

Mt. View-Edgewood Water Company

Pierce County, Washington

Water System Plan



Photo by Luke Meyers

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ecnw ENGINEERING
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NORTHWEST

Mt. View-Edgewood Water Company

Pierce County

Washington

Water System Plan

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CHAPTER 1

DESCRIPTION OF WATER SYSTEM

1.1 INTRODUCTION

The objective of this Chapter is to present background information for the update of the Mt. View-Edgewood Water Company's (Water Company) Water System Plan (Plan). The Plan will assess the current and future capabilities of the Water Company's water system, recommend needed improvements to allow the system to provide water service throughout the 10 and 20-year planning periods, and meet the statutory requirements in Chapter 246-290-100 WAC, Chapter 246-293-250 WAC, and Chapter 246-295 WAC.

The Chapter presents information on ownership and management, system background, geography and geology, existing system facilities inventory, related planning documents, zoning and land use, service area policies, and conditions of service.

1.2 OWNERSHIP AND MANAGEMENT

The water system officially operates under the name of the Mt. View-Edgewood Water Company (Water Company). The Water Company owns a Group A Community water system that provides service to an area comprising approximately 80% of the land contained within the limits of the City of Edgewood. The area is located north of Puyallup and east of Milton as shown in Figure 1-1. The Washington State Department of Health (DOH) water system identification number is 568203. A copy of the Water Company's Water Facilities Inventory (WFI) form is included as Appendix A.

MANAGEMENT STRUCTURE AND DECISION-MAKING PROCEDURES

The Water Company is a privately owned non-profit corporation that is governed by an elected seven member Board of Directors. The Water Company has no capital stock but issues memberships, which entitles all members the same interest. A copy of the Water Company's by-laws is included in Appendix B. The Water Company's current mailing address is:

Mt. View-Edgewood Water Company
11610 - 32nd Street East
Edgewood, Washington 98372-2040

The location of the Water Company's service area relative to the neighboring communities is shown in Figure 1.1.

SYSTEM BACKGROUND

WATER SYSTEM HISTORY

The Water Company was incorporated in 1925 under the name North Hill Water Company. In 1930, after the first incorporation lapsed, the system was reincorporated as Mt. View-Edgewood Water Company. A copy of the Water Company's Articles of Incorporation is included in Appendix B. Originally, the DeChaux Road Springs, located on the valley floor east of Meridian Avenue, provided water for the system. However, due to the potential of contamination during heavy rains and stormwater runoff from the hillside to the north, wells were drilled and the DeChaux Road Springs are no longer used as a source of supply.

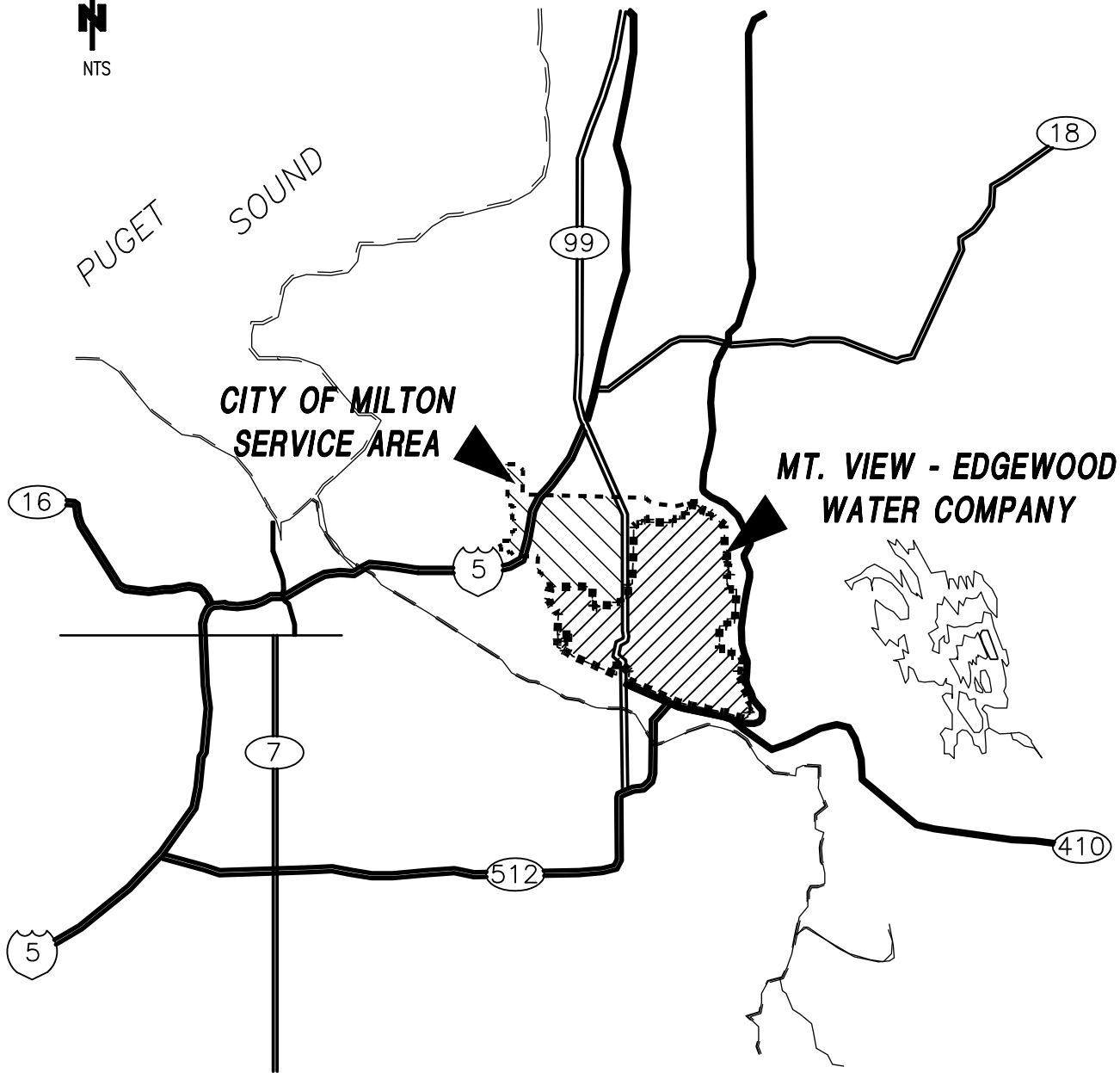
A total of eleven wells have been developed since the Company's original incorporation in 1925. The first well, Valley Well 1, was drilled in 1953 and was replaced in 1999 with the new- Well 1R on the same site adjacent to Well 8. The newest well, Well 11, was added in 2008. A description and summary of the existing Water Company's sources is included in the following section titled Existing System.

Storage consists of three above ground steel reservoirs. Two are located at 12224 - 48th Street East, and one is located at 614 - 105th Avenue East. The South East Reservoir was originally built in 1950 with a total storage volume of 303,808 gallons. In 1965, the reservoir was raised to its current height of 50 feet by lifting the old shell and welding an additional 16 feet of wall plate to the bottom. This project increased the capacity of the South East Reservoir to a total of 446,777 gallons. The South West Reservoir was built in 1971 on the same property and has a storage capacity of 734,500 gallons. An Upper Pressure Zone (615') was created in 2007 by the addition of a booster station at the south reservoir site. A parcel of land adjacent to the south reservoir site was purchased in 2007 for the potential to construct additional storage at some time in the future. Both reservoirs underwent a seismic retrofit in 2013. A third reservoir, commonly referred to as the North Reservoir, was constructed in 2001 and has a capacity of 1,000,000 gallons. The North Reservoir site includes a booster station operating with three centrifugal pumps.

The wells and reservoirs are controlled by a Supervisory Control and Data Acquisition (SCADA) system located at the office. Communication between the sites is accomplished by a radio system that the Water Company installed in 2009. In addition, the Water Company installed an Automated Meter Reading system in the same year. The system incorporates a vehicle mounted radio and laptop computer to gather the readings.

PROJECTS COMPLETED SINCE 2011 WATER SYSTEM PLAN

The Water Company's 2011 Water System Plan included a Capital Improvement Plan (CIP) for the 6 year and 20 year planning periods. Table 1.1 lists the completed CIP projects and the year the project was completed.



**MT. VIEW-EDGEWOOD
WATER COMPANY**

VICINITY MAP

FIGURE 1-1



**TABLE 1.1
Projects Completed Since 2011 Water System Plan**

2011 CIP Schedule Year	Project Description	Year Completed
2012	Seismic Retrofit of the South Reservoirs	2013
2012	Additional work during Seismic Retrofit of the South Reservoirs	2013
2012	Replace 1,650 lf of 5-inch main along 122 nd Ave. E., between Caldwell Road E. and 35 th St E., with 12-inch main.	2013
2013	Replace 1,000 lf of 6-inch main along 122 nd Ave E., between 35 th St. E. and 32 nd St. E., with 12-inch main.	2014
*	Facility Security Upgrades	2013
2014	Replace 1,680 lf of 6-inch main along 122 nd Ave. E., between 32 nd St. E. and 27 th St. E., with 12-inch main.	2015
*	Office Expansion and Remodel	2015
2015	Replace 730 lf of 6-inch main along 122 nd Ave. E., between 2520 – 122 nd Ave. E. and 24 th St. E. with 12-inch main.	2016
*	Shop Expansion and Remodel	2016
*	Purchase Hydrant and Valve Trailer	2016
*	North Reservoir Improvements	2016
Other CIP Projects		
2011-2017	Pipe replacement (\$50,000 per year)	Ongoing
2011-2017	Pipe looping (\$50,000 per year)	Ongoing
2011-2017	Service Trucks	Ongoing

* Projects completed but not identified in the 2011 Water System Plan

GEOGRAPHY AND GEOLOGY

The Water Company's service area is located on a glacial drift plain, which ranges in altitude from 50 to 500 feet, gradually rising from northwest to southeast. The larger drift plain extends from Thurston County north to southern British Columbia and is chiefly the product of glacial and glaciofluvial processes of the most recent glaciation. The geologic conditions occurring in the Water Company's service area are a direct reflection of the glacial activity. Exposed soils in the area consist of unconsolidated sediments (clay, silt, sand and gravel) deposited by the glaciers or by stream and rivers during interglacial periods. The soils in the area are classified as the Alderwood-Everett Association. The nearest consolidate rock or bedrock exposures are near the Puyallup River. Unconsolidated sediments also dominate the subsurface geology and the underlying groundwater basin extends to depths of over 2,000 feet in some locations.

Layer 1, Vashon Till

Layer 1 includes the Vashon till and the Vashon recessional deposits that overlie the till in some areas. The soils in the area are classified as the Alderwood-Everett Association. The layer is generally less than 150 feet thick and covers most of the upland. The till is a compact mixture of sand and gravel in a silt and clay matrix. The till has a low permeability, which retards ground water flow through it. The recessional deposits are typically coarse sand and gravel which supply perched water in some areas.

Layer 2, Vashon Advance Aquifer System

Across most of the Edgewood upland, Vashon Advance Outwash (Qva) deposits exist beneath the Vashon till. These deposits form the Vashon advance aquifer system, with distinct aquifers formed in the higher permeability portions of the unit. The most prominent aquifer is the Redondo-Milton Channel (RMC), which extends southward into the Water Company area. With the exception of Well 5, Layer 2 is the primary source for all of the Water Company's wells.

The outwash deposits which make up the unit are varied, ranging from silty sand to very clean, sandy gravel. The unit's thickness varies from absent to more than 200 feet at the thickest portion of the RMC.

Layer 3, Lower Confining Unit

Layer 3 is the lower confining unit for the Qva and RMC. It represents the aquitard between the Vashon advance aquifer system and the intermediate aquifer system. It is formed by a thick sequence of silt and clay-rich sediments, including the Lawton Clay member of the Vashon Drift and, in places, a till. At many locations, the unit is predominantly silt and clay; at other locations, it is primarily a mixture of sand and gravel with silt and clay included as a matrix. The unit varies widely in thickness. Where the RMC reaches its maximum thickness, Layer 3 is very thin to absent. Elsewhere, the layer can exceed 300 feet thick.

Layer 4, Intermediate Aquifer System

The intermediate aquifer system is a mixture of isolated aquifers and lower-permeability sediments laterally deposited (as opposed to deposition above or below the layer) between the aquifers. The most significant aquifer in the unit is the Mirror Lake Aquifer located in Federal Way. The aquifer system also includes smaller, isolated aquifers on both sides of the upland, collectively referred to as the Eastern Upland Aquifers and the North Shore Aquifers. The unit has upper and lower aquifer zones within it. This zonation is particularly evident in the Eastern Upland Aquifers.

Layer 5, Deep Confining Unit

Layer 5, (the deep confining unit) is the aquitard between the intermediate aquifer system and the deep aquifer system. It is the most substantial confining layer on the upland. It is found throughout the upland and is 200 to 400 feet thick at most locations. It consists largely of low permeability materials ranging from clay to silty, fine sand.

Layer 6, Deep Aquifer Unit

Little is known about the deep aquifer system, which contains the Federal Way Deep Aquifer (FWDA), but it is probable that the system is hydraulically connected to the deep aquifers in the Puyallup Valley. The unit includes the fine-to-medium sand deposits of the Federal Way Deep Aquifer, as well as lower permeability sediments found elsewhere on the upland where the FWDA is missing. The unit is probably also in direct continuity with the Puget Sound.

HYDROGEOLOGY AND WATER SUPPLY CHARACTERISTICS

Since our aquifer connects to the Puget Sound, and we withdraw water at the low point just prior to the aquifer connecting to the Sound, our members provide a benefit to instream flows. Most domestic use of water is for irrigation. By pumping water to the surface in our service area, the subsequent drainage of this water benefits the local ecology and instream flows of WRIA 10 and its salmon-bearing streams (essentially recycling the water). In most water service areas the opposite is true, especially if the water purveyor utilizes surface water for its source. The volume of water available to our members is only limited by our allocated water rights and our pumping, storage, and distribution system; not by our aquifer which stores more water than we require.

Our Water – Abundance

Due to the size and quality of the RMC aquifer, coupled with its location, our water quantity is not linked to the amount of snowpack in the Cascade Range. The RMC relies solely on rainfall for recharge. Each well level is monitored daily and the levels remain virtually unchanged from the day the well was drilled. The only scenario that would affect our water supply would be the complete absence of rainfall for 5 or more years. Unlike neighboring water purveyors, we continue to enjoy large quantities of water during drought years.

Our Water – Chemicals

Mt. View-Edgewood Water Company does not add any chemicals to our water. Our water is delivered to our customers without chlorine, fluoride, or any other chemicals. Since our water is

filtered slowly and naturally through glacial gravels deep beneath the surface, and the aquifer doesn't contain even naturally occurring elements that affect taste, acidity, or hardness, we work hard to maintain potability and deliver the best-tasting water nature has to offer.

Our Water – Hardness/pH

Our water pH is 7.2 and the hardness is 4 grains per gallon (or 68.4 mg per liter).

RETAIL SERVICE AREA

The Water Company's service area is almost entirely restricted from future expansion due to the close proximity of adjacent purveyor service area boundaries and is shown in Figure 1-3 located in the back pocket. Possibilities for the expansion of the Water Company's service area include a small area in the southern portion of the City of Edgewood that is currently served by Dechaux Mutual Water Company (a private water company).

ADJACENT PURVEYORS

The City of Edgewood is served by four water utilities; the Water Company, City of Milton, City of Sumner, and DeChaux Mutual Water Company. The Water Company's service area is entirely within the Edgewood City limits with the exception of 6 parcels in the City of Sumner. These 6 parcels are located in the southeast corner of the service area and are zoned Single Family. The Water Company serves approximately 80 percent of the homes and businesses within the City limits. The surrounding purveyors include the cities of Fife, Milton, Pacific, Puyallup, and Sumner as shown in Figure 1-2. Additionally, there are a number of private wells scattered throughout the service area.

WATER COMPANY'S SERVICE AREA FOR PLACE OF USE BENEFIT TO WATER COOPERATIVE MEMBERS

The Water Company, as a founding member of the Regional Water Cooperative of Pierce County ("Cooperative"), desires to assist other Cooperative members in meeting the water demands of a rapidly growing population in central Pierce County by supplying or wheeling water through one or more interties within the Cooperative's amalgamated service area boundary. Several Cooperative member water systems have already established wholesale service areas including Lakewood Water District and Spanaway Water Company. The Department of Ecology has also approved changes to the place of use of many of the water rights of Cooperative members to incorporate the combined service areas for distribution of water among Cooperative members (e.g., Lakewood Water District, Spanaway, and others, etc).

Cooperative members, including the Water Company, are finding that the costs associated with developing new water supplies exceed the costs of purchasing water from other Cooperative members. This, coupled with the effort and time involved in obtaining new water supplies, results in the purchase of water as the best alternative for new water sources for many Cooperative members with inadequate water rights to meet future growth demands.

Adoption of a Cooperative-Wide service area is consistent with the Pierce County Coordinated Water System Plan (PCCWSP). Page IX-12 of PCCWSP provides:

It is recommended that the individual systems [Cooperative members] continue to develop groundwater resources in their service areas to the extent that the groundwater aquifer will sustain the use and it is feasible to secure a water right. *There may be opportunities for joint development of wells and/or storage by adjacent systems. . . . As a further step in regional cooperation, it is recommended that the area to be served by the water right include the entire service area of the Cooperative Further, it is suggested that filings for new water rights also identify the entire area.....* Direct interties will be handled per WAC 246-290-100 and 246-290-132.

In addition, the PCCWSP recommendations contained on page IX-15 for Central Pierce County are also broadly consistent with the development of interties among adjacent purveyors in Central Pierce County, which would be supported by the establishment of a Cooperative-wide service area for the Water Company.

Since adoption of the PCCWSP, Chapter 90.03 RCW was revised by the Municipal Water Law, Second Engrossed Second Substitute House Bill (2E2SHB) 1338, which became effective on September 9, 2003. This law recently survived several facial constitutional challenges in the Supreme Court's ruling in *Lummi Indian Nation v. State of Washington*, 241 P.3d 1220 (2010). Section 5(2) of 2E2SHB 1338, codified at 90.03.386, provides that the place of use of a municipal water supplier's water rights includes any portion of the approved service area in a planning or engineering document approved by the Department of Health that was not previously with the place of use for that supplier's water rights, if the supplier is in compliance with the terms of its water system plan and the alteration of the place of use is not inconsistent, regarding an area added to the place of use, with any comprehensive plan or development regulations adopted under chapter 36.70A RCW, any other applicable comprehensive plan, land use plan, or development regulation adopted by a city, town, or county; or any watershed plan approved under chapter 90.82 RCW, or a comprehensive watershed plan adopted under RCW 90.54.040(1) after September 9, 2003, if such a watershed plan has been approved for the area. Approval of the service area for the Water Company's water rights to include the water service areas of other Cooperative members is not inconsistent with any of the above-described plans and would promote sound and efficient management of water resources throughout the Cooperative's combined service area.

Based on the PCCWSP, the Municipal Water Law, and the consistent actions of other Cooperative members, the Water Company adopts a Service Area that includes the service areas of all Cooperative members that are in compliance with the terms of the water system plan or small water system management program, including those regarding water use efficiency, at this time. The Service Area Map can be found in Appendix P.

EXISTING SYSTEM

The following sections provide a description of the major components of the Water Company's water system. A schematic diagram of the system is shown in Figure 1.4.

PRESSURE ZONES

The Water Company's service area consists primarily of two pressure zones; however, there are four areas which are served by pressure reducing stations. The majority of the distribution system is gravity supplied by the 550 Zone which includes the two South Reservoirs with an overflow elevation of 550 feet. The 1.0 MG North Reservoir has an overflow elevation of 388 feet. A booster pump station at the North Reservoir is relied on to supply the 550 zone. The 615 Zone consists of the area around the South Reservoirs and is served by the Upper Pressure Zone pump station.

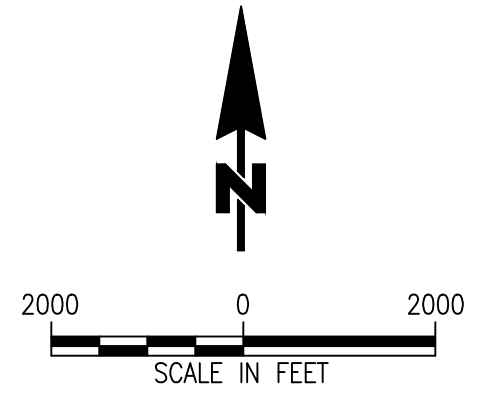
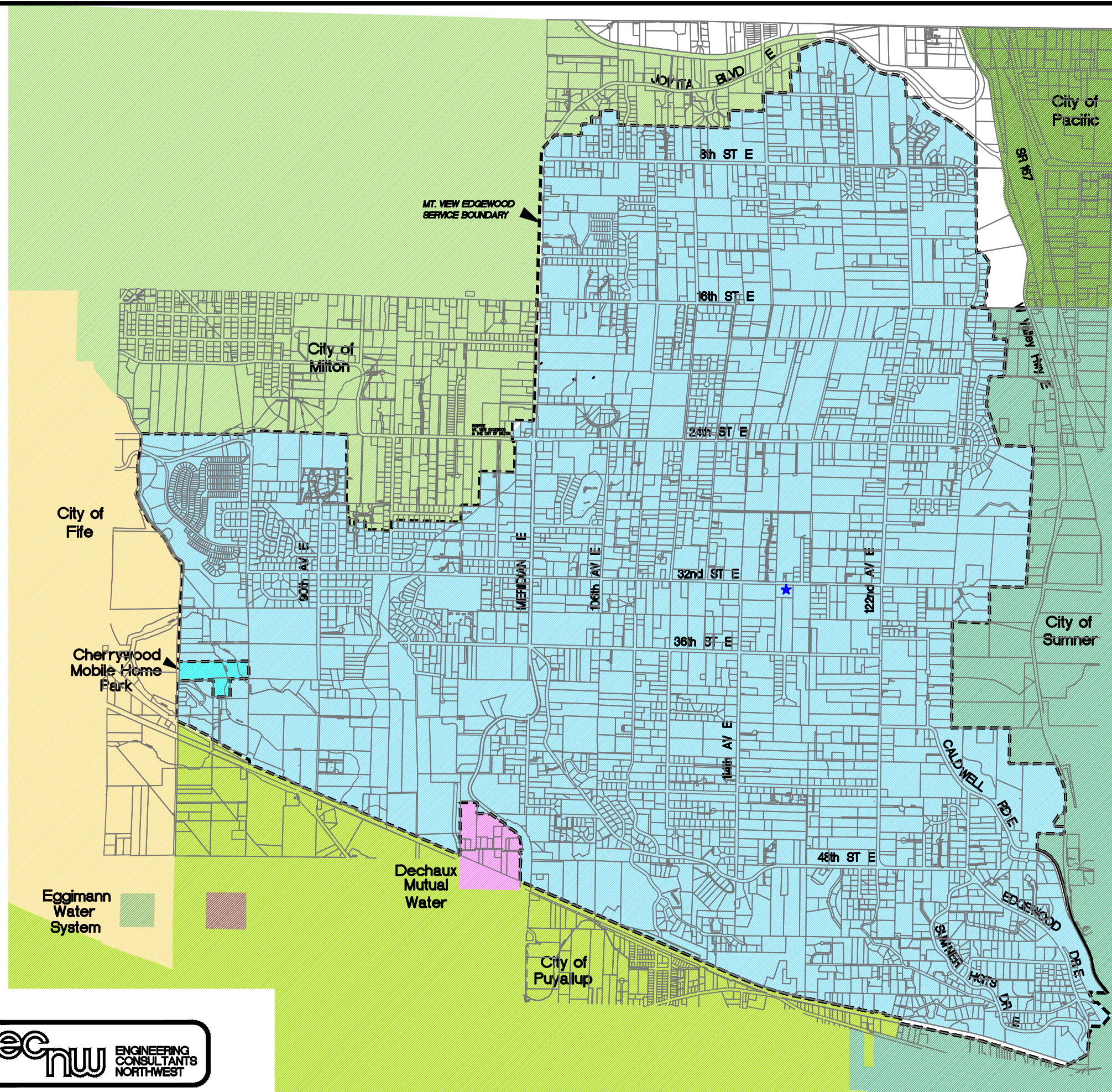
Four areas are served by pressure reducing stations located at 36th St East near Well's 9 and 11, 110th Ave East at Overlook Apartments, Bella Ridge located near Monta Vista and Sumner Heights, and the Westridge Development which is west of 86th Ave E. The areas currently served by each pressure zone are shown in Figure 1.5.

SUPPLY SOURCES AND WATER SUPPLY CHARACTERISTICS

The Water Company currently utilizes untreated groundwater sources for its water supply. The Water Company holds water rights for its nine wells. These sources are summarized in Table 1.2. Additional information on the Water Company's water rights and wells is included in Appendix C.

As indicated in Table 1.2, three of the Water Company's wells are not currently used. Valley Well 1 was abandoned and replaced with Well 1R. Leighton Well 2 produced only 100 gpm and pumped excessive quantities of sand. It is used as a Pierce County CWSP aquifer monitoring well. In an effort to eliminate the need for corrosion control treatment, Wells 3 and 7 are no longer used as full-time sources. Well 7 is used as a bulk/seasonal/emergency source. Well 4, not shown in the table, was drilled in 1967 to 138 feet and then drilled to 275 feet in 1969. It was capped off and never used due to low production, and the parcel was sold in 1978.

