included in the EDR & windshield survey. Please consider other land uses like
cemeteries, farms, parks, school athletic fields, which can be sources of contamination from chemical application.

These are unlikely to be significant sources of potential contamination, but some discussion can be added to the report, particularly for Well NB-1 in Torgeson Park. (Response by Golder Associates)

13. *It is unusual to combine CFR & modelled delineation methods, please elucidate 1) what the model uncertainties were that are addressed by including the CFR and 2) why the City wants to take an overly conservative approach?*

The approach was selected to be conservative and protective of the resource. Because the groundwater source is shallow and the aquifer is unconfined and highly transmissive, the potential for contamination is high. The groundwater model produced capture zones that extend upgradient and become more elongated with distance but are relatively narrow near the wellheads. The CFR method was added to the modeled delineations for consistency with past methods and to provide additional protections given the nature of the aquifer, not to address any specific model uncertainties beyond those that are intrinsic to numerical groundwater modeling in general. (Response by Golder Associates)

14. *Note that the area identified as “buffer” for the spring source appears to be more appropriately identified as the Critical Aquifer Recharge Area (CARA). Depending on how local codes are written, the “buffer” delineation may not be considered a part of the wellhead protection area (WHPA) or provided the appropriate protections. The spring source is located outside of City limits, the plan should include a discussion of King County’s CARA regulation and any coordination the City has done with the County, Department of Natural Resources and the US Forest Service relating to the protection of the spring source.*

The Mount Si WPHA was modified such that the estimated zone of contribution is part of the WHPA and no longer labelled a “Buffer Zone.” Figure 7 was modified. (Response by Golder Associates)
15. The adoption of the WHPA areas should be done as a part of the adoption of the water system plan and not be a recommendation. The recommendations about updating the CARA are appropriate.

The recommendation to adopt the WHPAs in Section 6.3 was removed and the text was modified as follows “The WHPAs presented in this report should be incorporated into the City’s Water System Plan.”

16. The Wellhead Protection Plan recommends that the City adopt requirements for secondary containment within WHPA time of travel zones. Does the City intend to implement this and other recommendations in section 6.3? Please discuss.

The City intends to adopt all recommendations over the next 10 years and will work on creating a schedule to do so.

WATER QUALITY

17. Please provide the Stage 2 Disinfection Byproduct Monitoring Plan.

The City’s Stage 2 Disinfection Byproduct Monitoring Plan can be found in Appendix H and is also referenced on page 3-16.

18. Regarding the Coliform Monitoring Plan (CMP), we have the following comments.

a. Please provide standard operating procedures for coliform routine and repeat sampling in the appendix with the CMP.

Standard operating procedures have been added and can be found in Section F of the Coliform Monitoring Plan (CMP).

b. In Section E, as part of the routine sample schedule, this indicates that X14 (S01 Mt Si Spring) and S17 (S02, Centennial Well) are used as routine sample sites. Only distribution sites are appropriate as routine coliform sample sites. Please update or clarify. The recent coliform sample locations in our database correctly show that the Spring or well are not used as routine sites.

Sources have been removed from the routine sample list. They remain on the schedule to indicate that they are tested quarterly;
however, they do not count toward the seven required monthly samples.

c. Consider adding a coliform sample site in the 780 pressure zone. It appears that there is not a routine sample site in this pressure zone.

Routine Sample Site X.16 has been added and lies in the 780 Pressure Zone.

d. Consider sampling more often each month to keep monitoring more continuous. For example, you may want to sample three times per month (two samples per week for three weeks) or two times per month (three samples each week).

More frequent testing will be taken into consideration.

e. The City's Water Facilities Inventory (WFI) includes 239 non-residential connections (industrial, institutions, commercial) and four recreational services. However, no non-residential population is listed on the WFI. Some students, employees, visitors or other users of these non-residential connections may already be counted as residents of North Bend. While cautioning not to double count, please do provide estimates of consumers who come from outside the North Bend area in each of the WFI non-residential population sections. This additional population may or may not affect the number of routine coliform samples required each month.

The service area is projected to have a population large enough to warrant seven routine monthly tests by 2020. As a result, the CMP has now been updated to include seven routine samples.

f. Please consider when the Sallal emergency intertie may be in use. If North Bend incurs a positive bacteriological sample in its distribution system and the Sallal intertie is in use, North Bend
must contact Sallal for Sallal to sample any of their groundwater wells that were in use.