The Water Company's active wells are all operated by telemetry based on the water elevations of the South Reservoirs. Additional wells are brought on line as the water levels in the Reservoirs decrease. Based upon the system demand, the wells are pumped in a rotation that achieves maximum energy efficiency and reduces pump wear.



**MT. VIEW-EDGEWOOD
WATER COMPANY**
ADJACENT WATER PURVEYORS
FIGURE 1-2

2016\2181713-4\MS\2017-11\177\p\ms\FIGURE 1-2_1-2000_05-11-17.dwg



**TABLE 1.2
Supply Sources**

DOH Source No.	Well No.	Alternate Name	Date Drilled	Depth (ft.)	Current Well Pumping Capacity (gpm)
SO2	1	Valley Well 1	1953	94	Abandoned
SO3	2	Leighton	1968	397	30
SO4	3	Lake Chalet 1	1964	283	200 ⁽¹⁾
SO5	5	Barth	1970	419	370
SO6	6	106 th Ave Well	1977	400	200
SO7	7	Lake Chalet 2	1982	240	240 ⁽¹⁾
SO8	8	Well 8	1982	98	350
SO9 ⁽²⁾	9	Meyer Well	1985	250	500
S10	1R	Well 1R	1999	96	1000
S11 ⁽²⁾	11	Well 11	2008	232	1000
Current Total Source Capacity					3,660⁽³⁾

(1) Wells 3 and 7 cannot run simultaneously due to excessive aquifer drawdown.

(2) Wells 9 and 11 are in a Well Field known as DOH S12.

(3) Total doesn't include Wells 2 and 3 (emergency sources).

The Water Company's wells are located in the Puyallup-White Watershed. According to the Department of Ecology's *1995 Draft Initial Watershed Assessment, Water Resources Inventory Area 10, Puyallup-White Watershed*, minimum instream flows established by Chapter 173-510 WAC have not been met 10 percent of the time for periods in October through November in the Lower Puyallup River. This period of time coincides with the Pacific Salmon species upstream migrations for spawning. Over the last 20 years there has been a trend of decreasing "low" flows in the Puyallup River. At the time of Ecology's report, water rights, and claims represented approximately 44 percent of the minimum low flow during 1995. However, actual water use is not known and therefore, total water withdrawal cannot be accurately assessed. Ecology is currently gathering information on actual water use to evaluate total withdrawal compared to minimum low flows.

Groundwater quality data for the watershed indicates the groundwater is of generally high quality based on low nitrate-nitrogen concentrations for public water supply wells.

STORAGE FACILITIES

The Water Company currently owns and operates three steel above-ground reservoirs, with volumes of 446,777 gallons, 734,500 gallons, and 1,000,000 gallons for a total of 2,181,277 gallons. The South West and South East Reservoirs, have a base elevation of 500 feet, and overflow elevations of 550 feet. The North Reservoir has an overflow elevation of 388 feet. Table 1.3 provides a summary of the characteristics of each of the reservoirs.

TABLE 1.3
Existing Reservoirs

Reservoir	Capacity (gallons)	Location	Year Built	Material	Overflow Elevation (feet)	Height (feet)	Diameter (feet)
South East	446,777	12224 - 48 th Street E	1950	Steel	550	50	39
South West	734,500	12224 - 48 th Street E	1971	Steel	550	50	50
North	1,000,000	614 - 105 th Avenue E	2001	Steel	388	29	80

BOOSTER STATIONS

North Reservoir Booster Station: A booster pump is required to utilize the North Reservoir. A booster station was installed in 2001 along with the construction of the North Reservoir. The booster station can pump up to 1,500 gpm with all three pumps operating at full capacity, and can supplement fire flows throughout the entire system with a net total facility capacity of 2,960 gpm. Since the North Reservoir is below the hydraulic gradeline of the system, the booster station operates on a regular basis to maintain adequate water quality within the reservoir. The booster pump station is controlled by the Water Company's telemetry system. Table 1.4 provides information on the three pumps at the North Reservoir Booster Station.

Upper Pressure Zone (615'): This project was completed in 2007 and increased the pressure and fire flow to 110 parcels around the South Reservoirs by construction of a Booster Pump Station, check valves, and parallel mains. The Booster Station is located on the South Reservoir site. Check valves are located at 44th Street and 122nd Avenue, 44th Street and 127th Avenue, and 48th Street and Edgewood Drive. Prior to construction the water pressure in this area did not meet the minimum requirements as pressure could drop as low as 20 psi and fire flows at certain locations were limited to approximately 110. This project increased the service pressure throughout the pressure zone to a minimum of 50 psi and increased the fire flow to a minimum of 1,500 gpm. Information on the

pumps in the Upper Pressure Zone station is shown in Table 1.4. These pumps are variable frequency driven and controlled by system pressure.

**TABLE 1.4
Booster Pump Stations**

Location	Booster Pumps	Pump Type	Rated Capacity (GPM)	TDH (feet)	Pump Horsepower
North Reservoir 614 - 105th Avenue E	Pump #1	End Suction Centrifugal	300	215	30
	Pump #2	End Suction Centrifugal	600	215	50
	Pump #3	End Suction Centrifugal	600	215	50
South Reservoir Upper Pressure Zone 12224 – 48 th Street E 615’ HGL	Pump #1	Vertical Centrifugal	68	74	3
	Pump #2	Vertical Centrifugal	210	74	7.5
	Pump #3	Vertical Centrifugal	210	74	7.5
	Pump #4	Vertical Centrifugal	430	74	15
	Pump #5	End Suction Centrifugal	1100	70	25

DISTRIBUTION SYSTEM

As with most water systems, the Water Company’s existing distribution system has developed over the past several decades. The system is composed primarily of cast iron and ductile iron pipe. Table 1.5 lists the pipe within the distribution system by size.

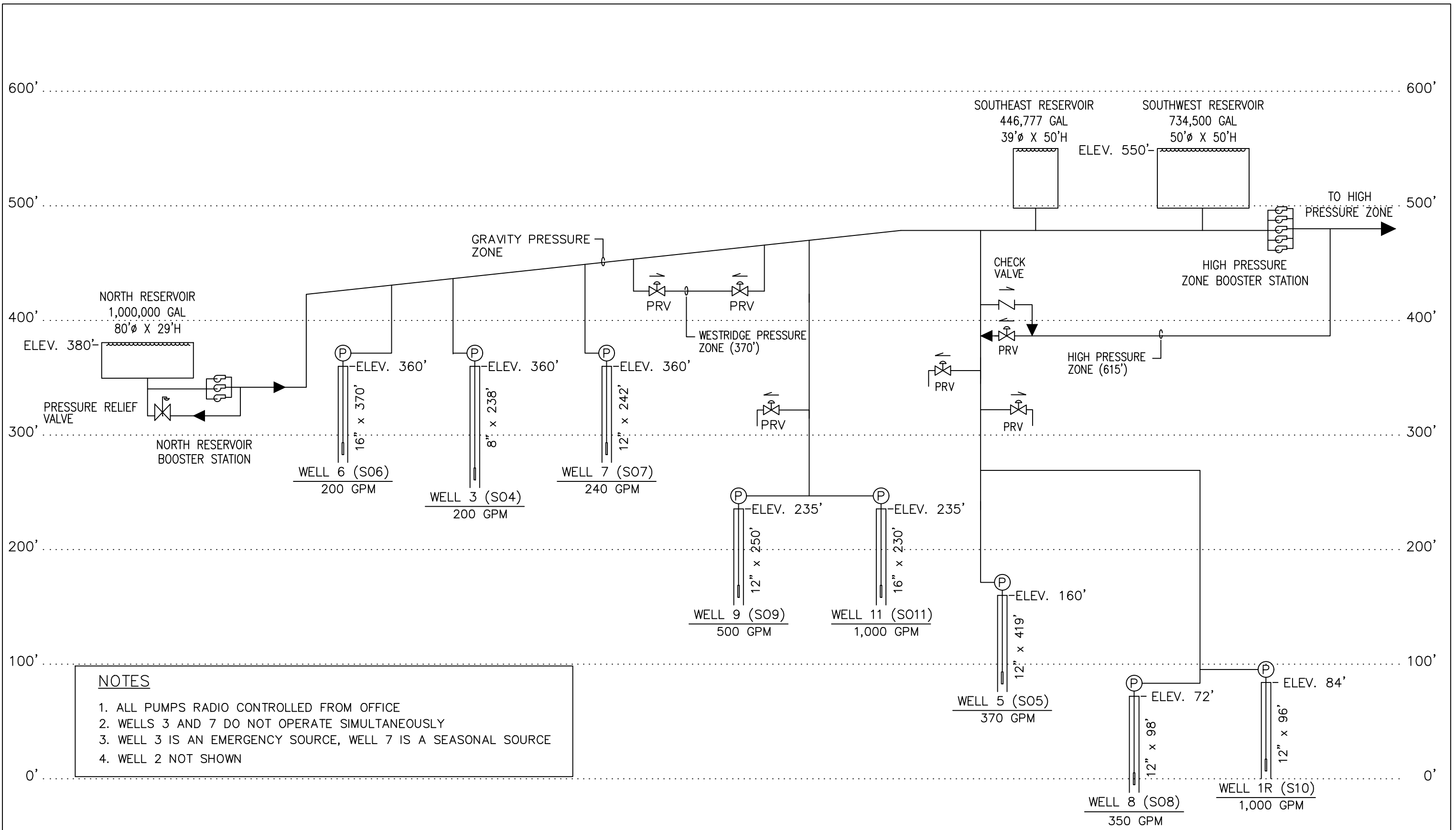
Figure 1.3 presents a water system map that depicts the existing facilities for the Water Company water system. The figure can be found in the back pocket.

TABLE 1.5
Pipe Length, Size, and Material

Diameter	Total Length (feet)	Percentage
Less than 4"	2,929	1%
4" C.I.	52,699	16%
4" D.I.	6,303	2%
6" A.C.	2,850	1%
6" C.I.	75,849	23%
6" D.I.	16,752	5%
8" C.I.	78,550	24%
8" D.I.	60,154	18%
10" C.I.	1,791	1%
10' D.I.	9,994	3%
12" D.I.	18,173	6%
Total	326,044	100

INTERTIES

The City of Milton completed an emergency intertie with the Water Company in 2007. In 2009 the intertie was reclassified as seasonal by DOH. Water flows to the City of Milton by gravity. This intertie could supply the Water Company from Milton through the use of a portable pump. The Water Company is currently exploring the possibility of installing an emergency intertie with the City of Fife. The Water Company's system would supply Fife by gravity.



NOTES

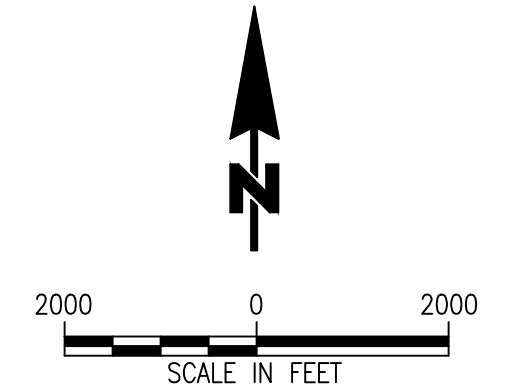
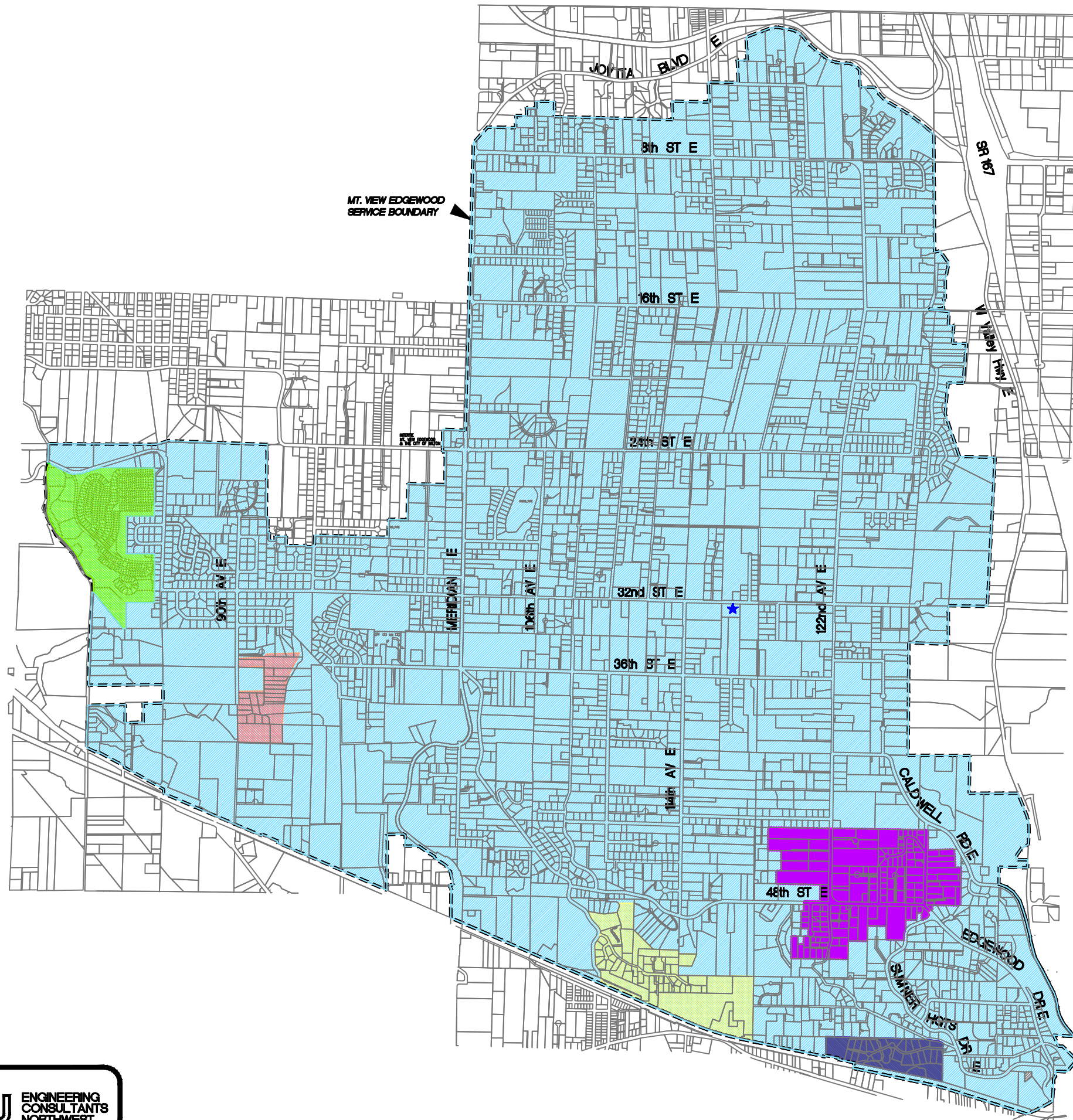
1. ALL PUMPS RADIO CONTROLLED FROM OFFICE
2. WELLS 3 AND 7 DO NOT OPERATE SIMULTANEOUSLY
3. WELL 3 IS AN EMERGENCY SOURCE, WELL 7 IS A SEASONAL SOURCE
4. WELL 2 NOT SHOWN



SYSTEM SCHEMATIC DRAWING

FIGURE 1-4

2018/08/15 11:46:30 AM - 2017-08-08 10:57:17 AM - 148 - E-12-17 - B80



LEGEND

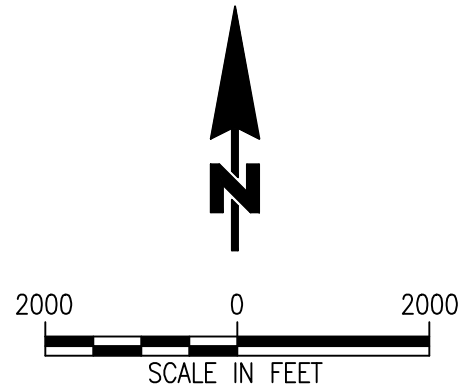
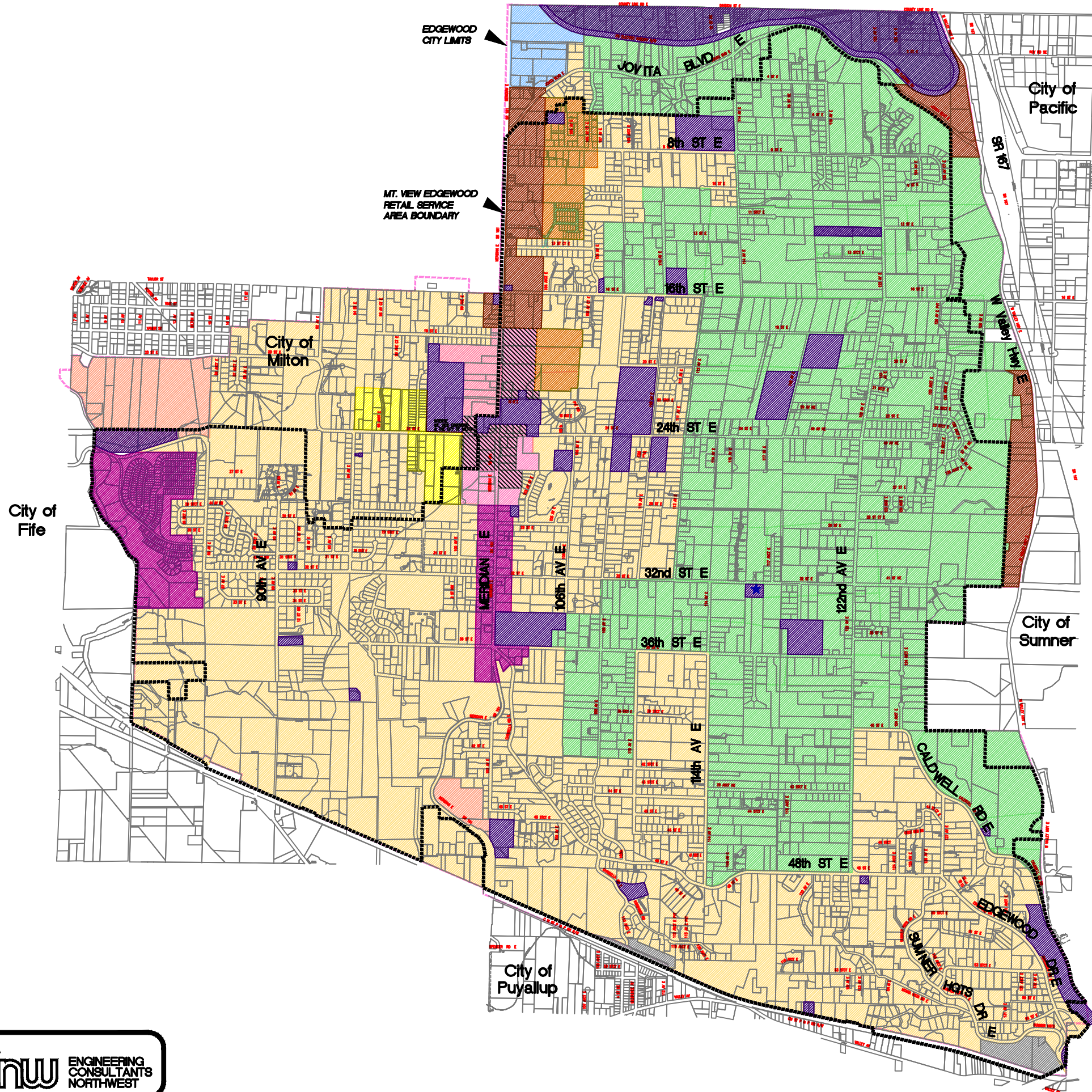
- GRAVITY ZONE
- UPPER PRESSURE ZONE
- 36TH STREET ZONE
- 110TH AVENUE ZONE
- WESTRIDGE ZONE
- MONTA VISTA ZONE

**MT. VIEW-EDGEWOOD
WATER COMPANY**

PRESSURE ZONES
FIGURE 1-5

2016\2161713-MVE\2017-11\17\figure\FIGURE1-5 1-2000 05-11-17 bae





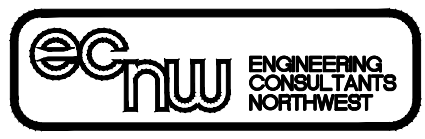
LEGEND

- SINGLE FAMILY LOW (SF-2)
- SINGLE FAMILY MODERATE (SF-3)
- SINGLE FAMILY HIGH (SF-5)
- COMMERCIAL (C)
- MIXED RESIDENTIAL LOW (MR 1)
- MIXED RESIDENTIAL MODERATE (MR 2)
- MIXED USE RESIDENTIAL (MUR)
- TOWN CENTER (TC)
- TOWN CENTER DENSITY OVERLAY (TC)
- PUBLIC (P)
- INDUSTRIAL (I)

**MT. VIEW-EDGEWOOD
WATER COMPANY**

**ZONING MAP
FIGURE 1-6**

2016/2181713-4/NE/2017-11/17/tyama/FIGURE-6 1-2000 05-11-17.txd



RELATED PLANNING DOCUMENTS

The following planning documents were consulted in the preparation of the 2017 Water System Comprehensive Plan:

MOUNTAIN VIEW-EDGEWOOD WATER COMPANY WATER PLANS

Mt. View-Edgewood Water Company Water System Plan, October 2011, ECNW and MTVE Staff

The 2011 Water System Plan was prepared for the Water Company to provide for a long-term planning strategy over the 6 year and 20 year planning periods. The Plan recommended Seismic retrofit of the South Reservoirs along with other capital improvement projects. In order to meet fire flow requirements, the Plan recommended upsizing water mains along 122nd Avenue. Projects completed since approval of the 2011 WSP are listed in Table 1.1.

COORDINATED WATER SYSTEM PLANNING DOCUMENTS

Pierce County Coordinated Water System Plan (CWSP): Regional-Supplement and Water General Plan, 2001 Update, Pierce County Public Works and Utilities, Water Program.

In 1983, the Pierce County Council declared Pierce County to be a Critical Water Supply Service Area due to the identification of a number of issues of concern regarding the delivery of adequate water service. The first Pierce County CWSP was established in 1988. The current CWSP was adopted in 2001 through Pierce County Ordinance #2003-69. The Pierce County CWSP contains a number of recommendations regarding administration, water rights, water resource management, water utility planning and operations, and implementation.

Tacoma Pierce County Health Department's (TPCHD) Environmental Health Regulation, Chapter 3, Section 6, C, 13.

Adopted February 3, 2010, the regulation prohibits the use of individual wells in a Group A water system's service area if the system is capable of providing water service.

GROWTH MANAGEMENT COMPREHENSIVE PLANS

City of Edgewood Comprehensive Plan, 2015 Update

The City's Comprehensive Plan was developed for consistency with the Comprehensive Plan for Pierce County and the Pierce County Coordinated Water System Plan. Through a public process, the Plan adopted a vision to sustain the small town character and rural nature of the City. The Plan developed a strategy for coordinate growth, including policies for land use and zoning. The Plan also provides a description of the Water Company that serves 80 percent of the residents and commercial

businesses within the City of Edgewood. Other purveyors who provide water service to the City include the City of Milton, the City of Sumner, and DeChaux Mutual Water.

EXISTING RETAIL SERVICE AREA

The Water Company retail service area is shown in Figure 1.3. As stated previously, the Water Company’s existing retail service area comprises approximately 80 percent of the City of Edgewood.

TABLE 1.6
Existing Retail Service Area Acreage

Jurisdiction	Acreage
City of Edgewood	5,346
Mt. View-Edgewood Water Company	4,390

ZONING AND LAND USE

The Water Company service area relies on the City of Edgewood zoning code. The current land use in the City is primarily residential, with areas of commercial mainly along Meridian Avenue East. The City of Edgewood’s Comprehensive Plan states that the residents are committed to preserving the rural nature of the area.

CITY OF EDGEWOOD ZONING

The City has eleven zoning designations as summarized in Table 1.7. The total acreage for each of the City’s zoning designations is summarized in Table 1.8. The purpose of each of the zoning designations follows.

Single Family

The City has three single family zoning designations; SF-3 and SF-5 are the primary residential zoning designations. SF-2 is intended to preserve the identity of areas with patterns of large residential lots, preserve tree stands and reduce traffic volumes in east-west arterial corridors. Permitted uses in single family zoning designations include: residential uses (e.g. single family detached dwellings, modular homes, group homes, manufactured homes), civic uses (e.g. daycare, open space, religious assembly), utility uses, as well as some minor commercial uses such as lodging and funeral services.

Mixed Residential

There are two mixed residential zoning designations. The purpose of MR-1 and MR-2 is to provide for moderate residential density using a variety of urban housing types such as small-lot detached dwellings, duplexes and townhouses. The same types of uses are permitted in mixed residential zoning designations as in single family residential zoning designations, with the addition of multi-family dwellings and senior housing facilities.

Mixed Use

There are four mixed use zoning designations. The Town Center (TC) zoning designation is intended to reflect a unique local character and rural roots. It accommodates a range of compatible uses emphasizing a variety of vertical and horizontal mixed use development, pedestrian-oriented retail, multifamily residential, senior housing and civic uses. The Commercial (C) zoning designation provides a visual and functional transition between the town center and adjacent zoning designations. While commercial development is emphasized, this zoning designation also allows light industrial and multifamily housing. The Mixed Use Residential (MUR) zoning designation accommodates a range of medium density residential housing types as well as some commercial uses and professional office uses. The Business Park (BP) zoning designation accommodates a wide range of employment and commercial uses, including professional office, senior housing and apartments, light industrial and retail uses.

Public

The City has a Public (P) zoning designation that provides for moderate-scale and large-scale activities relating to the purpose of state and local governmental entities and semi-public institutions providing necessary public services. Permitted uses in the public zoning designation include: civic uses (e.g. schools, parks, open space, safety services, and public services), utility uses, office uses and recreation uses.

Industrial

The City has an Industrial (I) zoning designation that provides for regional research, light manufacturing, warehousing and other major regional employment uses. Industrial lands are limited to areas where regional transportation access is available.

TABLE 1.7
City of Edgewood – Zoning and Residential Density

Zone	Minimum Density	Maximum Density	Minimum Lot Size (sf) (1)	Minimum Lot Size With Community On-Site System (sf) (1)
Single-Family Low (SF-2)	1 du/ac	2 du/ac	18,500	12,950
Single-Family Moderate (SF-3)	1 du/ac	3 du/ac	12,500	8,750
Single-Family High (SF-5)	2.5 du/ac	5 du/ac	6,500	4,450
Mixed Residential 1 (MR-1)	---	4 du/ac	7,200	---
Mixed Residential 2 (MR-2)	---	8 du/ac	3,200	---
Mixed Use Residential (MUR) (2)	10 du/ac	24 du/ac	---	---
Commercial (C)	---	48 du/ac	---	---
Town Center (TC)	16 du/ac	48 du/ac (3)	---	---

(1) Minimum net area required for single family detached housing.

(2) Minimum density only applies to single-use projects.

(3) Maximum Density Controlled by Maximum Height, FAR and Building Code

LAND USE

The City of Edgewood Comprehensive Plan describes the existing land use patterns within the City, which is pertinent to the Mt. View-Edgewood Water Company. An itemization of the land within the Water Company’s service area under the current City zoning is shown in Table 1.8. Single-family residential land makes up nearly 89 percent of the total. Mixed Residential comprises approximately 5 percent, Commercial and Town Center comprise 2.5 percent and Public and Industrial land uses comprise the remaining areas. The commercial facilities are located primarily on Meridian Avenue; however, many cottage industries exist within residential neighborhoods. Also shown in the table is the estimated number of potential dwelling units at “build-out” of all of the developable land within the Water Company’s service area. This data has been interpolated from the City of Edgewood’s

2015 Comprehensive Plan. The build-out condition is expected to occur way beyond this current 20 year planning period.

TABLE 1.8
Service Area Zoning

Zone	Base Density	Area Within Zone (acres)	Percent of Total	Potential Dwelling Units (2)
Single-Family Low (SF-2)	1 du/ac	1,743	39.7	2,614
Single-Family Moderate (SF-3)	1 du/ac	2,131	48.8	3,036
Single-Family High (SF-5)	2.5 du/ac	18	0.1	90
Mixed Residential 1 (MR-1)	---	16	0.4	269
Mixed Residential 2 (MR-2)	---	69	1.6	481
Mixed Use Residential (MUR)	10 du/ac	136	3.1	870
Commercial (C) (1)	12 du/ac	56	1.3	584
Town Center (TC) (1)	16 du/ac	54	1.2	1,051
Public (P)	---	150	3.4	---
Industrial (I)	---	17	0.4	---
Total		4,390	100.0	8,995

(1) Requires Mixed-Use component in order to realize maximum residential densities allowed within these zones.

(2) Refer to City of Edgewood 2015 Comprehensive Plan

SERVICE AREA POLICIES AND CONDITIONS OF SERVICE

The Department of Health has established a list of policies that should be addressed in a water system plan. Table 1.9 provides a list of these policies, covered issues, and associated Water Company policy documents contained in the Mt. View-Edgewood Water Company Policy Book. The policy book is included in Appendix B. The Water Company's Development Standards which establish design, performance, main extension, and materials policies are included in Appendix E.

SERVICE AREA AGREEMENTS

In accordance with the requirements of WAC Chapter 248-56-730, the Water Company has service area agreements with the Cities of Milton, Puyallup, Sumner, and Fife. These service area agreements detail service area boundaries for the Water Company with respect to adjacent purveyors. Copies of these service area agreements are included in Appendix D.

PURVEYOR RESPONSIBILITIES WITHIN THE URBAN GROWTH AREA

The Water Company is the largest water purveyor within the City of Edgewood, serving more than 80 percent of the residents. The City's corporate boundaries for growth management and through its Comprehensive Plan provide goals and guidelines for the complexity and variety of utility purveyors that serve the City. Title 18, Development Standards of the Edgewood Municipal Code provide the requirements for new development. The Water Company's Development Standards provide the general minimum requirements for the construction of water facilities within its boundaries.

TABLE 1.9
Mt. View-Edgewood Water Company – Service Area Policies

Policy Name	Issues Covered	Current Water Company Policy
Direct Connection Policy	Application must be made, services paid for and membership paid for before service will be installed. The service will be installed adjacent to the property line within the road right-of-way or utility easement.	Water Company Policy Book, Book 3, Policy #3210
Wholesaling of Water	The Water Company will consider the wholesaling of water on a case-by-case basis. The Water Company currently has an agreement with the City of Milton for a seasonal intertie.	2017 Water System Plan
Design and Performance Standards Policy	Policy to establish Water Company minimum design and performance standards for proposed developments within the Water Company's existing and future service area. Fire flow standards are contained in City of Edgewood code Title 15.05.110	Development Standards, City of Edgewood Municipal Code
Connection Fee Policy	The unit price for membership shall be per the most current fee schedule. Increases in new membership cost may be recommended by member petition and/or by Board of Directors.	Water Company Policy Book, Book 1, Policy #1210, Section V
Meter Policy	There will be a bimonthly, ready to serve rate on all meters, based on meter size. Each separate parcel that receives water service shall have a separate meter, and must be covered by a membership.	Water Company Policy Book, Book 1, Policy #1210, Section V
Cross Connection Control	All service connections require premises isolation.	Cross Connection Control Program

TABLE 1.9
Mt. View-Edgewood Water Company – Service Area Policies (continued)

<p align="center">Extension Policy</p>	<p>Water mains and appurtenances shall be extended by the owner of the parcel(s) needing water. The process for extension shall be by Water Company Policy. Offsite improvements may also be needed to meet fire flow requirements. Costs shall be borne by the property owner. The Water Company does not have a late-comers policy.</p>	<p align="center">Development Standards</p>
<p align="center">Individual (Private) Well Policy</p>	<p>The Water Company will consider the installation of individual wells on a case-by-case basis if a water main extension is not feasible. All projects requesting wells will need to establish that they do not infringe on a Senior Water Right or on an established Instream Flow and satisfy all current Tacoma Pierce County Health Department (TPCHD) review requirements. Well and Water Company Services.</p>	<p align="center">2017 Water System Plan TPCHD</p>

CHAPTER 2

BASIC PLANNING DATA

OBJECTIVE

Basic planning data is an essential component of a Water System Comprehensive Plan. The objective of this chapter is to present basic planning data and water demand forecasts needed to assess the current and future capabilities of the water system. This chapter will provide existing planning data as well as future projections for population, service connections, water use, and water demand data associated with the planning element known as an equivalent residential unit (ERU). The chapter also includes water demand forecasts for 10 and 20 year planning periods.

The water use data and water demand forecasts found in this chapter comprise two of the three elements required for the development of a water use efficiency program. The third required element is the implementation of a water use efficiency program which is discussed in Chapter 4.

WATER SERVICE AREA POPULATION

The total population within the Water Company's service area was estimated using population information from the City of Edgewood's (City) 2015 Comprehensive Plan. The plan was based on data from the Puget Sound Regional Council (PSRC). The PSRC divides the Puget Sound area into Transportation Analysis Zones (TAZ), and provides population estimates based on the 2000 Census. Pierce County utilizes TAZ data for its population forecasts that are grouped into "Micro-TAZ" geographic areas. The County adjusted the TAZ data to match the boundaries of the Water Company. The Water Company, which comprises approximately 80 percent of City of Edgewood, is made up mostly of TAZ 764 and 765. The City estimates the 2011 population for the Water Company's service area to be 7,886, with 3,010 households, which equates to 2.62 people per household (pph).

Table 2.1 includes a history of water service connections that indicates the level of growth within the Water Company's service area over the last six years. At the end of the 2016, the Water Company had 3,074 connections (not including three Wholesale Customers). At the Pierce County average for this area of 2.62 people per household, the Water Company served a population of approximately 8,054 people.

**TABLE 2.1
Historical Water Service Connections**

Year	Residential SFR	Residential MFR	Commercial	Wholesale	Total
2011	2,742	95	78	2	2,917
2012	2,746	95	78	2	2,921
2013	2,783	95	79	2	2,959
2014	2,809	95	80	2	2,986
2015	2,829	99	82	2	3,012
2016	2,851	139	84	3	3,077

CONNECTIONS BY CUSTOMER CLASS

All of the Water Company’s service connections are metered. The Water Company classifies the connections as Residential SFR (includes home businesses), Residential MFR (includes individually metered duplexes, 4-plexes, apartments, condominiums, town homes), Commercial (includes schools, churches, city owned, irrigation, and commercial non-profit), and Wholesale. The Water Company has three Wholesale connections which are metered; the City of Milton seasonal intertie, the fill point at Well 7 and the Water Company shop fill point which is used by contractors, landscapers, and county road crews. Shown in Table 2.2 is a listing of the current connections itemized by customer class and meter size.

**TABLE 2.2
2016 Service Connections by Customer Class**

Meter Size	Residential SFR	Residential MFR	Commercial	Wholesale	Total
5/8”	1,376	46	25	0	1,447
3/4”	1,105	31	21	0	1,157
1”	366	22	19	0	407
1-1/2”	2	26	8	0	36
2”	2	14	8	1	25
3”	0	0	2	0	2
4”	0	0	1	1	2
6”	0	0	0	1	1

SYSTEM DEMANDS

Water production data is collected from the source meters and recorded on a daily basis. Consumption data is obtained from customer service meter readings that are conducted monthly. Presented below is a description of the source production, customer consumption and distribution system leakage history over the last six year planning period.

SOURCE PRODUCTION

Table 2.3 shows the source production history for each operating well in the system over the last six years.

TABLE 2.3
Total Production for Each Well

Year	Production (gallons)						
	Well 1R	Well 5	Well 6	Well 7	Well 8	Well 9	Well 11
2011	67,908,000	4,000	1,259,600	2,221,000	8,392,000	4,881,000	170,232,247
2012	9,154,000	20,000	47,282,300	0	34,665,000	64,796,000	119,538,942
2013	35,017,000	0	11,805,300	0	34,989,000	105,463,000	101,923,049
2014	64,755,000	0	11,439,900	24,000	29,815,000	113,217,000	81,172,330
2015	88,049,000	530,000	27,313,900	7,019,000	30,451,000	85,490,000	98,592,855
2016	80,582,000	0	23,716,700	0	30,545,000	110,796,000	69,673,402

The Water Company's production per capita history is shown in Table 2.4. Water production data has been compiled by the Water Company on an annual basis. The average daily well production for the period from 2011 to 2016 ranged from low of 702,262 gallons per day (gpd) in 2011 to a high of 930,609 gpd in 2015. Any water purchased by the City of Milton through the seasonal intertie has been removed from the production total so the per capita value shown represents only water sold within the Water Company's service area. The average per capita production value over the past six year period was 104.4 gpcd. A value of 117 gpcd will be used to estimate future water production requirements through the twenty-year planning period.

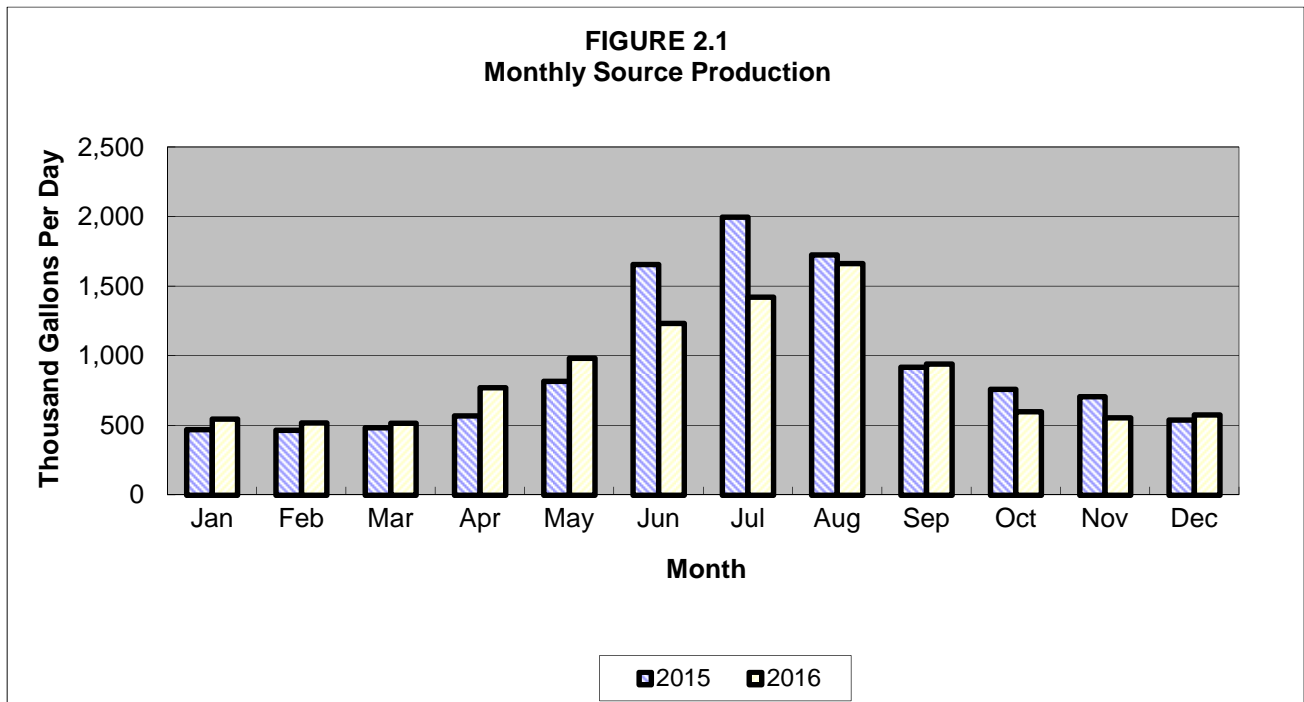
**TABLE 2.4
Water Production per Capita**

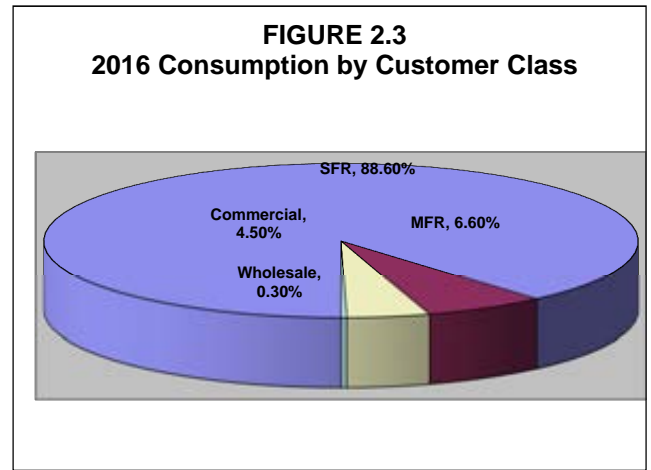
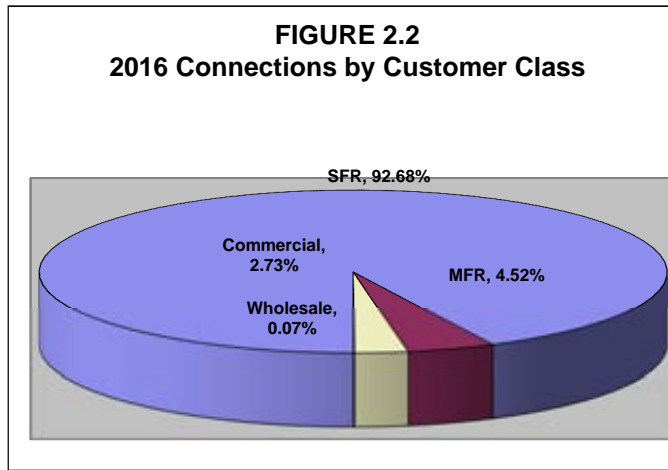
Year	Total Connections ⁽¹⁾	Estimated Service Area Population ⁽²⁾	Average Day Production (gpd)	Average Production Less Inerties (gpd)	Estimated per Capita Production (gpcd)
2011	2,915	7,637	702,262	702,262	91.9
2012	2,919	7,647	760,626	760,626	99.4
2013	2,957	7,747	798,475	798,475	103.1
2014	2,984	7,818	833,028	833,028	106.6
2015	3,010	7,886	930,609	930,609	118.0
2016	3,074	8,054	863,052	863,052	107.2
Average					104.4

(1) Total excludes Wholesale customers.

(2) Estimated population based on Pierce County projections of 2.62 people per connection.

The total monthly source production values for the year 2015 and 2016 are shown in Figure 2.1. The data depicts the typical seasonal variation in production; however, the demands in 2016 were abnormally low due to a cool and relatively wet summer.





CUSTOMER CONSUMPTION

Table 2.5 and Figure 2.2 show a breakdown of the service connections in 2016 by customer class. The residential (single-family and multi-family) classes comprise approximately 97% of the total connections; however, they represent only 89% of the total consumption as shown in the table and in Figure 2.3.

TABLE 2.5
2016 Connections and Consumption by Customer Class

Customer Classification	Connections	Percent of Total	Consumption (gpd)	Percent of Total
Residential SFR	2,851	92.68	685,801	88.6%
Residential MFR	139	4.52	51,726	6.6%
Commercial	84	2.73	34,730	4.5%
Wholesale	3	.07	1,150	0.3%
Total	3,077	100.00		100%

Table 2.6 shows the water purchased by the City of Milton through the seasonal intertie. Over the last 6 years the intertie has not been utilized.

TABLE 2.6
Intertie Consumption (Wholesale)

Year	System	Total Gallons
2011/2016	City of Milton, ID #54950	0

DISTRIBUTION SYSTEM LEAKAGE (DSL)

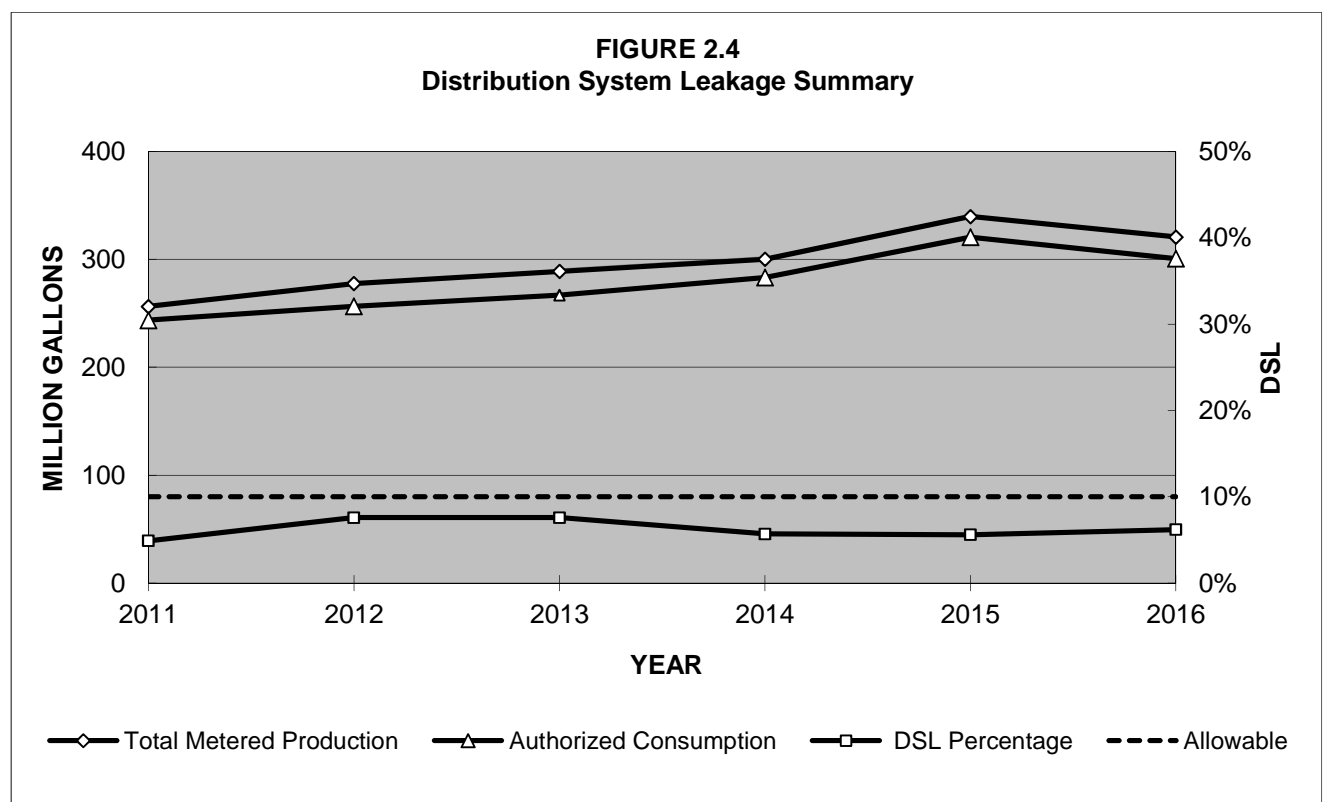
DSL is defined as the difference between Metered Source Production and Authorized Consumption. DSL is due to leaks (including main breaks), unauthorized uses such as illegal hydrant use or illegal connections, meter inaccuracy (under-registration), and data collection or calculation errors.

Table 2.7 itemizes the Total Metered Production, Authorized Consumption, and DSL from 2011 to 2016. The average daily authorized consumption ranged from a low of 667,573 gpd in 2011 to a high of 878,174 gpd in 2015. The Water Company’s average DSL over the last three years is 5.8%. The Water Company has set a goal to maintain the DSL at or below 10 percent of water production. This goal is recognized as the standard goal for the State of Washington’s Water Use Efficiency program as discussed in Chapter 4.

The Water Company’s water production and authorized consumption history based on source and customer meter data is presented graphically in Figure 2.4.

TABLE 2.7
Metered Water Production, Consumption, and DSL

Year	Total Metered Production (gallons)	Total Authorized Consumption (gallons)	DSL (gallons)	DSL Percentage (gallons)	DSL 3 Year Rolling Average
2011	256,325,779	243,664,193	12,661,586	4.9%	6.4%
2012	277,628,529	256,530,754	21,097,775	7.6%	6.7%
2013	288,849,016	266,861,196	21,987,820	7.6%	6.7%
2014	300,189,795	283,169,714	17,020,081	5.7%	7.0%
2015	339,672,551	320,533,648	19,138,903	5.6%	6.3%
2016	320,746,758	300,783,835	19,962,923	6.2%	5.8%



LARGE WATER USERS

The 10 largest water users in the Water Company's water service area and their average day consumption are listed below in Table 2.8. The data shown is for 2015. This data was used because 2015 experienced the largest demands over the past 6 years. These customers accounted for approximately 4% of the total authorized consumption for that year.

TABLE 2.8
2015 Largest Water Users Consumption

Premise ID No.	Customer	Annual Consumption (gallons)	Average Day Metered Consumption (gpd)
100007	School	2,727,305	7,472
184600	Commercial	2,612,570	7,158
14092	School	1,751,509	4,799
1355	Residential	1,578,265	4,324
22800	Residential	1,127,580	3,089
22910	Residential	1,001,550	2,744
25150	Residential	928,590	2,544
12240	Residential	798,782	2,188
18750	Residential	770,627	2,111
24125	Residential	732,875	2,008
Total		14,029,653	38,437

EQUIVALENT RESIDENTIAL UNITS

An Equivalent Residential Unit (ERU) is the volume of water used by the average full-time, single-family residence. The value is used to relate the water demands of non-single family customers to that of the average single family unit as multiples of the calculated ERU value. This concept is especially useful when analyzing systems with multiple customer classes. ERU's are calculated by dividing the total volume of water utilized in the Residential SFR customer class by the total number of Residential SFR connections. A distinction is usually made between Residential SFR's and Residential MFR's because multi-family dwellings typically use only approximately 80 percent of the water used by single-family dwellings.

Table 2.9 presents the calculated ERU values for the Water Company from 2011 through 2016. The average Residential SFR consumption for the Water Company was determined to be approximately 227 gpd over this period. The value was matched or exceeded in two of the six years. Therefore, a slightly more conservative consumption value of 240 gpd per ERU was used for system capacity analysis and design. The average daily source production over the six year period was approximately 814,680 gpd while the average number of ERU's was 3,128. The system unit source production value calculates to be 260 gpd per ERU. A design value of 270 gpd per ERU will be used.