The standard operating procedures (Section F) and the E. coli Response Plan of the CMP now give clear instructions for when positive tests coincide with intertie use.

OPERATION AND MAINTENANCE

19. Has the City completed the "Water Shortage Response Plan"? We typically see this plan as part of the emergency response plan. Given the history of the City not meeting the system demand (to include mitigation demand), planning for water shortage seems especially important. This response plan should identify the drought of record and what measures the City and community will execute to minimize demand.

The City's Water Shortage Plan has been completed and can be found in Appendix R.

20. Please add to the record keeping section of this chapter, the water main distribution system project construction completion reports. Please discuss the City's customer complaint program.

Construction completion reports have been added to the record keeping section on page 6-21 and a discussion of the City's customer complaint program has been added to page 6-20.

21. Consider updating the cross-connection control (CCC) program manual. At a minimum, add a revision date to the CCC manual.

   a. Page 4 of the CCC manual refers to the authority given by Municipal Code 13.28. Codification of Ordinance No. 391 was updated from 13.38 to 13.16.

   b. The CCC program I manual must include procedures for responding to backflow incidents.

   c. Reference to AWWA PNWS CCC manual is great. Consider adding Table 9 hazards from WAC 246-290-490 to highlight the minimum required protection for high hazard connections. For
example, wastewater treatment plants require RPBA and air gap. This is not a recommendation as the AWWA reference suggests.

The City will commit to updating its Cross-Connection Control Program Manual by June 2021.

DISTRIBUTION FACILITIES DESIGN AND CONSTRUCTION STANDARDS

22. A complete up-to-date set of water distribution standard details and specifications must be submitted and reviewed if seeking project submittal exception to DOH for distribution main projects under WAC 246-290-125(2). Appendix K, Construction Standards, Section 6 WATER, 6.01 General Requirements refers to the standards applying within city limits. The city must provide construction standards for the city water system, both in and out of city limits, to meet the criteria for the submittal exception. Please make it clear that this set of water distribution standard details and specifications applies to projects inside and outside of city limits, clearly describe identify where these deviate if needed, or provide a set for projects outside of city limits.

Section 6.01 A of the City’s Public Work’s Standards has been amended to read as follows:

“Although these standards are intended to apply to physical development within the City retail service area (both within City limits and in unincorporated King County), the Standards will not apply for all situations.”

23. The Standard Detail No. W-16 Air Vacuum Release Valve Assembly shows a drilled hole to drain the vent line. The Department considers this a potential cross-connection. Think about eliminating the drilled hole from the air vacuum release valve design.

The pipe length leading to the cap and drilled hole have been eliminated. See Detail W-16.

24. Appendix K, Construction Standards, Section 6 Water, hydrostatic test refers to Standard Specification Section 7-09.3(23). Is this a reference to
WSDOT standard specification section 7-09.3(23)? Please clarify what this refers to.

This is a reference to the WSDOT Standard Specification 7-09.3(23). The text on page 6-29 of the Public Works Standards has been clarified.

IMPROVEMENT PLAN

25. Has the City implemented an asset management program, which includes a remaining useful life assessment of major water system facilities? Please note that systems with an asset management program are awarded more points in the ranking process for selecting State Revolving Fund projects to fund. The Capital Improvement Plan (CIP) is a good place to describe the City’s asset management program.

The City has not implemented a formalized Asset Management Program. In recent years, such a program has been evaluated. The City will consider the implementation of an Asset Management Program in the near future.

26. Please note that Sallal Well 2 now is required to provide disinfection treatment that achieves 4-log virus inactivation before the first customer. They installed 300-lineal feet of main to meet this requirement. Confirm that the MT-4 Sallal Mitigation Intertie project can still be constructed as described in this plan or update the chapter.

Yes, the project costs include running 400 feet of new waterline connecting the existing intertie to Sallal’s Well 2.