TABLE 2.9
Equivalent Residential Units (ERU)

Year	Average Demand (gpd)	Connections	ERU Demand (gpd/ERU)	ERU's	
Single Family Residential (SFR)					
2011	573,834	2,742	209	2,742	
2012	599,937	2,746	218	2,746	
2013	614,867	2,783	221	2,783	
2014	629,350	2,809	224	2,809	
2015	704,648	2,829	249	2,829	
2016	685,801	2,851	241	2,851	
Multi-Family Residential (MFR)					
2011	38,509	95	209	184	
2012	37,672	95	218	173	
2013	36,115	95	221	163	
2014	34,025	95	224	152	
2015	41,904	99	249	168	
2016	51,726	139	241	215	
Commercial					
2011	34,276	78	209	164	
2012	34,122	78	218	157	
2013	33,785	79	221	153	
2014	33,219	80	224	148	
2015	37,942	82	249	152	
2016	34,730	84	241	144	
Wholesale (1)					
2011	945	1	209	5	
2012	1,158	1	218	5	
2013	1,202	1	221	5	
2014	403	1	224	2	
2015	2,433	1	249	10	
2016	1,150	1	241	5	
System Totals					
Year	Single Family Residential (SFR)	Multi- Family Residential (MFR)	Commercial	Wholesale (1)	Total ERU's
2011	2,742	184	164	5	3,095
2012	2,746	173	157	5	3,081
2013	2,783	163	153	5	3,104
2014	2,809	152	148	2	3,111
2015	2,829	168	152	10	3,159
2016	2,851	215	144	5	3,215

(1) Wholesale values does not include Milton intertie or Well 7 fill site.

MAXIMUM DAY DEMAND FACTOR

The maximum quantity of water produced in a 24-hour period is known as the Maximum Day production. Table 2.10 lists a history of peak day production for the years 2011 through 2016, taken from Water Company daily production records.

TABLE 2.10
Maximum Day Production

Year	Average Day Production (gpd)	Maximum Day Production (gpd)	Maximum Day Factor
2011	702,262	1,881,949	2.68
2012	760,626	2,166,386	2.85
2013	798,475	1,998,383	2.50
2014	833,028	2,063,156	2.48
2015	930,609	2,866,458	3.08
2016	863,053	2,502,166	2.90
Average			2.75

During the last six years, the ratio of metered maximum day production to the metered average day production averaged 2.75. Multiplying the average day demand of 270 gpd per ERU by this factor yields a Maximum Day Demand of 742 gpd per ERU. Using a more conservative demand factor of 3.10 results in a Maximum Day Demand of 837 gpd per ERU, a value of 840 gpd per ERU will be used for system planning.

PEAK HOUR DEMAND

The maximum quantity of water produced in a one-hour period is defined as the Peak Hour Demand. If precise records of peak hour demand are not available, peak hour is often expressed in terms of a peaking factor. A peaking factor is defined as the ratio of peak hour to the Maximum Day Demand. It is generally accepted that peak hour factors range from 1.5 to 2.5. Equation 5-1 of the DOH Water System Design Manual (December 2009) provides a methodology for calculating peak hour demand (PHD). The generalized equation is provided below. The values for the constants C and N are based on the number of ERU's served per Table 5.1.

$$PHD = (MDD/1440)[(C)(N) + F] + 18$$

Where:

PHD = Peak Hour Demand, (gallons per minute, gpm)

C = Coefficient Associated with Ranges of ERU's = 1.60

N = Number of Service Connections, ERU's

F = Factor Associated with Ranges of ERU's = 225

MDD = Maximum Day Demand (gpd/ERU) = 830 gpd

The equation reduces to the following with the insertion of the listed constants:

$$PHD = 0.933 (N) + 149$$

FIRE FLOW DEMAND

Fire Flow Demand is the amount of water required during firefighting event as defined by applicable codes. Fire flow requirements are established for individual buildings and expressed in terms of flow rate (gpm) and flow duration (hours). Fighting fires imposes the greatest demand on the water system because a high rate of water must be supplied over a short period of time, requiring each component of the system to be properly sized and configured to operate at its optimal condition. Adequate storage and supply is useless if the transmission or distribution system cannot deliver water at the required rate and pressure necessary to extinguish a fire.

Fire flow requirements for the Water Company are in accordance with those established for Pierce County and the City of Edgewood. Edgewood Municipal Code 15.05.110 requires conformance to the International Fire Code. The minimum fire flow requirement for single family structures of less than 3,600 square is 1,000 gpm for one hour duration. Larger structures and commercial facilities require larger demands and longer durations depending on the building use. The Water Company's design standards require the system to provide a minimum flow rate of 1,500 gpm for 120 minutes in residential areas, however, larger fire demands are typically required for the commercial developments along Meridian Avenue E, depending on the nature and size of the development. A fire demand of 2,500 gpm is the design standard for commercial developments. The water system analysis presented in Chapter 3 is based on the system providing sufficient fire flow in accordance with these general fire flow requirements.

DEMAND SUMMARY

A summary of system planning source production demands is presented in Table 2.11. These values do not reflect any efforts of future water conservation. They also do not include the intertie demands as they will be evaluated separately from the Water Company's service area demands.

TABLE 2.11
Demand Summary

Demand Type	Value
Average Day Demand (ADD)	270 gpd/ERU
Maximum Day Demand (MDD)	840 gpd/ERU
Peak Hour Demand	0.933 ERU's + 149 (gpm)
Fire Demand	2,500 gpm
Demand Duration	2 hours
Wholesale Demand (intertie)	500 gpm maximum

FUTURE SYSTEM DEMANDS

POPULATION PROJECTIONS

Population projections for the Water Company's service area are based on forecasts made by the City utilizing the greater portions of TAZ 764 and 765. The City has forecast a 2.60% annual growth rate to the year 2035.

The projected population and estimated ERU values for the Water Company's service area for the twenty-year planning period is listed in Table 2.12 and shown graphically in Figure 2.5. The projected number of connections is based upon a conservative occupancy of 2.62 persons per connection.

TABLE 2.12
Projected Population

Year	Projected Service Connections ⁽¹⁾	Projected Service Area Population ⁽²⁾	Projected ERU's
2017	3,154	8,260	3,334
2018	3,236	8,480	3,420
2019	3,320	8,700	3,509
2020	3,406	8,920	3,600
2021	3,495	9,160	3,694
2022	3,586	9,400	3,790
2023	3,679	9,640	3,889
2024	3,775	9,890	3,986
2025	3,873	10,172	4,090
2026	3,974	10,104	4,197
2031	4,518	11,840	4,771
2036	5,136	13,460	5,424

(1) Based on a straight-line projection of 2.60 percent growth from the City's 2015 Comprehensive Plan.

(2) Based on 2.62 people per connection.

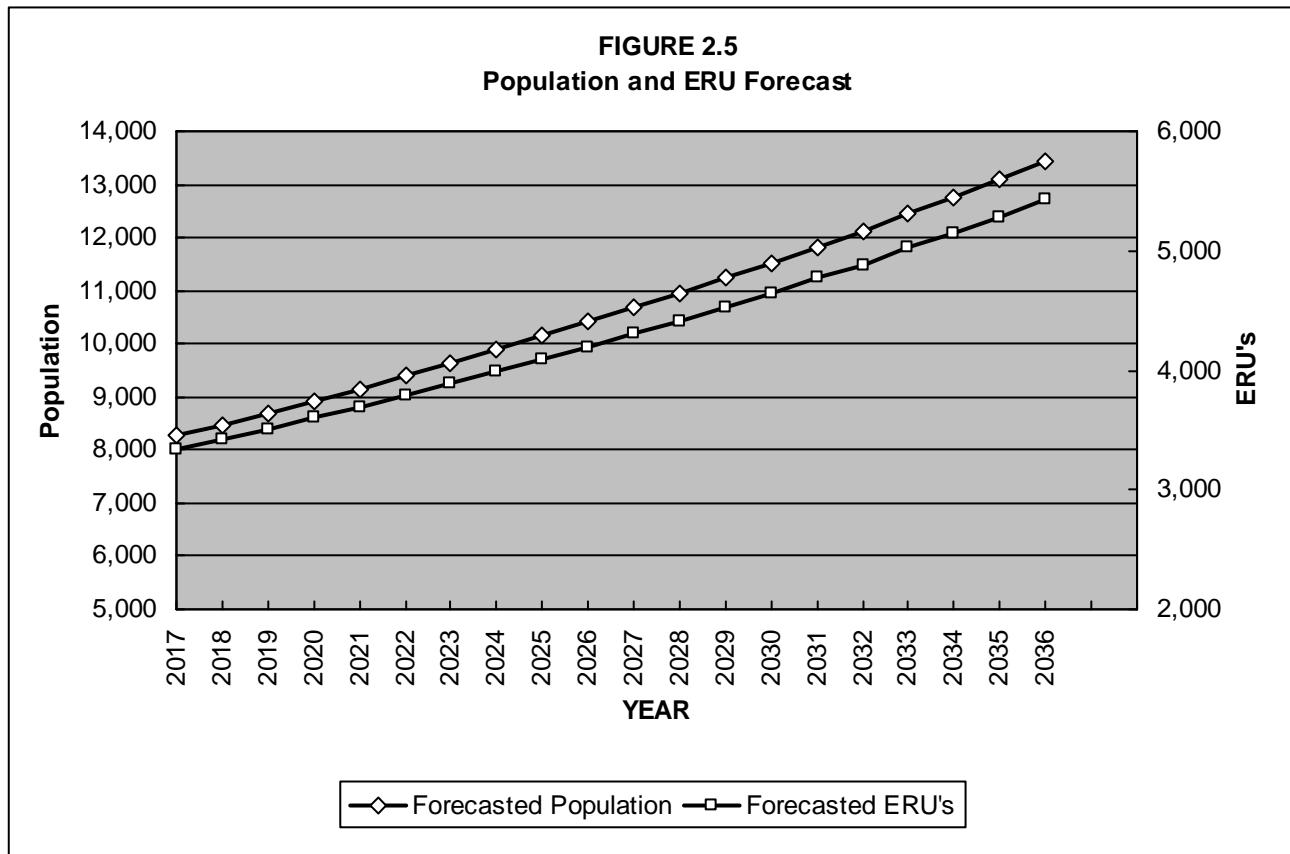
FUTURE SERVICE AREA

The Water Company's service area is restricted from future expansion due to adjacent purveyor service area boundaries. The only possibility for the expansion of the Water Company's service area is a small area in the southern portion of the City of Edgewood that is currently served by Dechaux Mutual Water Company (a private water company).

The unclaimed area between the City of Pacific and our service boundary lies within the City of Edgewood however is not feasible for MTVE to serve it. A main extension here would be approximately 7,400 lineal feet, have to cut through the City of Milton's service area, cross a fish bearing stream twice, and proceed down the slide prone Jovita Canyon. The City of Pacific has a newer water main located along West Valley Highway and is the logical purveyor for these parcels.

~ 2-11 ~

Based on the City of Edgewood Comprehensive Plan, the City’s vision is to maintain its existing character. Therefore, it is anticipated that the area within the existing service area would remain primarily rural residential. Portions of the City along the Meridian Avenue East corridor will continue to have MFR, commercial and professional office land use and development.



WATER DEMAND PROJECTIONS

An essential component of the Plan is to project water demands during the ten-year and 20-year planning periods. As noted above, the types of demand that are considered in this Plan include average day, maximum day, and peak hourly. These production values are projected based on the planning data presented in Table 2.11.

Historically, commercial water consumption was a small percentage of the total water use. In 2011, the City of Edgewood completed a public sanitary sewer project along Meridian Avenue East and the Water Company has seen an increase of Multi-Family and Commercial users in this area. Residential and Commercial growth consumption were both projected at the 2.60% growth rate. Table 2.13 shows projected average day, maximum day, and peak hour demands through the year 2036. Production is projected as the sum of annual metered consumption, authorized metered use, and distribution system leakage. The data does not reflect any water savings from the Water Company’s conservation efforts. This ensures that any future system planning is intended to meet all demand requirements whether or not the conservation goals are achieved. The data also does not reflect any potential for wholesaling water. The effect of the interties on source production is

~ 2-12 ~

evaluated in Chapter 3. Shown in Table 2.14 are the projected water demands assuming the water saving goals presented in Chapter 4 are attained.

TABLE 2.13
Projected Production Without Conservation

Year	Connections	ERU's	ADD (gpd)	MDD (gpd)	PHD (gpm)
2017	3,154	3,334	900,000	2,801,000	3,260
2018	3,236	3,420	923,000	2,873,000	3,340
2019	3,320	3,509	947,000	2,948,000	3,420
2020	3,406	3,600	972,000	2,024,000	3,510
2021	3,495	3,694	997,000	3,103,000	3,600
2022	3,586	3,790	1,023,000	3,184,000	3,690
2023	3,679	3,889	1,050,000	3,267,000	3,780
2024	3,775	3,986	1,076,000	3,348,000	3,870
2025	3,873	4,090	1,104,000	3,436,000	3,960
2026	3,974	4,197	1,133,000	3,525,000	4,060
2031	4,518	4,771	1,288,000	4,008,000	4,600
2036	5,136	5,424	1,464,000	4,556,000	5,210

**TABLE 2.14
Projected Production With Conservation**

Year	Connections	ERU's	ADD (gpd)	MDD (gpd)	PHD (gpm)
2017	3,154	3,334	898,000	2,801,000	3,260
2018	3,236	3,420	919,000	2,873,000	3,340
2019	3,320	3,509	941,000	2,948,000	3,420
2020	3,406	3,600	963,000	2,024,000	3,510
2021	3,495	3,694	986,000	3,103,000	3,600
2022	3,586	3,790	1,009,000	3,184,000	3,690
2023	3,679	3,889	1,036,000	3,267,000	3,780
2024	3,775	3,986	1,062,000	3,348,000	3,870
2025	3,873	4,090	1,089,000	3,436,000	3,960
2026	3,974	4,197	1,118,000	3,525,000	4,060
2031	4,518	4,771	1,271,000	4,008,000	4,600
2036	5,136	5,424	1,444,000	4,556,000	5,210

CHAPTER 3

SYSTEM ANALYSIS

OBJECTIVE

The objective of this chapter is to determine if the existing system components are capable of supplying a sufficient quantity of water of suitable quality to meet existing, as well as projected demands.

The ability of a water utility to meet current and anticipated future demands is an important consideration in water system planning. In addition to demand considerations, water quality plays a major role in determining the adequacy of a water system. The components that are analyzed in this chapter are listed as follows:

- System Design Standards
- Water Quality Analysis
- Facility Analysis
- System Deficiencies and Proposed Improvements

Design standards identify performance and design criteria that are applicable to the Water Company. Water quality and the existing facilities are evaluated according to identified standards. Based on these analyses, water system deficiencies and recommendations to meet design standards are provided.

SYSTEM DESIGN STANDARDS

Performance and design criteria typically address the sizing and reliability requirements for the supply source, storage, distribution, and fire flow. Chapter 246-290 WAC contains general criteria and standards that must be followed in the development of public water systems. In addition, the Washington State Department of Health's (DOH) 2009 *Water System Design Manual* provides specific guidance for water system design. The design standards for the following elements are discussed in the order shown below.

GENERAL FACILITY STANDARDS

DOH relies on various publications, agencies, and the Water Company to establish design criteria. A brief description of the most widely recognized performance and design standards are listed as follows:

- **Chapter 246-290 WAC, Group A Public Water Systems, Washington State Board of Health (January 14, 2017).**
- **Chapter 246-290 WAC** is the primary drinking water regulation utilized by DOH to assess capacity, water quality, and compliance with drinking water standards.

- **Water System Design Manual (WSDM), Washington State Department of Health (December 2009).**

These design standards serve as guidance for the preparation of plans and specifications for Group A public water systems in compliance with Chapter 246-290 WAC.

- **Pierce County CWSP and PCC 19D.130, CWSP Minimum Standards and Specifications for Public Water System Planning, Design, and Construction.**
- **Recommended Standards for Water Works (RSWW), A Report of the Water Supply Committee of the Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (2012).**

Commonly known as the Ten States Standards, this document formalizes the design standards recommended by a water supply committee representing ten Midwestern and upper Great Lake States including the Province of Ontario. The first report of the Water Supply Committee was published in 1953; the most current edition was published in 2012. The report presents recommendations for both design and construction standards. However, the construction standards are somewhat general in nature with minor emphasis on materials specifications. Since surface water treatment is common in the Midwest and Upper Great Lakes, the Committee report tends to concentrate on water treatment plant design and operation.

Table 3.1 provides a summary of the minimum design standards for the Water Company's system. The table lists the current DOH *Water System Design Manual* guidance and the Water Company's policies with regard to each general facility requirement.

CONSTRUCTION STANDARDS

Construction standards set forth the materials and construction standards that contractors, developers, and the Water Company must follow when constructing water system facility improvements. The Water Company's *Development Standards for Water Main Extensions and Fire Hydrants* is included in Appendix E.

WATER QUALITY STANDARDS

Group A public community water systems must comply with the drinking water standards of the federal Safe Drinking Water Act and its amendments. The Washington State Department of Health adopted the federal standards under Chapter 246-290 WAC. Water quality results are included in Appendix F.

Table 3.2 lists existing drinking water regulations. The table also indicates whether or not the regulation requires the Water Company to conduct monitoring or take other action. Existing state law contains regulations concerning bacteriological contaminants, inorganic chemicals and inorganic physical parameters (IOC's), volatile organic chemicals (VOC's), synthetic organic chemicals (SOC's), radionuclides, and total trihalomethanes (TTHM's).

TABLE 3.1
Minimum Design Standards

Standard	DOH Water System Design Manual	Water Company Standard
Reliability Recommendations	<ul style="list-style-type: none"> • Sources capable of supplying MDD within an 18-hour period. • Sources meet ADD with largest source out of service. • Two or more sources capable of replenishing fire suppression storage within a 72-hour period. • Back-up power equipment for pump stations unless there are two independent public power sources. • Provision of multiple storage tanks. • Standby storage equivalent to ADD x 2, with a minimum of 200 gpd/ERU. • Looping of distribution mains when feasible. • Pipeline velocities not > 8 fps at PHD 	Same as DOH <i>Water System Design Manual</i> , except the minimum storage requirement shall be 270 gpd/ERU, which is equivalent to the ADD.
Valve and Hydrant Spacing	Sufficient valves should be placed to keep a minimum of customers out of service when water is turned off for maintenance or repair. Fire hydrants on laterals shall be provided with their own auxiliary gate valve.	Conforms to DOH <i>Water System Design Manual</i> . Water Company Standards outlined in the Development Standards and Standard Construction Details.
Average Day Demand (ADD)	Average Day Demand shall be determined from previous actual water use data.	Average Day Demand is determined from 2011-2016 data.
Maximum Day Demand (MDD)	Maximum Day Demand is estimated at approximately two times the ADD if metered data is not available.	Maximum Day Demand determined by examining peak day production for the last six years. An average peaking factor of 2.75 for average day to peak day demand was identified (see Table 2.10). Utilize conservative peaking factor of 3.1 per Table 2.11.
Peak Hour Demand (PHD)	Peak Hour Demand is determined using the following equation: Equation 5.1, Design Manual: $PHD = (MDD/1440)[(C)(N)+F] + 18$ C = Coefficient from DOH Table 5-1 (C=1.6) N = Number of connections, ERU's F = Coefficient from DOH Table 5-1 (F=225)	Conforms to DOH <i>Water System Design Manual</i> . Use Equation 5-1, Design Manual: $PHD = 0.933 N + 149$
Storage	The sum of: <ul style="list-style-type: none"> • Operational Storage • Equalizing Storage • Standby Storage Fire Suppression Storage nested in standby	Conforms to DOH <i>Water System Design Manual</i> . Refer to storage analysis in this Chapter.

TABLE 3.1
Minimum Design Standards (continued)

Minimum System Pressure	The system shall be designed to maintain a minimum of 30 psi in the distribution system during Peak Hour Demand and 20 psi under fire flow conditions during MDD.	Same as DOH <i>Water System Design Manual</i>
System Pipe Sizing	The minimum size for transmission distribution system line shall be determined by hydraulic analysis. The minimum size distribution system line shall not be less than 8 inches in diameter.	Minimum water main size shall be 6 inch diameter for looped lines; 8 inch diameter otherwise.
Pump Stations	<ul style="list-style-type: none"> • Open System: • Capacity meeting Maximum Day Demand. • Capacity meeting Average Day Demand with largest pump out of service. • Closed System: • Capacity meeting Peak Hourly Demand. 	Same as DOH <i>Water System Design Manual</i>

**TABLE 3.2
Existing Drinking Water Regulations**

Rule	Contaminants Affected	Water Company Action Required⁽¹⁾
Total Coliform Rule	Coliform	Monitor
Stages 1 to 2 Disinfectants/Disinfection By-Products Rule (DBPR)	TTHM's, HAA5, Chlorite, Bromate	None ⁽¹⁾
Residual Disinfectant	Total Free Chlorine	None ⁽¹⁾
Lead and Copper Rule	Lead, Copper	Monitor
Inorganic Chemicals, and Physical Parameter	IOC's	Monitor
Volatile and Synthetic Organic Compounds	VOC's, SOC's	Monitor
Surface Water Treatment Rule (SWTR)	Microbial Contaminants	None
Information Collection Rule	Bacteriological	None
Consumer Confidence Report	Reporting Only	Report
Radionuclides Rule	Gross Alpha	Monitor
Filter Backwash Recycling Rule	Bacteriological	None ⁽¹⁾
Interim Enhanced Surface Water Treatment Rule	Bacteriological	None ⁽¹⁾
Long Term 1 Enhanced Surface Water Treatment Rule	Bacteriological	None ⁽¹⁾
Arsenic Rule	Arsenic	Yes
Groundwater Rule	Bacteriological	Planning

(1) Water Company uses groundwater and does not disinfect or treat sources.

WATER QUALITY ANALYSIS

The US Environmental Protection Agency (EPA) sets drinking water standards for potable drinking water systems. The standards were originally established in the 1974 Safe Drinking Water Act (SDWA); the Act was amended in 1986 and 1996. The drinking water regulations have grown rapidly in number and complexity. The most significant increase in regulations is a result of the 1986 Amendments to the SDWA. These amendments specified 83 drinking water contaminants to be regulated by EPA and a schedule for adopting the new rules. In addition, the amendments require EPA to identify and regulate 25 additional contaminants every three years thereafter. The amendments also granted EPA additional authority to enforce drinking water regulations.

The standards are made up of the National Primary Drinking Water Regulations and the National Secondary Drinking Water Regulations. The Primary Standards set levels of contaminants that may pose health risk when present in drinking water supplies and are known or anticipated to occur in public water systems. The Primary Standards contaminants are divided into Microorganisms, Inorganic Chemicals, Organic Chemicals and Radionuclides. The Secondary Standards are non-enforceable guidelines that establish recommendations for contaminants that may cause cosmetic effects such as skin or tooth discoloration and aesthetic effects such as taste, odor and color.

The SWDA also gives EPA the authority to delegate primary enforcement responsibilities to the individual states. A state must adopt drinking water regulations at least as stringent as the federal standards for SWDA compliance. DOH has been given the authority to enforce drinking water regulations in Washington State. The state regulations are contained in Title 246 of the Washington Administrative Code.

Prior to the increase in drinking water regulations, virtually all of the drinking water standards applied only at the source, and required only occasional sampling. Historically, it was believed that the major threats to drinking water quality were at the source, and if satisfactory tests were conducted in source water, the quality was assured for the customer. For most of the new drinking water regulations sampling is still required at the source. However, several recently developed, and anticipated future, regulations focus on changes in drinking water quality occurring with the distribution system from such factors as corrosion, bacterial growth and reactions between chlorine and natural organics. These regulations include the Coliform Rule, Surface Water Treatment Rule, Lead and Copper Rule and the Disinfection Byproducts Rule.

WATER QUALITY MONITORING SCHEDULE

Water quality monitoring is required for regulatory compliance and to monitor water system conditions. DOH provides guidelines for inorganic and organic monitoring under 246-290-300 WAC, Monitoring Requirements, in which each system is required to prepare a Monitoring Plan that will define monitoring schedules and sample locations. Table 3.3 lists water quality monitoring required by State law. Water quality monitoring requirements for VOC's and SOC's depend, in part, on the availability of monitoring waivers from DOH.

The Water Company routinely has its source water tested to ensure compliance with these regulations. This section provides analyses of the Water Company's water quality and the system's ability to meet existing and future demands. The Water Company's compliance with water quality and facility design standards is examined, as set forth in the previous section. At the conclusion of the analysis, system deficiencies are identified.

**TABLE 3.3
Water Quality Monitoring**

Parameter	Sample Location	Frequency	Consequence of Exceeding Standard
Bacteriological	Distribution System	10 per Month	Follow-up and Repeat Sampling – Imposition of Required Disinfection for Continuing to Exceed Standard
Inorganic's	Source	Every 3 Years	Possible Required Treatment
Nitrates	Source	Annually	Follow-up and Repeat Quarterly Sampling
VOC's	Source	Every 3 Years	Possible Required Treatment
SOC's	Source	Every 3 Years	Possible Required Treatment
Lead and Copper	Distribution System	20 Samples Every 3 Years	Possible Required Treatment
Radionuclides	Source	Per DOH Instructions	Possible Required Treatment

WATER QUALITY MONITORING RESULTS

Bacteriological

The Water Company monitors for bacteriological contaminants in accordance with its Coliform Monitoring Plan included in Appendix G. According to current population levels, the Water Company is currently required to collect 10 monthly routine bacteriological samples. Requirements for routine monthly bacteriologic sampling are detailed in Chapter 246-290-300 WAC according to water service population.

Inorganic Chemicals and Physical Characteristics

Existing State law contains maximum contaminant levels (MCL's) for inorganic chemical and physical characteristics, as summarized in Appendix F. Primary MCL's are based on health effects, and secondary MCL's are based on other factors, including aesthetics. Sampling for inorganics is required every three years, under Chapter 246-290 WAC. The latest Inorganic sampling results from the Water Company are summarized in Table 3.4. Copies of the inorganic reporting forms are included in Appendix F.

**TABLE 3.4
Inorganic Chemical and Physical Characteristic Monitoring Results**

Parameter ⁽¹⁾	MCL	Well 1R 7-28-16	Well 5 10-7-13	Well 6 9-15-09	Well 7 8-20-07	Well 8 7-31-10	Wells 9 & 11 8-29-15
Arsenic (mg/l)	0.01	0.001	0.003	<0.002	<0.002	<0.002	<0.001
Iron (mg/l)	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Manganese (mg/l)	0.05	<0.01	0.06	<0.01	<0.01	<0.01	<0.01
Sodium (mg/l)	None Established	7	6	7	8	7	8
Hardness (mg/l)	None Established	82 as CaCO ₃	74 as CaCO ₃	99 as CaCO ₃	94 as CaCO ₃	81 as CaCO ₃	105 as CaCO ₃
Turbidity (NTU)	None Established	0.3	2.8	0.7	0.3	0.3 NTU	<0.1
Chloride (mg/l)	250	6	3	6	7	6	7

(1) Parameters including antimony, barium, beryllium, cadmium, chromium, mercury, nickel, selenium, silver, thalium, zinc, cyanide, fluoride and nitrite were undetected in all wells.

Sampling for nitrates is required annually. The results of Water Company's nitrate sampling for the last three years are summarized in Table 3.5. The MCL for Nitrate is 10 mg/L. Copies of the nitrate reporting forms are included in Appendix F.

**TABLE 3.5
Nitrate Sampling Results (mg/L)**

Year	MCL	Well 1R	Well 5	Well 6	Well 7	Well 8	Wells 9 & 11
2014	10	2.4	Off Line	1.6	Off Line	2.4	3.3
2015	10	2.1	<0.2	1.6	3.5	2.1	3.4
2016	10	2.3	Off Line	1.6	Off Line	1.9	3.5

Volatile Organic Chemicals and Synthetic Organic Chemicals

The State has adopted primary MCL's for a broad class of manufactured organic chemicals. These chemicals are further divided into volatile organic chemicals (VOC's) and synthetic organic chemicals (SOC's). The regulations and monitoring requirements for these chemicals have been established by EPA as listed in Chapter 40 of the Code of Federal Regulations (CFR), Part 141. All VOC's and SOC's monitored by the Water Company from 2009 through 2016 were undetectable in

the Water Company’s wells. A list of these compounds and the results of the sampling are included in Appendix F.

Disinfection By-Products

The Water Company is not required to monitor for Trihalomethanes since the system is unchlorinated.

Lead and Copper

Lead and copper rule compliance is measured by comparing the 90th percentile sample to lead and copper ‘action levels’. The Water Company is required take samples every 3 years. As shown in the Table 3.6, the Water Company is in compliance with the action level for both lead and copper for the samples collected and analyzed in 2015.

**TABLE 3.6
2015 Lead and Copper Monitoring Results**

	Lead	Copper
Action Level, mg/L	0.015	1.3
Number of Samples Taken	20	20
Highest Level, mg/L	0.007	0.56
Number of Samples Exceeding Action Level	0	0

Radionuclides

Radionuclide test results are summarized in Table 3.7.

**TABLE 3.7
Radionuclide Data Summary**

Well	Date	Gross Alpha (pCi/l)	Date	Radium 228 (pCi/l)
1R	7-27-16	ND	7-27-16	ND
5	9-9-10	ND	7-28-10	ND
6	9-22-15	ND	9-22-15	ND
7	9-22-15	ND	9-22-15	ND
8	9-22-15	ND	9-22-15	ND
9 & 11	7-19-11	ND	7-19-11	ND

SYSTEM ANALYSIS

SOURCE OF SUPPLY ANALYSIS

According to current Department of Health Group A Water Systems standards, source production capacity must be sufficient to supply maximum day demands. In addition, maximum day and average daily demands must comply with the maximum instantaneous and maximum annual withdrawal limitations of associated water rights.

EXISTING WATER RIGHTS

All appropriations of water for public use within Washington State must be made in accordance with existing water rights and the established procedures that govern their implementation and use. The Water Company's existing water rights, including maximum instantaneous and total annual withdrawal limitations, are summarized in Table 3.8. Also shown are the nominal pumping capacities and the 2016 production totals for the Water Company's active wells.

The Water Company and all of its water rights meet the definitions of "municipal water supplier" and "municipal water supply purposes" at Chapter 90.03.015 RCW. Superseding certificates have already been issued for the Water Company's water rights, designating them as for "municipal supply" purposes and providing a place of use consistent with the Water Company's service area described in its March 2005 Water System Plan. Because of the superseding certificates issued in 2005, the Water Company does not need to request conforming certificates under Chapter 90.03.560 RCW. The place of use of its water rights will change consistent with the service area designations in this Plan, as stated in Chapter 90.03.386 RCW.

The official water rights records for the Water Company demonstrate several inconsistencies and errors over several decades of applications and decisions, some of which affect how the water rights are interpreted. To resolve these inconsistencies and errors, the Water Company hired water rights attorney Thomas M. Pors to review the water rights documents and prepare an interpretation of water rights for this Water System Plan update.

Summary of Issues Regarding Water Rights: The Water Company has been issued 9 separate water rights by the Washington State Department of Ecology, or its predecessor agencies, over a period of 60 years. There are several inconsistencies in interpretation and application of the water rights permitting statutes in these decisions, which is not uncommon considering the change in personnel and succession of agencies that have been responsible for water rights administration over this period. There has also been an evolution of policy and interpretation of water law as it applies to municipal water rights over the same period of time. Along with the natural inconsistencies that occur with new state personnel and evolving policies, there were errors made in some of these water right decisions, which were perpetuated in subsequent decisions, compounding the errors as they went along. In an effort to prevent the further perpetuation of errors in the Water Company's rights, water rights attorney Thomas M. Pors was hired to review and interpret the water rights for this water system plan update. The critical number of the maximum annual quantity of water rights did not change from the most recent decisions of the Department of Ecology; however, the interpretation of primary and supplemental rights of individual water rights did change, as described below. It is fairly clear that Ecology intended to grant no more than 1,776 acre-feet per year of water rights for

the total system based on the demand forecasted by the Water Company at the time of the last three applications and permit decisions.

Analysis of Water Rights: The Water Company's water rights were analyzed in historical order from the first to the last. This is the best way to discern the intent of the applicant and the State.

Permit 3970 -- Hendrick Springs. This water right was never developed and its quantities do not affect the system-wide annual quantity (Qa) in decisions for Wells 1 through 9. Documents could not be located for this right. It has most likely been relinquished through failure of due diligence, or abandoned.

Certificate 2335 -- Dechaux Springs, priority date September 20, 1944: This is a primary right for 0.45 cfs (202.5 gpm), 327 annual acre-feet (AFY). The point of diversion of this water right (SW1/4, SW1/4, Sec. 15, T20N, R4E) was developed as Wells 1R and 8, described below. The total annual quantity (Qa) of water rights as of 1945 was 327 AFY.

Certificate 1749 -- Well 1, priority date July 14, 1953: This is a primary (additive) right for 345 AFY and a supplemental right for 327 AFY due to a limitation in the permit, which provides "The total withdrawal authorized under this filing shall not exceed 672 acre-feet per year, less any quantity available from the Hendrick and Dechaux Springs." . In other words, to the extent Dechaux Springs is not used, this allows additional Qa up to a total of 672 AFY. A replacement well, Well 1R, was drilled at this site in February 1999. The total system Qa as of 1953 was 672 AFY.

Certificate 5043A -- Well 3, priority date August 31, 1962: This right is analyzed before Well 2 because it has an earlier priority date and was decided first. This is a new primary (additive) right for 560 AFY. The permit and certificate create some confusion, however, by discussing a total system limitation of 1,334 AFY. The total system Qa could not increase to 1334 with this water right because of well limitations to 350 gpm and 560 AFY. (You can't add more water right than you can put to beneficial use.) Ecology's later interpretations of this water right equaling 1000 gpm and 1344 AFY were erroneously based on the permit quantities, not the ultimate beneficial use of water, which was limited by pump capacity and the certificate. Ultimately, however, the total Qa numbers evened out in later decisions. Therefore, as of 1962, the total system Qa was 1,232 AFY (672 existing plus 560 new).

Certificate 5020A -- Well 2, priority date January 27, 1964: This is described by Ecology as a supplemental right for 150 gpm and 240 AFY, however based on the total Qa limitation of 1,344 AFY in all documents pertaining to this water right, the proper interpretation is a supplemental (non-additive) right for 128 AFY and a primary (additive) right for 112 AFY. Ultimately, these distinctions are relatively meaningless because later decisions reviewed these early water rights as a group. The report of examination and permit for this water right describe the right as supplemental to previous rights up to a total Qa of 1,344 AFY, however these documents assume that Permit 6085 (same right as Certificate 5043A) was being developed at 1000 gpm when in fact it was only developed at 350 gpm. The appropriate interpretation is that the total primary Qa of all existing rights including this one was 1,344 AFY, which would make 128 AFY of this right supplemental (non-additive) and 112 AFY primary (additive). Therefore, as of 1964, the total system Qa was 1,344 AFY (1232 AFY existing and 112 AFY new).

Certificate 7414A -- Well 5, priority date February 24, 1969: This is a supplemental (non-additive) water right for 390 gpm, 570 AFY. The intention to limit this right as supplemental in the permit and report of examination is clear and not subject to reinterpretation. It should be noted that Ecology changed the methodology in this report of examination for determining the Water Company's future demand, decreasing the per capita allowance from 200 gpcd (gallons per day per capita) to gpcd. The language in the permit and report of examination to the effect that the Water Company's demand requirement is only 896 AFY is of no effect on earlier-issued water rights, which were perfected or inchoate rights in good standing. Therefore, as of 1969, the total system Qa was still 1,334 AFY.

Certificate G2-24329C -- Well 6, priority date October 19, 1976: This is a supplemental (non-additive) right for 250 gpm, 375 AFY. The intention to limit this right as supplemental in the certificate, permit and report of examination is clear and not subject to reinterpretation. The language in the permit and report of examination to the effect that the Water Company's demand requirement is 1120 AFY is of no effect on earlier-issued water rights, which were perfected or inchoate rights in good standing. Therefore, as of 1976, the total system Qa was still 1,344 AFY.

Certificate G2-26097C -- Well 7, priority date February 26, 1982: This is a right for 1,200 gpm, 1776 AFY, of which 432 AFY is new primary (additive) rights (not 550 AFY as it says in the certificate), and 1344 AFY is supplemental (non-additive). The difference between 550 and 432 AFY of primary rights is based on a different interpretation than Ecology's about the quantity of primary (additive) water rights that were already granted to the Water Company in prior decisions. What apparently happened during processing of the application is that Ecology assumed, based on an August 1, 1982 status report, that the Water Company possessed only 672 AFY of primary (additive) Qa prior to the Well 7 and 8 decisions. Ecology determined that the Water Company needed an additional 1,104 AFY of primary (additive) rights to meet its calculated growth demand of 1,776 AFY, and split it between the Well 7 and 8 permits, 550 AFY of primary (additive) rights going to Well 7 and 554 AFY of primary (additive) rights going to Well 8. In both decisions, however, the paramount consideration is the total system Qa needed for the Water Company's future demand, calculated at 1,776 AFY as the amount needed to serve 3,700 connections by year 2000. The conclusion of the report of examination that prior rights through Well 6 equaled only 672 AFY is clearly erroneous, as demonstrated by the interpretation of the water rights above. Specifically, the report of examination ignored the addition of primary (additive) rights in permits/certificates for Wells 2 and 3. The language in the certificate, permit and report of examination limiting total system Qa to 1,776 AFY is clear, however, and not subject to reinterpretation. Language limiting the quantity to 3,700 connections is not an enforceable limitation after the 2003 passage of HB 1338. (See RCW 90.03.260(4).) Therefore, as of 1982, the total system Qa was 1,776 AFY.

Certificate G2-26160C -- Well 8/Well 1, priority date June 2, 1982: This is a supplemental water right for 750 gpm, 554 AFY. It does not increase the total primary (additive) system Qa above 1,776 AFY despite language in the permit and certificate that the 554 AFY is a primary right, because the language in the certificate, permit and report of examination limiting total system Qa to 1,776 AFY is clear and not subject to reinterpretation. See explanation regarding Well 7, above. Therefore, as of 1982, the total system Qa was 1,776 AFY.

Permit G2-26657P -- Well 9, priority date February 28, 1985: This water right is still in the permit stage, with a development schedule through February 1, 2014, for 1,000 gpm, 800 AFY supplemental (non-additive) to existing rights. The report of examination and permit for this water right contain expressions of a supplemental (non-additive) limitation, and as of the 1985 issue date, the total system Qa was still 1,776 AFY. The Water Company's wells are all currently in compliance with the maximum annual withdrawal volume of associated water rights as well. Therefore, the total maximum annual withdrawal of existing water rights totals 1,776 acre-ft per year as shown in Table 3.8.

TABLE 3.8
Existing Water Rights

Wells	Source	Permit or Certificate	Priority Date	Primary or Supplemental	Existing Water Rights		Well Pumping Capacity (gpm)	2016 Production (acre-ft)
					Maximum Instantaneous Flow (gpm)	Maximum Annual Volume (af/year) Primary/ Supplemental		
Dechaux Springs	(1)	2335	9-20-44	Primary	202.5	327	See Wells 1R & 8	See Wells 1R & 8
1R	S10	1749	7-14-53	Primary/Supp	500	345/327	1000	247.30
2	S03	5020	1-27-64	Primary	150	112/128	35	0
3 (2)	S04	5043	8-31-62	Primary	350	560	0	0
5	S05	7414	2-24-69	Supplemental	390	570	370	0
6	S06	G2-24329	10-19-76	Supplemental	250	375	200	72.78
7 (2)	S07	G2-26097 (3)	2-26-82	Primary/Supp	1200	432/1344	240	1.73
8	S08	G2-26160	6-2-82	Supplemental	750	554	350	93.74
9	S09	G2-26657 (4)	2-28-85	Supplemental	1000	800	500	340.02
11	S11	G2-26657	2-28-85	Supplemental	1000	800	1000	213.82
TOTAL					4,792.5	1,776	3,660	969.39
					2036 Production Volume			1,638

- (1) Wells 1R and 8 are at the origin point of withdrawal of Dechaux Springs and produce water under rights supplemental to Certificate #2335
- (2) Wells 3 and 7 are emergency sources due to the need to eliminate corrosion control treatment.
- (3) Wells 9 and 11 added as additional point of withdrawal to this certificate by a showing of compliance filed in 2009.
- (4) Well 11 added as additional point of withdrawal to this permit by a showing of compliance filed in 2009.

Average Day Demand

The Water Company's existing water rights allow an annual withdrawal of 1,776 acre feet. The source design data developed in Chapter 2 determined an average day demand of 270 gpd per ERU, which is equivalent to 0.302 acre-feet/year per ERU. The water rights have a maximum service capacity of 5,880 ERU's based on this value and the annual withdrawal limit.

The Water Company currently has one seasonal intertie with the City of Milton. The amount of water sold through the intertie over the last six years is shown in Table 2.6. The only time the intertie was utilized was in the summer of 2009 which was abnormally hot for several days. Water is sold to Milton on an as needed basis with an instantaneous demand limit of 500 gpm.

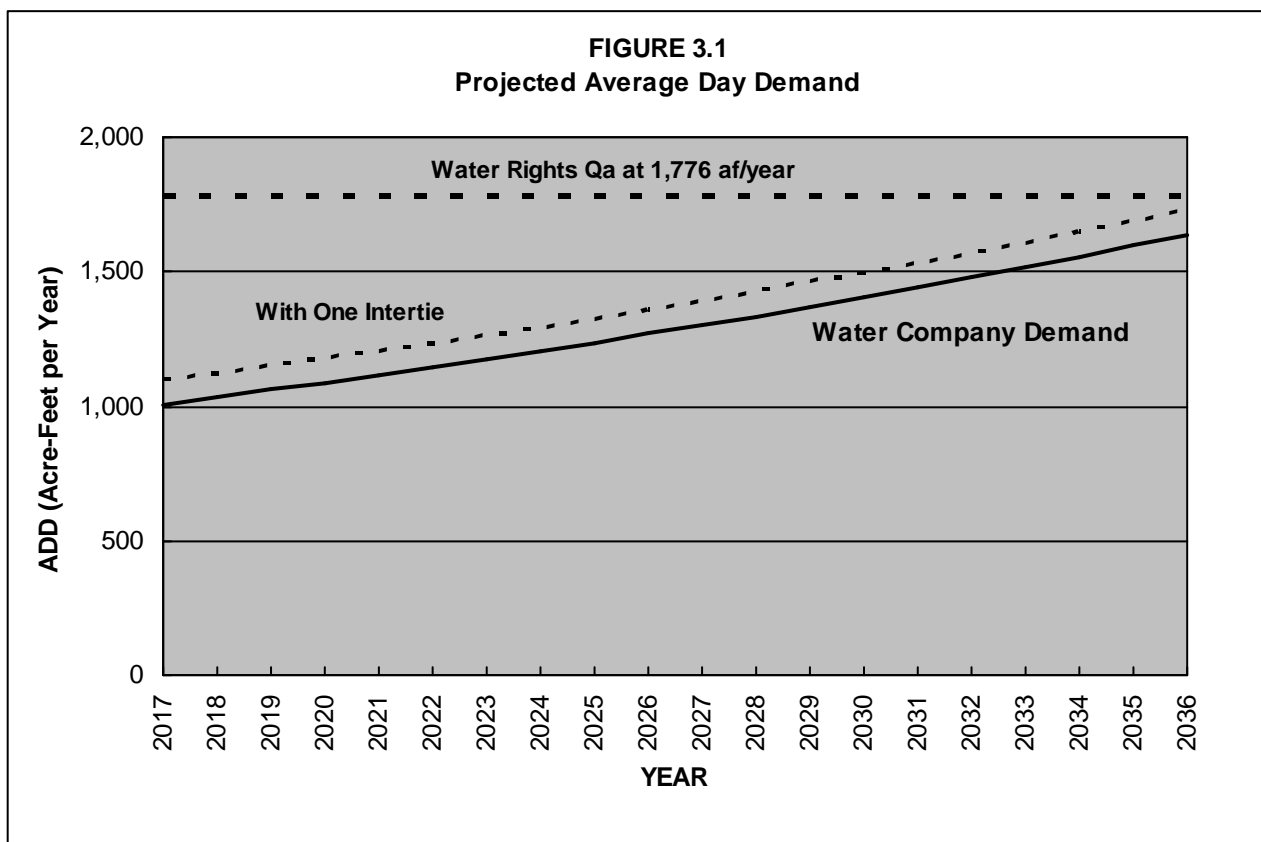
Shown in Table 3.9 is a summary of the projected average day demand over the next 20 years. Two sets of demand values are shown:

- The Average Day Demand for the Water Company’s retail customers plus one wholesale service representing the tanker truck fill point at the shop.
- The Average Day Demand as described above plus one seasonal intertie with an assumed total annual demand of 30 million gallons. This demand would normally occur during the July through August period.

Figure 3.1 provides a comparison of the Water Company’s projected water demands in relation to its existing Water Rights. The graph shows the Water Company has sufficient water rights to satisfy the projected Average Day Demand through this 20 year planning period. Therefore, the water rights for the Water Company can satisfy the Average Day Demand at least until the year 2036.

TABLE 3.9
Projected Average Day Demand

	ERU’s	Water Company Internal ADD (acre-foot/year)	ADD with One Intertie (acre-foot/year)
2017	3,334	1,007	1,099
2018	3,420	1,033	1,125
2019	3,509	1,060	1,152
2020	3,600	1,087	1,179
2021	3,694	1,116	1,208
2022	3,790	1,145	1,237
2023	3,889	1,175	1,267
2024	3,986	1,204	1,296
2025	4,090	1,235	1,327
2026	4,197	1,268	1,360
2031	4,771	1,441	1,533
2036	5,424	1,638	1,730



Maximum Day Demand

The Water Company’s existing water rights allow a maximum instantaneous withdrawal of 4,792.5 gpm; the existing well pumps are capable of delivering 3,660 gpm. Summarized in Table 3.10 are the projected future Maximum Day Demands on the system. Two sets of demand values are shown:

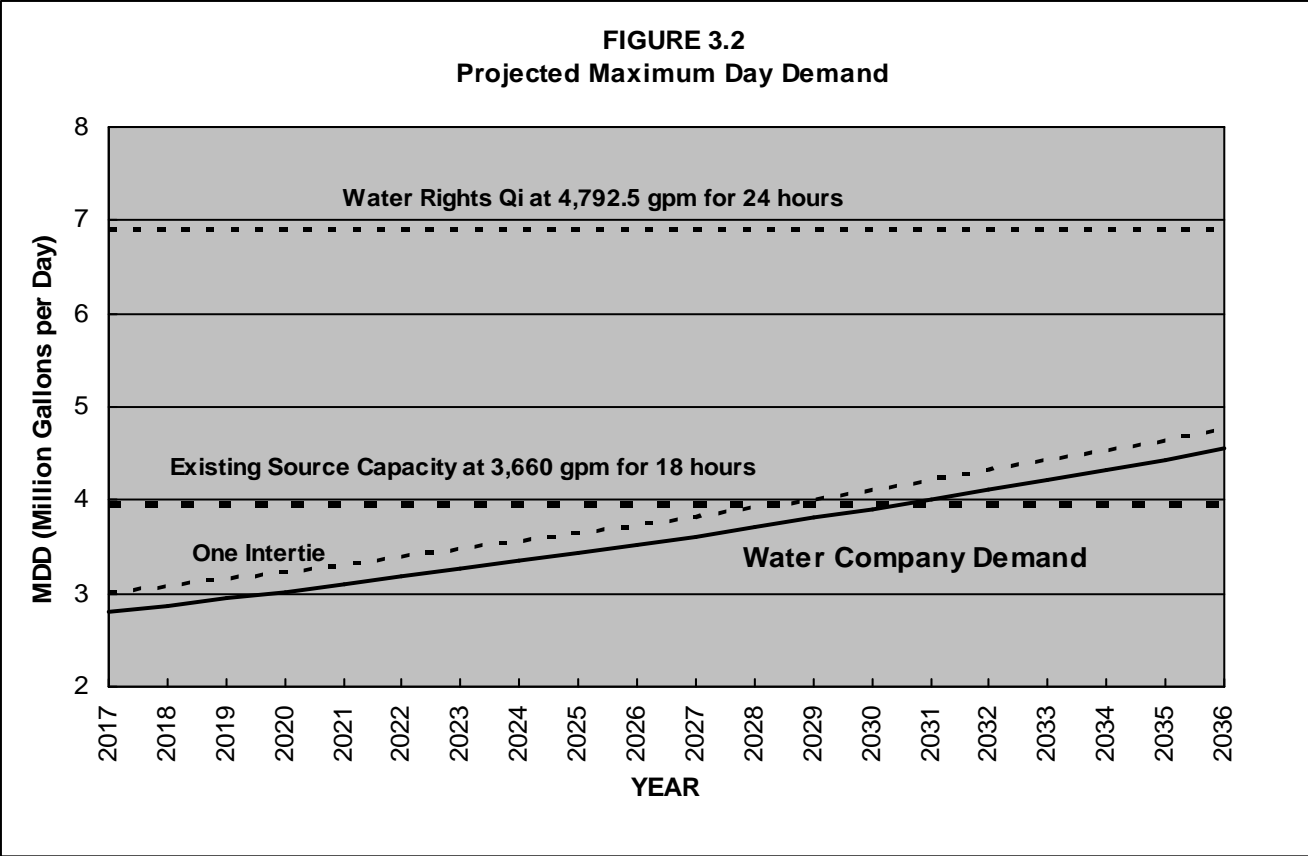
- The Maximum Day Demand for the Water Company’s retail customers plus one wholesale service representing the tanker truck fill point at the shop.
- The Maximum Day Demand as described above plus the supply to one seasonal intertie at an average rate of 500 gpm for 14 hours.

Also shown in the table is the projected ERU value for the given year and the available existing source capacity assuming 18 hours maximum pumping time. This data is shown graphically in Figure 3.2. The graph shows the existing wells can satisfy the Maximum Day Demand for the internal Water Company customers until approximately the year 2032. The limiting ERU value for the current source pumping capacity is 4,670. The graph also shows the time frame for achieving source capacity is shortened by approximately five years if the intertie is operated under the assumed service conditions. It is important to note that the data presented assumes a 2.60 percent annual service connection growth rate and only 18 hours of pump operation time. Also shown on the graph is the source capacity based on the water rights maximum instantaneous withdrawal rate of 4,792.5 gpm. Full development of the water rights will easily allow the Water Company to meet future

demands beyond this 20 year planning period. The water rights can satisfy the Maximum Day Demand for approximately 6,161 ERU's based on 840 gpd per ERU, assuming no seasonal interties are being supplied. However, the existing pumping capacity of the well sources will reach their supply limits near the year 2030. This value discusses 18 hour operation. The water right can satisfy the Maximum Day Demand for approximately 8,215 ERU's assuming 24 hour pumping.