27. As mentioned in the plan, the system has considerable distribution system leak rate and the existing system does not meet minimum fireflow requirements. Some project to address critical fire flow deficiencies not scheduled for completion during this planning period. For example, project D-6 to address inadequate fire flow at the elementary school (400 East 3rd) Node J-58 of the hydraulic analysis (refer to Tables 4-8, 4-10, and 7-2). How was the ranking or prioritization of main replacement projects conducted (material type, age, frequency of leaks, fire flow requirements for example)?

See the discussion following Comment 29.
28. *Given the limitations in supply and considerable distribution system leak rate of more than 20% throughout most of the last planning period, consider a more aggressive main replacement schedule.*

See the discussion following Comment 29.

29. *We notice that the Mitigation Reservoir, Project reference MT5 is not included in the 10 year CIP schedule. Please explain.*

Three major priorities of the City’s CIP schedule include: (1) upsizing pipes in order to improve fire flow, (2) replacing AC piping in order to address high DSL, and (3) increasing the City’s mitigation capacities through various infrastructure projects. The CIP schedule in the draft WSP was reached after many iterations of balancing these three priorities along with other system maintenance projects and available funding. As discussed in the financial chapter, the City plans to increase revenue by increasing rates by 6 percent in 2021, 2024, and 2027 and by 3 percent all other years.

In response to Comment 27, in an effort to tackle DSL and fire flow simultaneously, fire flow projects were given priority if the pipe being replaced was made of AC. This is why Project D-6 had been pushed back to 2031. However, due to the proximity of the elementary school, Project D-6 has been reprioritized and is now scheduled to occur in 2027.

In response to Comment 28, the AC main replacement program is meant to augment the AC main replacement which will occur in tandem with the previously described fire flow improvement projects. Additionally, 2,750 linear feet of AC main is scheduled to be replaced as part of Project D-21 in 2025 and 2026. The City would have a more aggressive AC replacement schedule; however, the overall CIP schedule has prioritization and funding restraints described above. The City will commit to using the AC main replacement program to coordinate with planned transportation and sewer projects in order to accelerate and more efficiently replace these AC mains.

In response to Comment 29, the Mitigation Reservoir (Project MT-5) is not included in the 10-year planning period for two reasons. The first is cost, as the preliminary construction cost of $12 million is too high to include in the 10-year schedule. The City does still want to show that work has been put toward the feasibility of this project and to keep it in
the 10- to 20-year planning horizon. Second, the City has given high priority to three other mitigation projects all occurring between 2020 and 2025 which will increase mitigation capacity.

FINANCIAL PLANNING

No comments.

OTHER DOCUMENTATION

30. The water system must meet the consumer input process outlined in WAC 246-290-100(8). Please include documentation of a consumer meeting discussing the WSP, prior to DOH approval of the WSP.

Documentation of the consumer WSP meeting which occurred on August 4, 2020, can be found in Appendix I.

31. Prior to DOH approval, the City’s governing body must approve and adopt the WSP.

The WSP was adopted by the City Council on August 4, 2020. Documentation can be found in Appendix U.

32. Please provide copies of any comments made by adjacent purveyors or other interested parties, along with the City’s response to those comments.

Comments from adjacent purveyors can be found in Appendix U.

33. A signed SEPA Checklist was included with the draft WSP. Provide a SEPA threshold determination with the final WSP submittal.

A signed SEPA Checklist and SEPA Threshold Determination can be found in Appendix T.

34. Please have your engineers sign and date the PE stamp page for the final copy submitted to the Department.

The latest copy of the WSP has been stamped, signed, and dated.

Thank you, once again, for your review comments. Based on your comments and the comments of other agencies, we have incorporated your comments into the final WSP.
Mr. Richard Rodriguez  
August 13, 2020  
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Upon your approval of the WSP, we will provide you with a final WSP in hard copy and electronically for your files. Please contact me if you have any additional questions or concerns.

Sincerely,

GRAY & OSBORNE, INC.

[Signature]

Russell Porter, P.E.

RLP/hh

cc:    Mr. Mark Rigos, P.E., Public Works Director, City of North Bend
Mr. Don DeBerg, P.E., City Engineer, City of North Bend
Mr. Kraig Kramer, Certified Operator, City of North Bend
Ms. Ria Berns, Water Resources Manager, Washington State Dept. of Ecology
Mr. Jae Hill, Principal Planner, King County Utilities Technical Review Committee