**TABLE 3.10
Projected Maximum Day Demand**

	ERU's	Water Company Internal MDD (gpd)	MDD with One Intertie (gpd)
2017	3,334	2,801,000	3,011,000
2018	3,420	2,873,000	3,083,000
2019	3,509	2,948,000	3,158,000
2020	3,600	3,024,000	3,234,000
2021	3,694	3,103,000	3,313,000
2022	3,790	3,184,000	3,394,000
2023	3,889	3,267,000	3,477,000
2024	3,986	3,348,000	3,558,000
2025	4,090	3,436,000	3,646,000
2026	4,197	3,525,000	3,735,000
2031	4,771	4,008,000	4,218,000
2036	5,424	4,556,000	4,766,000



STORAGE ANALYSIS

Storage requirements for the Water Company are established in the Department of Health’s Water System Design Manual, December 2009. The storage requirements are based on the sum of the following:

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

Operational Storage

Operational storage is typically the normal operating range in which the tanks are operated. The top six feet of the reservoir are currently used for this operation.

Equalizing Storage

Equalizing storage is used to meet diurnal demands that exceed the average daily and peak day demands. The volume of equalizing storage required depends on peak system demands, the magnitude of diurnal water system demand variations, the source production rate, and the mode of system operation. Sufficient equalizing storage must be provided in combination with available water sources and pumping facilities such that peak system demands can be satisfied. Equalizing storage is calculated using the following equation:

$$V_{ES} = (Q_{PH} - Q_S) 150 \text{ minutes}$$

$$V_{ES} = \text{Equalizing storage component (gallons)}$$

$$Q_{PH} = \text{Peak Hourly Demand (gpm)}$$

$$Q_S = \text{Total source of supply capacity, excluding emergency sources (gpm)}$$

The equalizing storage required for the Water Company is summarized in Table 3.11. Peak Hour Demands are presented in Table 2.12.

Standby Storage

Standby storage is provided in order to meet demands in the event of a system failure such as a power outage, an interruption of supply, or break in a major transmission line. The amount of emergency storage should be based on the reliability of supply and pumping equipment, standby power sources, and the anticipated length of time the system could be out of service.

Standby storage is calculated using the following equation:

$$V_{SB} = 2(ADD) - 1440 \text{ minutes (Q's)}$$

$$V_{SB} = \text{Required standby storage component (gallons)}$$

$$ADD = \text{Average Daily Demand for the design year (gallons)}$$

$$Q's = \text{Total source of supply capacity, with the largest source out of service (gpm) In no case, however, shall the standby storage volume be less than the following:}$$

$$V_{SB} = 270 \text{ gallons times the number of approved residential connections, plus the average daily demand of all other users on the system}$$

Standby storage calculations are based on the assumption that adequate source capacity will be developed to meet average daily demands with the largest source out of service. Therefore, for the purposes of this analysis, projected average daily demands are used to estimate the total source of supply capacity with the largest source out of service. In all cases, the calculated standby storage must exceed the minimum requirement of 270 times the number of residential connections, plus the average daily demand of all other users on the system. Standby storage requirements are summarized in Table 3.11.

Fire Suppression Storage

Fire suppression storage is provided to ensure that the volume of water required for fighting fires is available when necessary. Fire suppression storage also reduces the impact of fire fighting on distribution system water pressure. The amount of water required for firefighting purposes is specified in terms of rate of flow in gallons per minute and an associated duration. Fire flows must be provided at a residual water system pressure of at least 20 psi.

Fire suppression storage is calculated using the following equation:

$$V_{\text{FSS}} = \text{NFF} * T$$

V_{FSS} = Required fire suppression storage component (gallons)

NFF = Needed fire flow (gpm)

T = Duration (minutes)

The City of Edgewood has indicated that peak fire flow requirement of 1,500 gpm for 120-minute duration is appropriate for the residential areas within the Water Company's service area. Higher demands are required in the commercial areas. A value of 2,500 gpm for a 120-minute duration was used. The associated fire suppression storage requirement is presented in Table 3.11. Effective volume is equal to the total volume less any dead storage built into the reservoir.

Dead Storage

Storage is considered to be "dead storage" when it is below that water surface elevation where pressure fails to meet minimum DOH standards. Dead storage is the amount of storage required to maintain minimum pressures within the distribution system. For the Peak Hour Demand, the system must maintain a minimum pressure of 30 psi at all times except during a fire flow event. The system must maintain a minimum pressure of 20 psi at all times, even at the end of a fire flow event.

The South Reservoirs have a dead storage requirement to maintain a minimum pressure of 20 psi; 34 feet of water must remain in the tanks to satisfy this pressure requirement.

Summary

Table 3.11 compares the existing effective volume of the reservoirs with the projected Water Company's volume requirements. The table provides the available and necessary storage required for the Water Company. This table assumes the Water Company is not supplying any inerties. The Water Company has sufficient storage to meet the requirements until about the year 2023.

**TABLE 3.11
Storage Capacity Analysis with No Inerties**

Year	Storage Components (gallons)						Available Storage (gallons)	Storage Surplus/ (Deficit) (gallons)
	Operational	Equalizing	Standby	Fire Flow ⁽¹⁾	Dead	Total		
2017	122,380	0	900,180	300,000	953,075	1,975,635	2,181,280	205,645
2018	122,380	0	923,400	300,000	953,075	1,988,885	2,181,280	182,425
2019	122,380	0	947,430	300,000	953,075	2,022,885	2,181,280	158,395
2020	122,380	0	972,000	300,000	953,075	2,047,455	2,181,280	133,825
2021	122,380	0	977,380	300,000	953,075	2,072,835	2,181,280	108,445
2022	122,380	4,050	1,023,300	300,000	953,075	2,102,805	2,181,280	78,475
2023	122,380	17,850	1,050,030	300,000	953,075	2,143,335	2,181,280	37,945
2024	122,380	31,500	1,076,220	300,000	953,075	2,183,175	2,181,280	-1,895
2025	122,380	46,050	1,104,300	300,000	953,075	2,225,805	2,181,280	-44,525
2026	122,380	60,900	1,133,190	300,000	953,075	2,269,545	2,181,280	-88,265
2031	122,380	141,300	1,288,170	300,000	953,075	2,504,925	2,181,280	-323,645
2036	122,380	232,800	1,464,480	300,000	953,075	2,772,735	2,181,280	-591,455

(1) Fire flow storage is nested in the standby storage.

Table 3.12 itemizes the storage requirements assuming the supply one intertie with a maximum instantaneous demand of 500 gpm. The analysis shows the system is storage deficient near the year 2022.

**TABLE 3.12
Storage Capacity Analysis with One Inertie**

Year	Storage Components (gallons)						Available Storage (gallons)	Storage Surplus/ (Deficit) (gallons)
	Operational	Equalizing	Standby	Fire Flow ⁽¹⁾	Dead	Total		
2017	122,380	15,150	900,180	300,000	953,075	1,990,785	2,181,280	190,495
2018	122,380	27,150	923,400	300,000	953,075	2,026,005	2,181,280	155,275
2019	122,380	39,600	947,430	300,000	953,075	2,062,485	2,181,280	118,795
2020	122,380	52,350	972,000	300,000	953,075	2,099,805	2,181,280	81,475
2021	122,380	65,550	997,380	300,000	953,075	2,138,385	2,181,280	42,895
2022	122,380	79,050	1,023,300	300,000	953,075	2,177,805	2,181,280	3,475
2023	122,380	92,850	1,050,030	300,000	953,075	2,218,335	2,181,280	-37,055
2024	122,380	106,500	1,076,220	300,000	953,075	2,258,175	2,181,280	-76,895
2025	122,380	121,050	1,104,300	300,000	953,075	2,300,805	2,181,280	-119,525
2026	122,380	135,900	1,133,190	300,000	953,075	2,344,545	2,181,280	-163,265
2031	122,380	216,300	1,288,170	300,000	953,075	2,579,925	2,181,280	-398,645
2036	122,380	307,800	1,464,480	300,000	953,075	2,847,735	2,181,280	-666,455

(1) Fire flow storage is nested in the standby storage.

Booster Pump Stations

An analysis of the system booster pump stations is presented in Tables 3.13 through 3.14. The analysis ensures each station has sufficient capacity to meet the required demands. The required capacity is different for those stations pumping to an open system versus those pumping to a closed system. An open system is a pressure zone governed by an atmospheric tank. The station must be capable of meeting the Maximum Day Demand (MDD) with all pumps in service, and must meet the Average Day Demand (ADD) assuming the largest pump is out of service. A closed system is a pressure zone closed to the atmosphere where the station is relied on to maintain the zone pressure. The station must be able to satisfy the Peak Hour Demand (PHD). It should be assumed that the largest pump is out of service for reliability purposes.

The analysis indicates the existing stations are adequate for the planning period.

TABLE 3.13
North Reservoir Booster Pump Station Analysis (1)

Parameter	2017	2022	2027	2032	2037
ADD (gpm)	210	245	265	280	310
MDD (gpm)	610	710	780	830	900
Station Capacity (gpm)	1,500	1,500	1,500	1,500	1,500
Capacity without Largest Pump (gpm)	900	900	900	900	900
Satisfies ADD	Yes	Yes	Yes	Yes	Yes
Satisfies MDD	Yes	Yes	Yes	Yes	Yes

(1) Open System

TABLE 3.14
South Reservoir Booster Pump Station Analysis (1)

Parameter	2017	2022	2027	2032	2037
ADD (gpm)	14	16	18	22	26
MDD (gpm)	40	47	52	58	65
PHD (gpm)	129	146	157	172	185
Station Capacity (gpm)	918	918	918	918	918
Capacity without Largest Pump (gpm)	488	488	488	488	488
Satisfies ADD	Yes	Yes	Yes	Yes	Yes
Satisfies MDD	Yes	Yes	Yes	Yes	Yes
Satisfies PHD	Yes	Yes	Yes	Yes	Yes

(1) Open System

DISTRIBUTION SYSTEM ANALYSIS

The existing water system was analyzed using the Bentley WaterCad hydraulic modeling program to identify areas of the distribution system, which are deficient in flow and pressure.

Hydraulic Capacity Analysis – Modeling Model Input

In order to create a realistic representation of the Water Company's water system, the model was created using the water system as-built plans. A map detailing existing pipes and nodes for the Water Company's water system is provided as Figure 3.3 and can be found in the back pocket.

System demands were based on the year 2027 production data projections, and were evenly distributed among the nodes throughout the service area. The Water Company's large water users make up only approximately 5 percent of the total consumption and therefore do not place significant demands on a particular node in the system. Maximum Day and Peak Hour demands were based on the design criteria developed in Chapter 2.

Maximum Day and Peak Hour Demands

According to Department of Health standards, a water system must maintain a minimum system pressure of 30 psi in the distribution system under Peak Hour Demand conditions at the point that equalizing storage is depleted. The Water Company's distribution system was modeled under 2027 peak hour demand conditions and system pressures were examined. No nodes in the system were found to have pressures below 30 psi under these conditions.

Appendix H includes a copy of the output data for the Maximum Day and Peak Hour Demand scenario.

Available Fire Flows

Fire flow requirements for the Water Company are in accordance with those established by the City of Edgewood. The City requires minimum fire flows of 2,500 gpm for 120 minutes for commercial developments and 1,500 gpm for 120 minutes for residential developments. The current DOH Waterworks Standards state that new or expanding water systems must be able to maintain a minimum pressure of 20 psi throughout the system during maximum day demand conditions with a fire flow or the point that fire flow storage is depleted.

The existing system was modeled under 2027 Maximum Day Demands plus fire flow. The levels in the existing reservoirs were drawn down to the bottom of fire flow and standby storage to represent fire flow conditions. The full fire flow results can be found in Appendix H.

The model indicated the system can satisfy the minimum fire demand requirement of 2,500 gpm at many locations while maintaining a minimum residual pressure of 20 psi.

However, there are numerous locations where the given fire flow cannot be met. These low flow nodes were typically supplied by 4 and 6 inch diameter mains and/or dead-end mains. The Water Company has several projects planned to replace some of the mains. Those projects are listed in Chapter 8.

Analysis Summary

Water Rights: The Water Company has sufficient water rights to serve 5,880 ERU's with the annual withdrawal rate of 1,776 acre-feet being the limiting factor.

Source Capacity: The Water Company's existing sources can serve approximately 4,670 ERU's based on their current pumping capacity. That number will be reduced if water will be sold to neighboring communities through interties. Increases in the pump capacities at a few stations will be necessary for system growth beyond this value.

Storage Capacity: The existing reservoirs have adequate storage capacity 3,981 ERU's. The use of seasonal interties would reduce the storage capacity to 3,800 ERU's. The storage facilities will not provide sufficient volume within five to six years at the current system growth rate. An additional reservoir will be necessary to meet the projected storage requirements. A site is available adjacent to the South Reservoirs for construction of the tank.

Booster Pump Stations: The existing booster pump stations have adequate capacity to satisfy system growth over the next 20 years.

Distribution System: The majority of the distribution system can satisfy the current fire flow requirements, however, there are a few locations served by 4 inch diameter and 6 inch dead-end mains. The available fire flow in these areas is less than the required values. The Water Company will selectively replace mains or complete other improvements to enhance system hydraulics to the desired levels.

WATER RIGHTS SELF-ASSESSMENT

The water rights self-assessment report form can be found in Appendix C.

CHAPTER 4

WATER USE EFFICIENCY PROGRAM AND WATER RESOURCE ANALYSIS

BACKGROUND

In 2003, the Washington State Legislature passed Engrossed Second Substitute House Bill 1338, commonly known as the Municipal Water Law, to address the increasing demand on our state's water resources. Although Mt. View-Edgewood Water Company (MTVE) has a long history of using water responsibly and efficiently, the law established that all water suppliers must use water more efficiently in exchange for water right assurances and flexibility to help them meet future demands. The state Department of Health was directed to adopt an enforceable Water Use Efficiency (WUE) program intended to achieve a high level of stewardship among all water suppliers, contribute to long-term supply reliability and public health concerns, and ensure efficient operation and management of water systems.

The Water Use Efficiency program became effective on January 22, 2007. The regulations are contained in WAC 246-290. The Washington State Department of Health published the Water Use Efficiency Guidebook (DOH Pub. #331-375) in March 2008. The guidebook was updated in January 2011. The guidebook provides assistance to purveyors in complying with the requirements of the Water Use Efficiency (WUE) Rule. This Water System Plan and the Water Use Efficiency Program were prepared in accordance with the Municipal Water Law requirements and the Water Use Efficiency Guidebook. In addition to improving water use efficiency, the program requires annual "Performance Reports" to DOH by water purveyors each year not later than July 1, and future DOH "Operating Permits" are expected to be affected by the progress (or lack thereof) in achieving efficient water usage according to the reporting data.

Water is a public resource we all share. As new water sources diminish, the WUE requirements are intended to support, through efficient use, a common goal of ensuring water is available for drinking and fire protection to meet future needs. Benefits of the WUE program include promoting good stewardship of the state's water resources, and ensuring efficient operation and management of water systems.

WATER SUPPLY CHARACTERISTICS

The characteristics of the MTVE water system are detailed in Chapter 2 of the Water System Plan, and in the Wellhead Protection Plan (WSP Appendix I). Overall we have adequate sources of supply, pumping, and storage facilities to meet projected growth well into the future.

MTVE'S WATER USE EFFICIENCY PROGRAM

Mt. View-Edgewood Water Company established a number of key elements in our water conservation program to adopt the tenets of the Water Use Efficiency program. These elements include planning requirements such as establishing long-term forecast demand and data

collection, meeting a Distribution System Leakage Standard, and setting goals and reporting performance. We are proud to report we had already met and exceeded all of the required measures, and continue to implement effective best management practices. All of our sources of water supply are metered, and every customer connection is metered (including our seasonal intertie with the City of Milton). We also established a bulk water fill point (for commercial water use including construction, hydroseed trucks, street sweepers, etc.) that is metered and protected by the appropriate backflow device, and a water tanker fill point that is also metered. MTVE exceeds the metering standard with the addition of intermediary distribution system meters which allow precise volume calculations in specific zones (such as in our upper pressure zone).

All municipal water suppliers in Washington are required under the Water Efficiency Ruling to develop a program which will allow them to achieve the goal of attaining a 10% Distribution System Leakage standard.

For the past 3 years MTVE’s policies and procedures have resulted in our achieving a Distribution System Leakage average of 5.8%.

Table 4.1
Metered Water Production, Consumption, and DSL

Year	Total Metered Production (gallons)	Total Authorized Consumption (gallons)	DSL (gallons)	DSL Percentage (gallons)	3 Year Rolling Average
2010	263,043,732	242,728,711	20,315,021	7.7%	7.9%
2011	256,325,779	243,664,193	12,661,586	4.9%	6.4%
2012	277,628,529	256,530,754	21,097,775	7.6%	6.7%
2013	288,849,016	266,861,196	21,987,820	7.6%	6.7%
2014	300,189,795	283,169,714	17,020,081	5.7%	7.0%
2015	339,672,551	320,533,648	19,138,903	5.6%	6.3%
2016	320,746,758	300,783,835	19,962,923	6.2%	5.8%

PUBLIC MEETING PURPOSE AND NOTICES

As published in the Puyallup Herald newspaper (December 27, 2007), and on our web site, MTVE conducted the first Public Forum at Fire District #8 on January 16, 2008. This meeting’s purpose was to invite public participation in establishing MTVE’s WUE goals aimed at ensuring the Water Company’s efficient use of its water resources for the years 2008 through 2014.

In order to synchronize MTVE’s WUE program with the Water System Plan (WSP) as required in DOH Publication #331-375 (Revised, Third Edition), in advance of the required 6 years maximum interval, MTVE held a second Public Forum at MTVE’s office on April 6, 2011. The meeting date was announced to the public three weeks in advance on MTVE’s web page and in

the Puyallup Herald. Like the first meeting, the purpose was to receive input from the Public to help the Board establish the WUE Goals (for the years 2012 to 2017). At the regular monthly board meeting held on April 13, 2011 at MTVE, the Board of Directors voted and approved the WUE goals for the next 6 years.

A third Public Forum to establish WUE goals for the years 2018 – 2028 was held on December 14, 2016. The meeting was announced on our website, on the DOH-ODW website, and in a message on customer bills.

MTVE'S WUE GOALS

At the January 11, 2017 monthly Board Meeting, MTVE Board of Director's adopted the following goals:

MTVE's water use efficiency goal for the years 2018 through 2028 is to:

1. Maintain a 10% or less Distribution System Leakage standard.
2. Decrease average customer consumption at a rate of 0.25% per year over the next ten years.

No specific goals are set related to reducing peak day demand. This decision was made due to the volatility of peak day demand as a result of rainfall and temperature conditions. However, efforts directed at larger summer water users should assist in the Company's efforts to reduce both peak day and average day demand.

SUPPLY SIDE (MTVE) WATER CONSERVATION MEASURES

(All Are Fully Implemented)

1. Leak detection. MTVE is proactive in the detection of leaks in our distribution and transmission mains and all attached facilities (reservoirs, valves, hydrants, etc.). We contract professional leak detection services on an as needed basis. MTVE is a member of the Water Cooperative of Pierce County, and professional leak detection services are contracted by the Cooperative at a group rate discount to provide frequent service at the lowest possible price.
2. We have instituted a policy of "Zero Use" of fire hydrants by anyone other than a fire truck. This has allowed citizens and law enforcement to know when they see someone hooked onto one of our hydrants that the use is unauthorized and constitutes theft of water, and law enforcement can stop the perpetrator on the spot. Also significant has been the adoption of a substantial water theft fee in MTVE's published fee schedule. In addition to increasing security and protection of the public water supply, this policy and theft fee conserves water that would otherwise be considered leakage.
3. MTVE has an active meter replacement program which involves monitoring of consumption history reports, testing of meters, and replacement of aging meters that (due to wear in the measuring chamber or physical obstruction) allow passage of water without recording the correct quantity.

4. MTVE Water meter readers use both a drive-by truck-mounted radio computer and handheld computers to monitor meter recordings and detect customer leaks in most cases before the homeowner is even aware a leak has occurred. Our automated meter reading computer detects high readings as soon as the meter reading is entered, and flags the meter as having a possible leak. Our service technician then observes the meter to see if it is in leak mode, and if so we contact the customer on the spot. This results in rapid correction of the leak and saving of water prior to the customer even receiving their water bill.
5. In 2010 MTVE replaced all manual customer meters with Sensus radio-controlled Automatic Meter Read (AMR) meters. These conserve water from multiple aspects. Our AMRs have a leak detection capability that flags the reading and lets us know there is a leak. By replacing all meters we improved accuracy due to the lack of wear and by improved technology that more accurately measures low flows typical of customer leaks. Most importantly we have the ability to accurately read water consumption system-wide in less than six hours, so we can accurately correlate our consumption data to our pumping data. Discrepancies are instantly visible, and discovery of leaks occurs sooner. Then by deploying leak detection equipment we can locate and correct the leaks more rapidly, resulting in water conservation (and reduced revenue losses).
6. In 2010 (in conjunction with the AMR conversion) MTVE adopted new management practices to precisely compare actual customer consumption to production. We changed all customer meters to read in increments of one cubic foot instead of one-hundred cubic feet. This additional level of meter accuracy is further enhanced by reading all customer meters every month, at the same time production meters and reservoir levels are recorded. Consequently the resultant data provides an instantaneous comparison that shows accurate distribution leakage (after authorized uses are deducted from the production total). Our SCADA system records all production meters continually and provides historical data for trending.
7. MTVE takes an aggressive approach to fixing distribution system leaks as quickly as possible to minimize the loss of water and revenue.
8. MTVE has adopted stringent standards that focus on prevention of contamination of the distribution system. This reduces the need for wasting of water to disinfect and flush in excessive quantities. Examples of our stringent standards include the implementation of a Premises Isolation program which involves installing backflow prevention devices at every service connection; elimination of dead-end mains where possible; shortening of fire hydrant spool lengths; requirement for developers to use new pipe sealed with end caps in place to prevent contamination; and the requirement for stringent purity testing (additional requirement for Heterotrophic Plate Count samples) prior to putting new mains into service.

DEMAND SIDE (CUSTOMER) WATER CONSERVATION MEASURES

(All Are Fully Implemented)

DOH Publication #331-375 (Revised/3rd Edition) delineates that (based upon our number of connections) we must evaluate or implement at least 6 Water Use Efficiency Measures that improve customer demand efficiency. We have always implemented more than our required number of measures, and continue to do so. These measures include:

1. Consumption history graph on all customer bills.
2. Conservation rates (inclining block rate structure).
3. MTVE water rates do not include a bulk consumption allocation as part of our Base Fee. We charge a flat base fee, plus a consumption rate for every cubic foot of water consumed. This encourages water conservation by every single customer as no water is provided for “free.”
4. Customer leak detection education.
5. Leak repair incentives (we offer leak adjustments only upon proof of repaired leaks). This incentive applies to SFR, MFR, and Commercial classes of customers.
6. Meter replacements. This includes changing to new Automated Meter Reading radio meters in 2010, and to changing meter sizes to more accurately match fixture counts and demand. MTVE also replaced inefficient compound meters on large service connections with Sensus Omni radio-read meters (floating ball technology) which greatly improved accuracy and measurement of low flows typical with customer leaks.
7. The customer meter unit of measurement is one cubic foot and we bill the customer for each cubic foot registered. This provides accuracy and visibility that helps customers realize the cost of their water in a smaller quantity that they can understand and visualize. This encourages reduced use and waste of water as customers use water for daily activities.
8. Installation of Premises Isolation backflow assemblies, which includes customer-side shutoff ball valves that can be operated by hand. This allows the customer to shut off water for plumbing repairs without using water company angle stop valves (customer use of angle stop valves without the proper wrench greatly increases leakage and results in costly repairs). In addition to the benefit of providing ball valves, the installation of Premises Isolation backflow assemblies uncovered and fixed many customer leaks due to poor plumbing practices. Leaking connections to lawn irrigation systems were discovered and fixed upon installation of the backflow assemblies. In addition to reducing leaks, the Premises Isolation assemblies greatly improve the protection of the Public water supply and protection of the health of our customers by preventing cross-connections.

CUSTOMER EDUCATION AND COMMUNICATION

MTVE's WUE program promotes good stewardship of the State's water resources, ensures efficient operation and management to conserve rate payer's funds, and contributes to the long-term water supply reliability and protection of public health. To succeed, MTVE must effectively communicate with customers so they understand and willingly participate in the program. Feedback from customers regarding program improvement is encouraged and desired, and can be provided by speaking with a Customer Service Representative in our office (253) 863-7348, or filling out the customer inquiry form on the website (<http://mtvewater.com/contact/contactform.htm>), or by simply enclosing a note with their bill payment.

MTVE is a member of **WaterSense**, a program sponsored by the U.S. Environmental Protection Agency (www.epa.gov/watersense/partners/promotional.html). This free program helps customers to identify products that meet the EPA's criteria for water efficiency and performance. WaterSense labeled products such as washing machines, faucets, and showerheads use 20% less water than standard products without sacrificing performance. WaterSense also provides MTVE with a free educational tool kit that helps us inform our customers about the program, and helps us meet our WUE Goals.

MTVE's WUE plan, including future notices, updates, and water conservation tips are provided to the public and customers through MTVE's website (www.mtvewater.com) and on customer water utility bills. These methods are also used throughout the year to provide tips how to conserve water, information on how leaks occur and actions to take to prevent, detect, and stop leaks, and how to reduce water consumption by using water wisely. Water Rates are also communicated via these methods.

Each October Mt. View-Edgewood Water Company also conducts its Annual Meeting and Election of Board Members. The Annual Meeting is traditionally the primary meeting utilized to communicate with our membership on all aspects of the company.

PARTNERING WITH OTHER WATER SYSTEMS

Mt. View-Edgewood Water Company is proud to be one of the charter members of the Water Cooperative of Pierce County, which is comprised of a sixteen member group of groundwater public water systems that serve over 500,000 citizens in Pierce County.

Due to the close relationship between members, we make each other stronger through sharing of resources (information and material). We collectively make group purchases for contracted services, equipment, and supplies at a significant cost savings. A lobbyist is hired by the CoOp to protect our legislative interests and to represent our ratepayers at the State legislative level. We provide Mutual Aid to each other during emergency situations. The CoOp also enjoys the ability to share water supply to members in need through a collective wholesale water service agreement. Training of personnel (both field and administration) and sharing of ideas and information in joint training sessions has proven very valuable. Partnering with other similar and

nearby purveyor's has encouraged the sharing of Best Management Practices and has materially contributed to the increased professionalism of all CoOp members.

MTVE WUE MANAGEMENT TOOLS

The most significant management tool to a successful WUE program, and to the efficient operation of the water utility, is the complete system conversion to Automated Meter Reading (AMR) radio-read technology which MTVE accomplished in November 2010.

In the past it was virtually impossible to accurately compare production data to consumption data, as the time parameters were always different based upon how MTVE collected consumption data from manual read meters. The physical amount of time previously required to read all manual meters was 10 days for a crew of two workers. This workload was divided into two cycles, so that half of the system meters would be read each month. Consequently with manual read meters we would need two months before all meters were read, and the data would be impossible to accurately compare with pumping data since the consumption data was staggered between two different time periods. The data comparison is further skewed by the need to know changing reservoir levels throughout this data collection period.

The addition of radio-read AMR meters solved this management problem. Each month MTVE reads all customer meters in less than six hours (though we still have two billing cycles with different billing periods to efficiently spread administrative staff time processing bills, and field crew time investigating customer billing inquiries and shut-offs for non-payment). In the middle of this six hour time period field staff read all production meters and reservoir levels. After deducting Authorized Consumption from Total Production within this six hour period we obtain the most accurate possible representation of our Distribution System Leakage.

We then run meter reports that identify unusually high readings which could indicate leaks, and identify unusually low readings that can represent broken or inaccurate meters, or water theft. We also run a history report for comparisons with previous seasons.

We also have graphed the production and consumption data monthly since AMR's were installed, and compare the relationships of slopes of both lines each month rather than waiting to do so annually or over a longer time period as forced to do when using manual read meters. When both lines remain parallel throughout the season, then Distribution System Leakage is generally consistent (remaining the same percentage). When the two lines get closer together, then an action occurred that reduced the leakage quantity. The timing of this change in the graph can indicate which action affected the change. When both lines move apart then either Distribution System Leakage has increased or customer meters have ceased to accurately record consumption. This tool helps rapidly identify when a Distribution System Leakage occurs so we can analyze what has changed in the past month to explain the change, and to determine if the problem is with leaks or meters.

We use the following chart as the management tool to measure the progress toward achieving our Demand (Customer) Side Goal of decreasing per capita annual consumption by 0.25% each year for the next six years. The values shown are based on single family residential connections since they comprise nearly 93% of the total connections and they are easily tracked.

**Table 4.2
Average Consumption Per Capita Per Day**

Year	Average SFR Consumption (gallons)	Total Connections	Average Connection Consumption Per Day (gallons)
2010	585,459	2,732	214
2011	573,834	2,742	209
2012	599,937	2,746	218
2013	614,867	2,783	221
2014	629,350	2,809	224
2015	704,648	2,829	249
2016	685,801	2,851	241

The values do not show a reduction in consumption, however, larger homes with greater landscape irrigation requirements have been recently constructed within the service area. Secondly, weather conditions over the last 3 years have been drier than normal which has resulted in higher summer period water demands. The values shown would have been higher without the Water Company's recent conservation efforts.

SOURCE OF SUPPLY ANALYSIS AND EVALUATION OF SUPPLY ALTERNATIVES

Considering the current water sources, existing water rights, and projected growth, MTVE has no need to develop additional source(s) within the 20 year planning period.

RECLAIMED WATER OPPORTUNITIES

There are no opportunities to utilize Reclaimed Water with MTVE's service area, and no opportunities will likely be available in the future as there are no sources for reclaimed water near MTVE's service area. Nearly all properties in the service area are currently utilizing septic tanks. Septic systems, along with many wetlands, return water to the aquifer after slowly being filtered through the clay soils.

The sewer line that serves the commercial properties along Meridian pumps to Lakehaven in Federal Way and is processed there. Fortunately the Milton-Redondo aquifer (where our wells obtain their water) begins in Federal Way where Lakehaven Water & Sewer are located. Reclaimed water returned to the environment in this region is filtered naturally and returns to our system through the aquifer.

INTERTIE SUPPLY AVAILABILITY

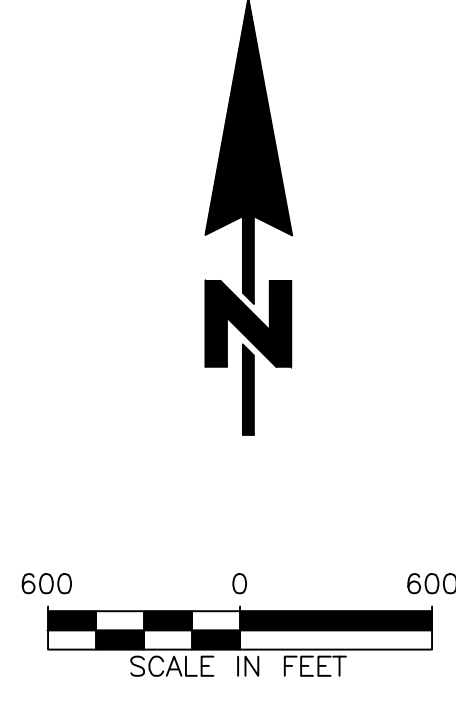
WUE measures adopted by MTVE have made water available to help its neighbors through interties and through water tanker trucks if necessary.

On June 2, 2010 the previously approved and constructed Emergency Intertie with the City of Milton was upgraded and approved by DOH as a Seasonal Intertie (approval attached as Appendix M). MTVE has sufficient quantity of water to supply 500 gallons per minute to the City of Milton, including during peak demand times.

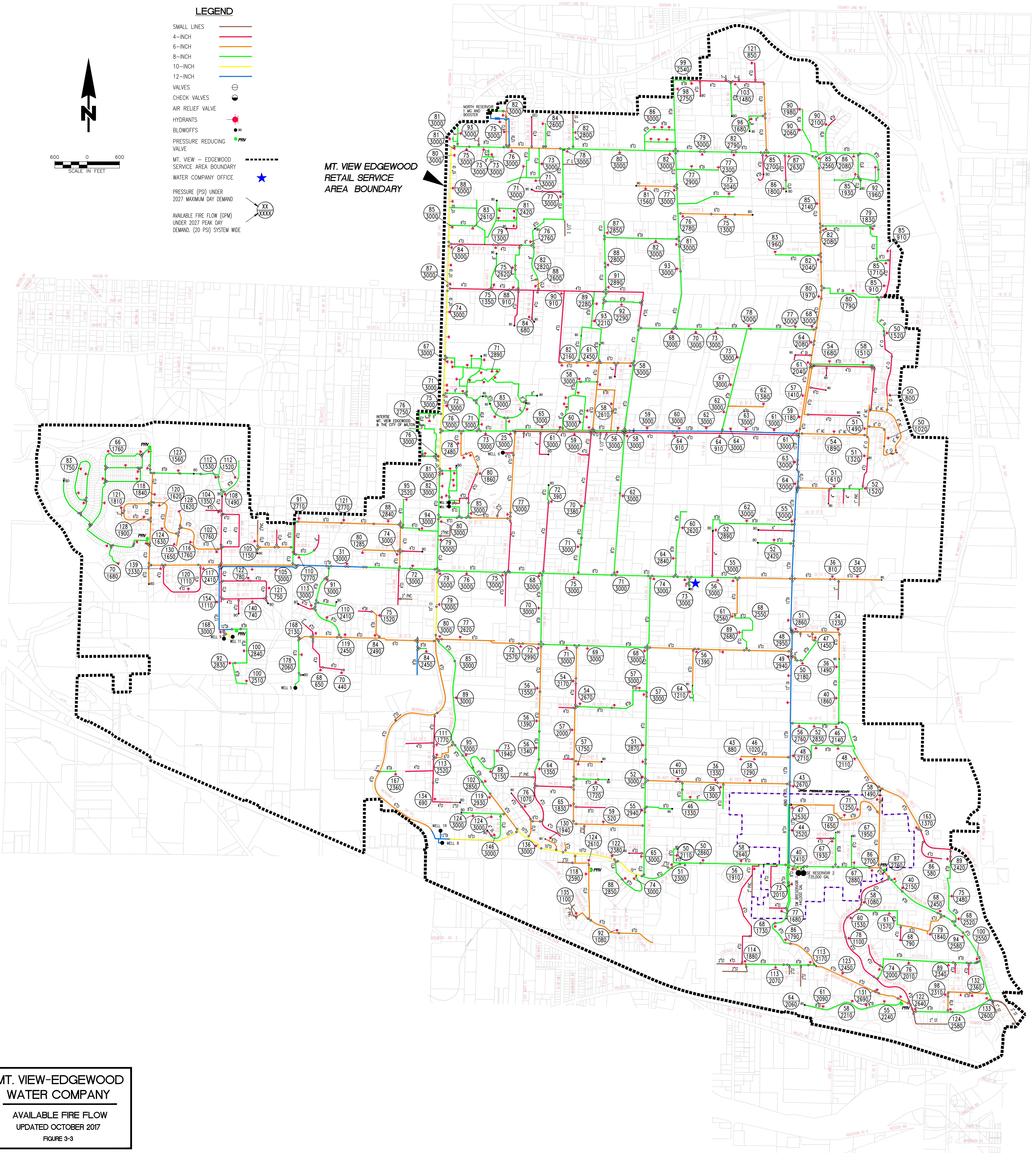
MT. VIEW EDGEWOOD WATER COMPANY - DOH ID 568203

LEGEND

- SMALL LINES
- 4-INCH
- 6-INCH
- 8-INCH
- 10-INCH
- 12-INCH
- VALVES
- CHECK VALVES
- AIR RELIEF VALVE
- HYDRANTS
- BLOWOFFS
- PRESSURE REDUCING VALVE
- MT. VIEW - EDGEWOOD SERVICE AREA BOUNDARY
- WATER COMPANY OFFICE
- PRESSURE (PS) UNDER 2027 MAXIMUM DAY DEMAND
- AVAILABLE FIRE FLOW (GPM) UNDER 2027 PEAK DAY DEMAND, (20 PSI) SYSTEM WIDE



MT. VIEW EDGEWOOD
RETAIL SERVICE
AREA BOUNDARY



**MT. VIEW-EDGEWOOD
WATER COMPANY**
AVAILABLE FIRE FLOW
UPDATED OCTOBER 2017
FIGURE 3-3



CHAPTER 5

SOURCE WATER PROTECTION

OVERVIEW

The Water Company relies on groundwater for its sole source of supply. As previously discussed, the Water Company currently operates nine wells. The depths and capacities of these wells are included in Chapter 1. To protect groundwater supplies, the Environmental Protection Agency (EPA) and the Department of Health (DOH) require public water utilities to develop a wellhead protection program as a component of their water system plan.

Susceptibility assessments were completed by the Water Company in 1996 and submitted to the Department of Health. These assessments relied on the “cookie cutter” method for determining wellhead protection areas and are not completely reliable for the type of geology found in the Water Company area.

Robinson & Noble, Inc. completed a Wellhead Protection Plan for the Water Company in March 2005 that uses a numerical model to more accurately define the wellhead protection area. A copy of the Wellhead Protection Plan is included in Appendix I. The Wellhead Protection Plan contains the following required elements; wellhead protection area identification, contaminant source inventory, spill response, and contingency planning. The Wellhead Protection Plan also includes detailed hydrogeology, management strategies, and an implementation task list.

The purpose of the Water Company’s wellhead protection program is to provide a pro-active program for preventing groundwater contamination. The Water Company’s wellhead protection program consists of a number of components, which have been developed and implemented. The major components of the plan are described below and are found in the Water Company Wellhead Protection Plan:

- A *Susceptibility Assessment* determining the susceptibility to contamination.
- A *delineated wellhead protection area*, based on all reasonably available hydrogeologic information, including the Susceptibility Assessment.
- An *inventory* within each wellhead protection area of all potential sources of contamination.
- A *spill response plan* for each wellhead protection area containing documentation for coordination with local first responders.
- *Contingency plans* for providing alternate sources of drinking water in the event that contamination does occur and management recommendations to reduce the likelihood that potential contaminant sources will pollute the drinking water supply.

Based on the susceptibility assessments completed by the Water Company, the Department of Health assigned susceptibility ratings to each of the Water Company’s wells. The ratings for these wells are summarized in Table 5-1.

TABLE 5-1
Washington State Department of Health Well Susceptibility Ratings

DOH Source #	Name	Type	Use	Susceptibility Rating
S04	Well 3	Well	Emergency	Moderate
S05	Well 5	Well	Seasonal	Moderate
S06	Well 6	Well	Permanent	Low
S07	Well 7	Well	Permanent	Moderate
S08	Well 8	Well	Permanent	Moderate
S10	Well 1R	Well	Permanent	Moderate
S12	Wells 9 and 11	Well Field	Permanent	Moderate

HAZARD INVENTORY

The Water Company issues Certificates of Water Availability for all new construction, remodel construction, and demolition within its service area. These Certificates of Water Availability are used to track activity within the wellhead protection area and to insure an inventory of potential groundwater contamination sources is always current. No sources of potential groundwater contamination have been added or removed in the last six years.

CHAPTER 6

OPERATIONS AND MAINTENANCE

INTRODUCTION

There are two primary objectives for this chapter devoted to system operation and maintenance. The first is to provide documentation of satisfactory water system management operations in accordance with WAC 246-290-100 and 246-290-415. The second is to provide a comprehensive reference of system components, procedures, and programs to assist the Water Company in its operations, training, and planning activities.

WATER SYSTEM MANAGEMENT AND PERSONNEL

The Water Company is governed by an elected seven-member board of directors. Water Company staff includes a Manager, a Field Manager, an Accounting Manager, six Field Staff members, and two Office Staff members.

Employee	Contact Information
Jacki Masters	General Manager WDM IV, CCS, QSS, WTPO II, WWCS II Mobile: (253) 606-4548
Mike Craig	Field Manager WDM II, CCS, DOE Water and Resource Protection Driller's License, Class A CDL Mobile: (253) 606-4549
Jon A. Young	Field Technician Mobile: (253) 606-4550
Dan Buff	Field Technician WTPO-IT, WDM I, CCS, BAT, Class A CDL Mobile: (253) 686-5968
Eugene (Gene) Ryan	Field Technician WDM II, CCS, Class B CDL Mobile: (253) 606-5037
Scott Loidhamer	Field Technician Class A CDL Mobil (253) 606-4541
Casey Edwards	Field Technician Mobile: (253) 686-1962

Employee	Contact Information
Stephanie Christel	Accounting Manager (253) 863-7348
Laurie Kennedy	Customer Service (253) 863-7348
Sophia Wolfram	Customer Service (253) 863-7348

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 three Continuing Education Units (CEU) within each three-year period. Programs sponsored by American Water Works Association (AWWA), Pacific Northwest Subsection of AWWA, South Sound Subsection of AWWA, Evergreen Rural Water, and Washington Environmental Training Resources Center (WETRC) are the most popular source of CEU's for certified operators in Washington State.

Besides providing CEUs, operator training is an important component in maintaining a safe and reliable water system. Personnel performing water system related duties receive training in the following areas:

- Confined Space
- Fall Restraint/Fall Arrest
- Trenching and Shoring
- Traffic Flagging
- Asbestos Cement Pipe Safety
- Cross Connection Control
- First Aid and CPR
- Respirators

The Water Company evaluates CEU's on an annual basis. Each certified employee is responsible for maintaining their certification. The Water Company accepts financial responsibility for classes needed by the employees for keeping current with CEU's.

SYSTEM OPERATION AND CONTROL

MAJOR SYSTEM COMPONENTS

The locations of the major system components are shown on Figure 1.3, the System Facilities Map. A brief description of the Water Company's facilities is given in the following sections.

Reservoirs

The Water Company owns and operates three steel reservoirs. Table 6.1 provides the characteristics of these reservoirs. The South East Reservoir volume is 446,777 gallons and the South West Reservoir stores 734,500 gallons. Both have a base elevation of 500 feet and an overflow elevation of 550 feet. The Water Company's wells are brought on line according to the South Reservoir levels. The South Reservoir level set points range between 39 feet to 46 feet for the pump "on" calls and pump "off" at 49.5 feet.

TABLE 6.1
Reservoir Data

Reservoir	Capacity (gallons)	Location	Year Built	Material	Overflow Elevation (ft.)	Height (ft.)	Diameter (ft.)
South East	446,777	12224 - 48th St E.	1950	Steel	550	50	39
South West	734,500	12226 - 48th St E.	1971	Steel	550	50	50
North	1,000,000	614 - 105th Ave E.	2001	Steel	388	30	80

Supervisory control and data acquisition (SCADA)

The SCADA system that controls the Company's water distribution system consists of a centralized, computerized control program and remote terminal units (RTU's) at each well site and reservoir location. Control and monitoring of each remote location is accessed through a series of screens. This combination of a central computer and RTU's gathers field data, allows the exchange of information, and dispatches on/off commands to the equipment in the field. The field RTU's communicate with the Office Station through Water Company owned radio system. The SCADA system operates with Citect software. The Office Station is equipped with an auto dialer that is programmed with the on-call employee's and Field Manager's phone numbers. The Office Station calls the preset phone number and reports any type of alarm or failure. The

employee can call into the Office Station and get a complete system status. The Office Station can also be remotely accessed by the employee using a laptop computer. With this arrangement the employee can adjust all setpoints and monitor the entire system.

Each SCADA panel consists of a RUGID computer, processor/memory card, radio, and antenna. These components are equipped with a field interface card to which all field instrumentation and control output devices are connected. The sensors provide control and monitoring of flow rates, pump status, remote pump start/stop, power failure, pump run times, pump call set points, fire alarms, intrusion alarms, communication failure alarms, and flood alarms. The office station and each RUGID computer are equipped with a back-up battery in the event of a power failure.

Table 6.2 summarizes the locations of the RTU's and the data that is monitored.

**TABLE 6.2
RTU Data Monitored**

Location	Description
Office Station	Master system control site
South Reservoir	Communication failure, intrusion alarm, fire alarm, current Reservoir level, high/low reservoir level alarm, power fail, building flood alarm, and North Reservoir level. Booster Pumps 1, 2, 3, 4, and 5 statuses, flows, upper pressure zone pressure, and failures.
North Reservoir	Communication failure, intrusion alarm, fire alarm, current Reservoir level, high/low reservoir level alarm, power fail, building flood alarm, and South Reservoir level. Booster Pumps 1, 2, and 3 status, flows, and failures.
Wells 1R, 3, 5, 6, 7, 8, 9, and 11	Communication failure, intrusion alarm, fire alarm, current well level, power fail, and South Reservoir level, Well Pump status, flow, and failures.

Sources

The Water Company currently owns nine wells, six of which are utilized on a regular basis. All wells are controlled by the SCADA system and operated in a rotation to ensure water quality.

- Well 1R is equipped with a 150 horsepower Gould's 11CHC Lineshaft Turbine Pump set at 52 feet producing 1,000 gpm. The pump is controlled with a 4 inch Cla-Val and flow is recorded with a 6 inch Water Specialties meter.
- Well 2 is equipped with a 5 horsepower Gould's 33GS50 Submersible Pump set at 367 feet producing 30 gpm. Flow is recorded with a 1 inch Sensus meter.

- Well 3 is equipped with a 40 horsepower Jacuzzi Submersible Turbine Pump set at 226 feet producing 275 gpm. The pump is controlled with a 2 inch Cla-Val and flow is recorded with a 4 inch Sparling meter.
- Well 5 is equipped with a 100 horsepower Byron Jackson 10 inch MQ “L” Submersible Turbine Pump set at 350 feet producing 400 gpm. The pump is controlled with a 2 inch Cla-Val and flow is recorded with a 6 inch Water Specialties meter.
- Well 6 is equipped with a 40 horsepower Gould’s 7WALC Submersible Turbine Pump set at 361 feet producing 200 gpm. The pump is controlled with a 2 inch Cla-Val and flow is recorded with a 4 inch Water Specialties meter.
- Well 7 is equipped with a 50 horsepower Gould’s 9CHC Lineshaft Turbine Pump set at 221 feet producing 300 gpm. The pump is controlled with a 6 inch Pressure Sustaining Cla-Val and flow is recorded with a 6 inch Water Specialties meter.
- Well 8 is equipped with a 75 horsepower Byron Jackson 10 inch GM “L” Lineshaft Turbine Pump set at 52 feet producing 350 gpm. The pump is controlled with a 6 inch Cla-Val and flow is recorded with a 6 inch Water Specialties meter.
- Well 9 is equipped with a 100 horsepower Gould’s 11WAHC Lineshaft Turbine Pump set at 208 feet producing 500 gpm. The pump is controlled with a 6 inch Cla-Val and flow is recorded with a 6 inch Water Specialties meter.
- Well 11 is equipped with a 150 horsepower Gould’s 11CHC Lineshaft Turbine Pump set at 186 feet producing 1,000 gpm. The pump is controlled with a Variable Frequency Drive and a 6 inch Cla-Val. Flow is recorded with a 6 inch Mag meter.

North Reservoir Booster Station

This pump station is required in order to utilize the reservoir within the distribution system. The booster station can pump up to 1,500 gpm with all three pumps operating at full capacity. Because this reservoir is below the hydraulic grade line established by the South Reservoir, the booster station is operated on a daily basis, controlled by SCADA, to maintain acceptable water quality within the reservoir.

South Reservoir Upper Pressure Zone Booster Station

This pump station is utilized to pressurize the Upper Pressure Zone. It contains 5 variable frequency driven pumps capable of delivering a total station capacity of approximately 2,000 gpm. It maintains a hydraulic grade line of 615 feet within the pressure zone, which is equivalent to 50 psi at the station.

WATER QUALITY MONITORING

The Department of Health updates and sends the Water Company a Water Quality Monitoring Report (WQMR) the first part of every year. The WQMR lists the active sources along with the required sampling schedule for the upcoming year. The sources that have sampling waivers are also listed.

Routine Coliform Monitoring

The Total Coliform Rule was adopted under the Washington Drinking Water Regulations (WAC 246-290) in February 1992. The Environmental Protection Agency published the Revised Total Coliform Rule (RTCR) in the Federal Register on February 13, 2013 and minor corrections were published on February 26, 2014. The RTCR is the revision to the Total Coliform Rule and is intended to improve public health protection. All public water systems were required to comply with the RTCR by April 1, 2016. Key provisions of the rule follow:

- Set a maximum contaminant level goal (MCLG) and maximum contaminant level (MCL) for E. coli for protection against potential fecal contamination.
- Set a total coliform treatment technique (TT) requirement.
- Established requirements for monitoring total coliform and E. coli according to a sample siting plan and schedule specific to the PWS.
- Allows public systems to transition to the RTCR using their existing Total Coliform Rule (TCR) monitoring frequency, including public systems on reduced monitoring under the existing TCR.
- Established requirements for seasonal systems (such as, Non-Community Water Systems not operated on a year-round basis) to monitor and certify the completion of a state-approved start-up procedures.
- Set requirements for assessments and corrective action when monitoring results show that public water systems may be vulnerable to contamination.
- Established public notification requirements for violations
- Provides specific language to include in Consumer Confidence Reports when an assessment must be made or if an E. coli MCL violation occurs.

For E. coli, the Maximum Contaminant Level Goal is set at zero. The MCL is based on the occurrence of a condition that includes routine and repeat samples. For total coliforms, public water systems must conduct a Level 1 or Level 2 assessment of their system when they exceed a specified frequency of total coliform occurrences. An MCL violation or failure to take repeat samples following a routine total coliform-positive sample will trigger a Level 1 or Level 2

assessment. Any sanitary defect identified during a Level 1 or Level 2 assessment must be corrected by the system according to the treatment technique requirements of the RTCR.

Public water systems must develop and follow a sample siting plan that designates the system's collection schedule. This includes locations for routine and repeat water samples. Routine water samples are to be collected on a regular basis (monthly, quarterly, annually per the requirements specific to the system). The samples are to be tested for the presence of total coliforms by a state certified laboratory. All routine or repeat samples that are total coliform positive for E. coli shall be reanalyzed. Repeat samples (at least 3) for each total coliform positive routine sample are to be collected and tested.

Public water systems are required to conduct a Level 1 or Level 2 assessment if conditions indicate they might be vulnerable to contamination. Public water systems must fix any sanitary defects within a required timeframe.

Public water systems are required to report certain items to their state regulatory agency. These reporting and recordkeeping requirements are essentially the same as under the TCR. The addition to the Requirements is the Level 1 and Level 2 requirements.

Public water systems incur violations if they do not comply with the requirements of the RTCR. The violation types are essentially the same as under the TCR with few changes. The biggest change is no acute or monthly MCL violations for total coliform positive samples only. Public notification is required for violations incurred. Within required timeframes, the water system must use the required health effects language and notify the public if they did not comply with certain requirements of the RTCR. The type of public notice depends on the severity of the violation. Community water systems must use specific language in their Consumer Confidence Reports when they must conduct an assessment or if they incur an E. coli MCL violation.

A summary of the RTCR monitoring procedures is shown in Figure 6.1. The Coliform Monitoring Plan for the system is contained in Appendix G and the sample locations are shown in Figure 6.4 included in the back pocket. A sample boil water notice is also included in Appendix G.

The Water Company is required to collect at least 10 monthly routine samples.

Lead and Copper Rule

EPA adopted the Lead and Copper Rule in June 1991 because of growing concern about lead contamination in drinking water, which results almost exclusively from corrosion of building plumbing. Copper is included in the rule because, although it is less of a health problem than lead, it also typically enters drinking water from plumbing corrosion. The Lead and Copper Rule establishes a treatment technique to control lead and copper rather than setting specific limits or MCL's. The rule includes detailed monitoring, study and treatment requirements that depend on the number of people served by the water system, the results of customer tap monitoring, and the evaluation of corrosion treatment studies by the state or EPA.

The rule requires water systems to collect samples at "worst case" customer taps to determine lead and copper levels. The number of samples during each six month monitoring period depends on system size, ranging from 100 samples for the largest system to 5 samples for the smallest. Techniques to control lead exposure listed in the rule include corrosion control treatment, lead service line replacement, public education, and treatment to remove any lead that may enter the water at the source.

Groundwater Rule

The U.S. Environmental Protection Agency published the Ground Water Rule (GWR) on November 8, 2006. One goal of the GWR is to provide increased protection against microbial pathogens, specifically bacterial and viral pathogens, in public water systems that use groundwater. Instead of requiring disinfection for all groundwater systems, the GWR establishes a risk-targeted approach to identifying systems that are susceptible to fecal contamination. The GWR requires systems at risk of microbial contamination to take corrective action to protect consumers from harmful bacteria and viruses.

The GWR applies to all public water systems that:

- Rely entirely on one or more ground water sources.
- Are consecutive systems receiving groundwater.
- Mix surface and ground water, where groundwater is added directly to the distribution system and delivered to consumers without treatment equivalent to the treatment provided for surface water.

Although all of these systems are subject to the GWR provisions, systems that have been identified as at-risk for contamination (by inspection or based on monitoring results) will account for most of the systems that have to take corrective action to comply with this rule. The basic requirements of the GWR include:

- Sanitary surveys
- Source water monitoring
- Compliance monitoring
- Corrective actions

Sanitary surveys are primarily the responsibility of the state and local health officials, while public systems are responsible for the other requirements. Corrective action is required for any groundwater system with a significant deficiency. Some systems with fecal indicator-positive results from their triggered source water monitoring may be required by their states to take corrective action rather than conduct additional source water monitoring. If a system is instructed to carry out additional source water monitoring, corrective action is required if the system has a fecal indicator-positive result during the additional source water monitoring. Systems have four corrective action alternatives:

- Correct all system deficiencies
- Provide an alternate source of water
- Eliminate the source of contamination
- Provide treatment that reliably achieves 99.99 inactivation and/or the removal of viruses

VOC/SOC and Inorganic Chemical/Physical Characteristics Detection Procedures

The procedure to comply with DOH requirements in the event of a volatile organic chemical or synthetic organic chemical violation is presented in Figure 6.2. The procedure for an inorganic chemical/physical characteristic detection is presented in Figure 6.3.

Intertie Sampling Procedures

Prior to utilizing any intertie, a routine sample must be taken at the Water Company's sample port within the intertie vault. When any interties are in operation, samples will be taken at the Water Company's sample port on the same routine sample schedule as the utility receiving water. In the event the receiving utility has a Coliform positive sample and the Water Company's intertie sample is Coliform absent, then further testing of the Water Company's Wells and Reservoirs is not required. If the Water Company's intertie sample was not taken on the same day as the utility receiving the Water Company's water, or the Water Company's sample is also positive, then the Water Company will sample all Wells in operation the day the positive sample was taken, all Wells in operation 72 hours prior to sample day, and all Reservoirs with 24 hours of notification from the Lab.

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 follow. PM program logs are kept at each station.

Pumps

The Water Company utilizes both Lineshaft and Submersible Turbine Pumps. The Lineshaft pumps are monitored annually for meg-ohms, amp draw, vibration, and bearing noise. This data is used as an indicator of the motor and pump assembly health. If the values increase above industry standards the motor and/or pump assembly is scheduled

for removal and repair. The motor bearing lubrication is changed annually. Submersible pumps and wire leads are monitored annually for meg-ohms, amps, and volts. If the values increase above industry standards the motor is scheduled for removal and repair.

Reservoirs

Improperly maintained reservoirs can cause of contamination in public water systems. This is a result of contaminants entering 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 Water Company's reservoirs were built in 1950, 1971, and 2001. Interior maintenance is completed every five to seven years by divers. Interiors are visually inspected annually. Wall, floor, and ceiling integrity are determined at that time. Historically, interior inspections have been completed by draining the tanks and entering for a visual check. A dive team has recently been used to accomplish this task. Exterior maintenance is bi-annual with a visual check by two Water Company employees. Both Reservoir sites are visited daily to inspect fences and ladder covers for signs of tampering

Distribution

The Water Company has participated in a group purchase of leak detection equipment (Perma Loggers) with the Water Cooperative of Pierce County. The leak detectors are deployed throughout the distribution system annually. If any leak noise is detected the Water Company contracts with USA Leak Detection to pinpoint the noise and the area is excavated and any leaks are repaired.

Hydrant Maintenance

The Water Company and East Pierce Fire & Rescue updated the maintenance agreement May 18, 2015. The Water Company exercises, inspects, flushes, and clears away brush from the hydrants on an annual basis. Maintenance and repairs are completed by the Water Company as soon as possible following the Fire District report.

System Valves

The Water Company's goal is to exercise valves annually. This is done according to a monthly schedule using a mapping system. The field staff's goal is to complete one map section per month.

Dead-End Water Lines

Dead-end water lines are susceptible to water quality problems and should be flushed at least annually to remove stagnant water. Flushing of all dead end mains is accomplished twice each year or more often if water quality complaints should occur. The Water Company currently flushes dead end mains, in accordance with their valve maintenance program.

Meters

Accurate water metering is an essential financial and conservation oriented component of water system infrastructure. A substantial amount of revenue may be lost through inaccurate metering of residential and commercial accounts. In 2010 the Water Company completed installation of a Sensus AMR system. All service meters were replaced at that time. Service meters, including all Water Company residential and commercial customer meters, are to be calibrated and/or replaced according to the following schedule:

1. 5/8-inch through 1-inch meters are to be tested every 20 years. Replacement is recommended because it is more cost effective than repairing the meters.
2. 1.5-inch through 4-inch meters are to be tested and calibrated every 5 years.
3. 6-inch and larger meters are to be tested and calibrated annually.

The Water Company meter maintenance is audited each month during the billing cycle. Meters and meter boxes are assessed by field staff at this time for possible repair and or replacement.

PRV's

PRV's and vaults are checked monthly for leaks, flooding, and pressure settings. Repairs are made as necessary.

Air and Vacuum Relief Valves

The Water Company realizes the water quality risks involved with poorly maintained air & vacuum valves. All air and vacuum valves are inspected semi-annually to remove overgrown vegetation and to check for obstructed inlets, leaks and flooding. Repairs are made as necessary.

Inventory of Materials

The Water Company maintains an extensive inventory of materials, including service fittings, hydrant repair parts, sample stations, meter boxes and lids, meters, double check valve assemblies, repair bands, and copper. There are also five pipe and fitting suppliers in the local area which can be relied on in an emergency and for restocking of the material inventory.

Recommended Schedule

Table 6.3 contains a listing and schedule of normal maintenance and operations activities. The frequency listed is a minimum and the actual frequency may be adjusted as necessary to meet system requirements.

**TABLE 6.3
Preventive Maintenance Schedule**

Maintenance	Frequency
Check distribution system and repair any suspected leaks	Daily
Inspect all Well Sites and Pump Houses	Daily
Inspect all Reservoir sites and Booster Stations	Daily
Collect all meter reads and calculate DSL	Monthly
Collect routine coliform samples	Bi-Monthly
Read and bill meters	Monthly
Flush dead-end lines	Semi-Annually
Exercise hydrants	Annually
Air & Vacuum Valves	Semi-Annually
Exercise valves	Annually
PM Service for all pumps	Annually
Clean reservoirs	Every 5 Years

EMERGENCY RESPONSE PROGRAM

Water utilities have the responsibility to provide an adequate quantity and quality of water in a reliable manner at all times. To do this, utilities must reduce or eliminate the effects of natural disasters, accidents, and intentional acts. The Water Company has completed a Vulnerability Assessment.

EMERGENCY PROCEDURES

Although it is not possible to anticipate all potential disasters affecting the Water Company's water system, formulating procedures to manage and remedy several common emergencies is appropriate.

Water System Personnel Emergency Call-Up List

Each Water Company staff member handles after hours calls on a rotational basis. These rotations are one week in length and begin each Friday at 4:30 pm. The Water Company employs Americall answering service in Tacoma to handle after hours calls. AmeriCall is provided with the list of phone numbers for Water Company employees.

The Water Company publishes the emergency phone number in the local telephone directory as well as on every bill and their web site. The emergency phone number is also available on the Water Company answering machine at the regular business number. Table 6.4 provides an emergency phone list.

TABLE 6.4
Emergency Phone List

Agency/Group	Contact	Phone Number
Mt. View-Edgewood Water Company Fax line	Staff	253-863-7348 253-863-0752
Water Company General Manager	Jacki Masters, Cell	253-606-4548
Water Company Field Manager	Mike Craig, Cell	253-606-4549
Water Company Answering Service	Operator	253-620-4006
Washington State Department of Health NW Regional Office	John Ryding, P.E. After Hours, Staff Call	1-253-395-6757 1-877-481-4901
East Pierce Fire & Rescue	Day Phone	253-927-2313
City of Edgewood Fire/Police	Dispatcher	911
City of Edgewood Police	Direct line	253-798-4960
City of Puyallup	Water Department	253-841-5505
City of Milton	Water Department	253-922-8738
City of Sumner	Shawn Piper	253-299-5740
City of Fife	Water Department	253-922-9315
Pump Repair	Pump Tech, Inc.	1-206-644-8501
Charon Drilling	Dave Charon, Mobile Office	253-973-1709 253-847-5794
Pipe/Fitting Suppliers	H.D. Supply	253-840-8558
Pipe/Fitting Suppliers	Ferguson Waterworks	253-538-8275
Pipe/Fitting Suppliers	H.D. Fowler	253-863-8600
Calvert Technical Services (SCADA)	Shannon Calvert	1-509-370-4230
emGov Power, LLC	Main Number	1-704-849-8242
Generator Rental	Aggrecko, Inc.	1-206-939-3443
Control Valve and Maintenance Repair	G.C. Systems, Inc.	253-939-8322
Electrician	Electric Construction Co.	253-383-5393

**TABLE 6.4
Emergency Phone List (continued)**

Agency/Group	Contact	Phone Number
Water Testing Lab	Water Management Inc.	253-531-3121
Pierce County DEM EOC	Emergency Management	253-798-7470
Water Meters, Ferguson	Doug	253-538-8275
Qwest	Main Number	1-800-573-1311
Puget Sound Energy	Main Number	1-888-225-5773
Utility Locate Service	Account #24992	811
ECNW, Inc	Joe Dominczyk	253-952-7797
JKA Associates, Inc	John Knowles	253-539-1400
Gray & Osborne, Inc	Seattle Line	1-206-284-0860
RH2 Engineering, Inc	Tony Pardi	1-425-951-5400

Main Break

The following procedures are used for main breaks.

Main Break Categories

Type I Break	Type II Break	Type III Break	Type IV Break
Positive pressure maintained through completion of repair.	Controlled pipe repair with limited depressurization during pipe segment shutdown.	Uncontrolled loss of pressure at break site or depressurization elsewhere in the system.	Catastrophic main break or water loss event resulting in the complete loss of water service.
Pressure maintained in pipe during repair.	Pressure maintained at break site until pipe is exposed and trench dewatered. Shutdown limited to immediate valued off area. No loss of pressure elsewhere.	Pressure loss at break site while pipe is still buried or submerged and/or pressure loss elsewhere in the system.	Extensive water loss compared to system capacity, with no pressure/no water.
Contamination is unlikely.	Limited possibility of contamination.	Significant possibility of contamination.	Contamination likely or certain.

Type I Main Break Response

Assess environmental impacts and respond accordingly.

Mark the area to be excavated with white paint and call Washington 811. The utility number for MTVE is 24992. Request an emergency locate if delay of the repair is likely to cause damage to public or private property.

Set up traffic control as needed.

Excavate to below the main to create a sump and dewater. Maintain water level below break.

Disinfect repair parts and repair site by swab/spray with 1% chlorine solution.

Complete repair with pipe still pressurized.

Conduct low velocity flush to displace water in affected piping through nearest hydrant.

Type II Main Break Response

Assess environmental impacts and respond accordingly.

Mark the area to be excavated with white paint and call Washington 811. The utility number for MTVE is 24992. Request an emergency locate if delay of the repair is likely to cause damage to public or private property.

Set up traffic control as needed.

Provide customer notification using door hanger, personal contact, email, or reverse 911.

Shut off customer services in affected area using #2 valve on the Premises Isolation Assembly.

Excavate to below the main to create a sump and dewater. Maintain water level below break.

Follow established utility procedures to perform controlled shutdown of broken pipe segment. Lock-Out Tag-Out the valves using the S.W. Services Debris Cap.

Disinfect repair parts and repair site by swab/spray with 1% chlorine solution. If pipe replacement, disinfect new pipe section from both ends by swabbing. Also swab the cut ends of existing pipe and flush prior to installing the new pipe section.

Complete repair.

Conduct low velocity uni-directional flush to displace water in affected piping through nearest hydrants.

Flush all shut off services through test cock #4 on Premises Isolation Assembly. Turn on customer Valve #2 after flush.

If utility shuts off customer services in affected area and positive pressure is maintained throughout the system prior to depressurizing the break site, a boil water advisory is not needed.

Collect bacteriological/heterotrophic plate count samples to validate repair procedures. The utility may restore service before receiving the results.

Type III Main Break Response

Assess environmental impacts and respond accordingly.

Mark the area to be excavated with white paint and call Washington 811. The utility number for MTVE is 24992. Request an emergency locate if delay of the repair is likely to cause damage to public or private property.

Set up traffic control as needed.

Provide generic water main break notification and customer response steps on utility's website or directly to customers by door hanger, personal contact, email, or reverse 911 as soon as possible.

Review cross connection control program status, particularly compliance with premise isolation of high health hazards and assess risk of back siphon/backflow accordingly.

Call DOH and local health jurisdiction. Decide appropriate public notification message and methods.

Issue a boil water advisory (BWA) and update the utility's website to show impacted area(s).

Evaluate firefighting capacity and sanitation impacts and communicate with appropriate entities.

Shut off customer services in affected area using #2 valve on the Premises Isolation Assembly.

Shut down affected main and Lock-Out Tag-Out the valves using the S.W. Services Debris Cap.

Disinfect repair parts and repair site by swab/spray with 1% chlorine solution. If pipe replacement, disinfect from both ends by swabbing.

Complete repair.

Complete post-repair disinfection of the distribution system, applying AWWA Standard C651 Section 4.11.3.3, Water Research Foundation Project 4307, or other applicable standard for guidance on disinfectant levels, if:

- Pressure is lost at the break before dewatering the trench and isolating the break.
- The break results in loss of pressure at points beyond break site, depending on degree of risk associated with extent, duration, and type of services affected.

Conduct a uni-directional scouring flush (at least three feet/second). Flush at maximum practical flow rate until at least ten pipe volumes are displaced and flush water runs clear.

Advise customers to flush household plumbing when water service returns.

Collect bacteriological/heterotrophic plate count samples to verify effectiveness of response and provide basis for lifting the boil water advisory. The number of samples should reflect the impacted service population and service area.

Rescind BWA based on water quality monitoring results.

Type IV Main Break Response

A Type IV break is a Type III break, with significant impact on system-wide performance. Follow Type III response plus the following.

Assess utility capacity to deal with event and seek aid as soon as possible.

Notify local fire authority of current and expected status of storage volume and system pressure.

Depletion of stored water may affect flushing capacity following repairs, delaying full restoration of water service and lifting the BWA.

Utility may need to include conservation messages with BWA notification.

Continually assess storage, source, and distribution capacity as related to post-repair flushing needs.

Power Failure

Various types of weather can cause loss of power, such as wind, lightning, freezing rain, and snowstorm. The Water Company is well prepared in the event of an extended power failure. Emergency generators are installed at the Well 1R and 8 sites, Well 9, Well 11, North Reservoir Booster Station, South Reservoir Booster Station, and the Office/Shop site. The emergency generator at Well 9 can be moved to other wells if necessary. The North Reservoir Booster Station generator is capable of running for 24 hours on a single tank of fuel. The South Reservoir Booster Station and Office generators are capable of

running for 40 hours on a single tank of fuel. The Water Company also maintains a 1,000 gallon double-wall fuel storage tank at the office.

Severe Earthquake

System Component	Action
Wells: Wells may have lost power	Operate generators as needed until power is restored
Distribution System: Distribution and transmission mains may be broken	Isolate broken sections and repair
Reservoirs: Reservoirs may be leaking or structurally damaged	Check reservoirs for structural damage and drain if in danger of bursting. Check reservoirs for cracks and leaks, and seal or drain as required

High Water and Flooding

Heavy snowmelt and/or rains cause the water level to rise and reach a flood level.

System Component	Action
Distribution System, Pumps, and Reservoirs: No effect, reservoirs are above flood level	No action is necessary.

Severe Snowstorm

Heavy snowfall may bring motor vehicle traffic to a standstill. Employees may not be able to reach problem area.

System Component	Action
Distribution System: Transportation to monitor system and make repairs will be limited	Request the City of Edgewood to plow streets if necessary. Have chains and other snow gear ready for maintenance equipment and vehicles. Valve locations are kept current in each truck map book
Pumps and Reservoirs: No immediate effect. Snow may prevent access	Request the City of Edgewood to plow streets if necessary. Have chains and other snow gear ready for maintenance equipment and vehicles. Valve locations are kept current in each truck map book

Contamination of Water Supply

Procedures to isolate the water supply for such items as main breaks or contamination from an isolated source are listed below.

Distribution System Contamination
Close valves, if possible, to isolate source
Repair and or remove source of contamination
Flush previously contaminated section and test until free of contamination prior to resumption of use

Reservoir Contamination
Close valves, if possible, to isolate Reservoir
Re-sample to confirm contamination
Check distribution system and wells for contamination
Inspect vent screens, hatches, and piping to identify source of contamination
Disinfect Reservoir if bacteriological and/or HPC standards are exceeded
Flush Reservoir and test until free of contamination prior to resumption of use

CROSS CONNECTION CONTROL PROGRAM

The purpose of the Water Company's cross-connection control program is to protect the public water system, as defined in WAC 246-290-490 from contamination via cross-connections. Administrative rules were approved by the Board of Directors the 11th day of April, 2001. The complete Cross Connection Control Plan can be found in Appendix J.

The most current version of WAC 246-290-490 shall be the Water Company's minimum standard with the following additions;

- The minimum requirement for all service all connections is a DCVA installed as premises isolation located immediately downstream from the water meter prior to any taps or in a location acceptable to the Water Company.
- The minimum requirement for all Table 9 premises and all new non-residential service connections (e.g. commercial, industrial, etc.) is a RPBA installed as premises isolation located immediately downstream from the water meter prior to any taps or in a location acceptable with the Water Company.
- The minimum requirement for a residential fire system connection is a DCVA.
- The minimum requirement for all other fire systems is an RPDA installed within three (3) feet of a looped water main.

As of October 31st, 2017 the Water Company completed the Premises Isolation Program and has 100% of the system protected from potential backflow or back siphonage. The Water Company has two staff positions for Backflow Assembly Testers and tests all

residential assemblies each year. Owners of commercial, industrial, municipal, school, and fire systems are required to test their assemblies each year. The following is a Public Information Bulletin regarding our robust Cross Connection Control Program:

CROSS CONNECTION CONTROL PROGRAM

Mt. View-Edgewood supplies natural, untreated water to over 3,100 homes and businesses within the City of Edgewood. Our source is abundant and won the “Best Water in the USA” award from the National Rural Water Association in 2012. Rather than treat the water, we choose to use Best Management Practices (BMPs) to ensure the quality of the water we deliver.

One of these BMPs is to protect our system from potentially contaminated water flowing back through a water meter and into our system. As of October 31, 2017 100% of MTVE’s water services will include a backflow prevention assembly as premises isolation; currently, there are 13 yet to be installed. In order to ensure ongoing protection, each assembly is tested each year.

All commercial, industrial, municipal, school, and fire system must have a reduced pressure principle assembly installed as premises isolation and owners or managers are sent a letter each year requiring the private assembly be tested within the next 30 days. If they do not comply, another letter is sent and a fee is charged against their account. If another 30 days passes without compliance, their meter is turned off until a tester is on site to complete the test.

Residential water services include a double check valve assembly unless a Table 9 hazard is present, then a RPBA is used. MTVE retains ownership of these assemblies. We have Backflow Assembly Testers on staff to ensure they are routinely maintained. The system is divided into 12 meter routes and each month the assemblies in the route corresponding to the number of the month are tested by these staff members at no cost to the homeowner. This is a service that MTVE provides to our membership as one way of ensuring safe, reliable, untreated water.

RECORD-KEEPING AND REPORTING

The Water Company refers to WAC 246-290-480 for record-keeping and reporting requirements.

RECORD-KEEPING REQUIREMENTS

Tale 6.5 lists the operational and water quality records and the minimum retention period for the Water Company. These historic records are of value when trending system events and evaluating the system in preparation of the Water System Plan

TABLE 6.5
Record-Keeping Requirements

Record Type	Minimum Retention Time
Bacteriological	Five Years
Turbidity	Five Years
Chemical Analysis	As long as system is in operation
Daily source meter readings	Ten Years
Other operational and analysis records	Three years
Records of action taken to correct violations	Three years after last corrective action taken
Records of Public notification	Three years after last corrective action taken
Communication regarding sanitary surveys	Ten years
Special purpose investigations	Ten years
Construction documents and reports	As long as system is in operation
Inspection reports, and approvals	As long as system is in operation

REPORTING REQUIREMENTS

The Water Company is required to provide information regarding water quality violations to DOH within 24 hours if any of the following incidents occur:

- Failure to comply with the primary MCL requirements of WAC 246-290.
- Failure to comply with the monitoring requirements of WAC 246-290.

- A violation of a primary MCL.

WAC 246-290 outlines additional reporting requirements that include monthly reporting and DOH required forms.

CUSTOMER COMPLAINT PROGRAM

Customers typically communicate concerns to the Water Company by phone, through our web site email link, or by including a note with their water payment. When a complaint is received a service order is created detailing the customers concern. The service order is given to the Field Manager (or the General Manager in the Field Managers absence) and he determines the type of response that is needed.

In the case of a water quality complaint the customers meter is pulled and a water sample is taken from the angle stop. The sample is sent to Water Management Lab for a Coliform and HPC test. The customer is also instructed to clean their sink strainers, replace any filters they may have per the manufacturer's recommendation, and to drain their hot water tank. The Water Company shares the test results with the customer after they are received. These complaints are tracked in order to identify any trends in the system.

Suspected leaks are investigated and repaired as needed. These complaints are tracked in order to identify any trends in the system. If a suspected leak turns out to be ground water the customer is notified so they do not think their call has been forgotten.

Customer complaints regarding field staff, office staff, and contractors are given to the General Manager for investigation and follow-up. Complaints against the General Manager are given to the Board President for investigation and follow-up.

Routine Total Coliform Monitor Samples

Positive Result

Negative Result

- Initiate Repeat Monitoring (3 Repeat Samples. Test for E.Coli)
- Count Positive Result(s) Toward Level 1 Assessment Trigger

Continue Routine Monthly Sampling

All 3 Repeat Samples are Negative for Both E. Coli and Total Coliform

1 or More Repeat Samples are Total Coliform Positive

1 or More Repeat Samples are E. Coli Positive

- Count Negatives in Total Sample Count for Level 1 Assessment Trigger
- Complete Routine Monitoring for Month per Monitoring Plan

- Count Positives Toward Level 1 Assessment Trigger
- Count Negatives in Total Sample Count for Level 1 Assessment Trigger
- Repeat Monitoring Continues Unless Level 1 Trigger Exceeded (or Other Sample Results Yield Violation(s) or Trigger Exceedance(s))
- Complete Routine Monitoring for Month per Plan

- E. Coli Violation
- Notify DOH of Positive Sample(s) and Violation
- Initiate Level 2 Assessment Level 1 Trigger Exceeded (or Other Sample Results Yield Violation(s) or Trigger Exceedance(s))
- Repeat Monitoring Complete
- Complete Routine Monitoring for Month per Plan

Repeat Sample Requirements

- Within 24 hours of Notification of Positive Sample
- 3 Samples Required for each Total Coliform positive result
- Repeat at Upstream & Downstream Sites per Monitoring Plan or DOH approved protocol

- Issue Teir 1 Public Notice
- Return to Routine System Monitoring
- Conduct Level 2 Assessment
- Submit Assessment to DOH
- Correct Sanitary Defect(s) Identified

Subsequent Repeat Sample is Negative for E. Coli and Total Coliform

Subsequent Repeat Sample is Total Coliform Positive

Subsequent Repeat Sample is E. Coli Positive

DOH: Washington State Department of Health
 Northwest Regional Office: (253)395-6750
 After-Hours Hotline (877)481-4901

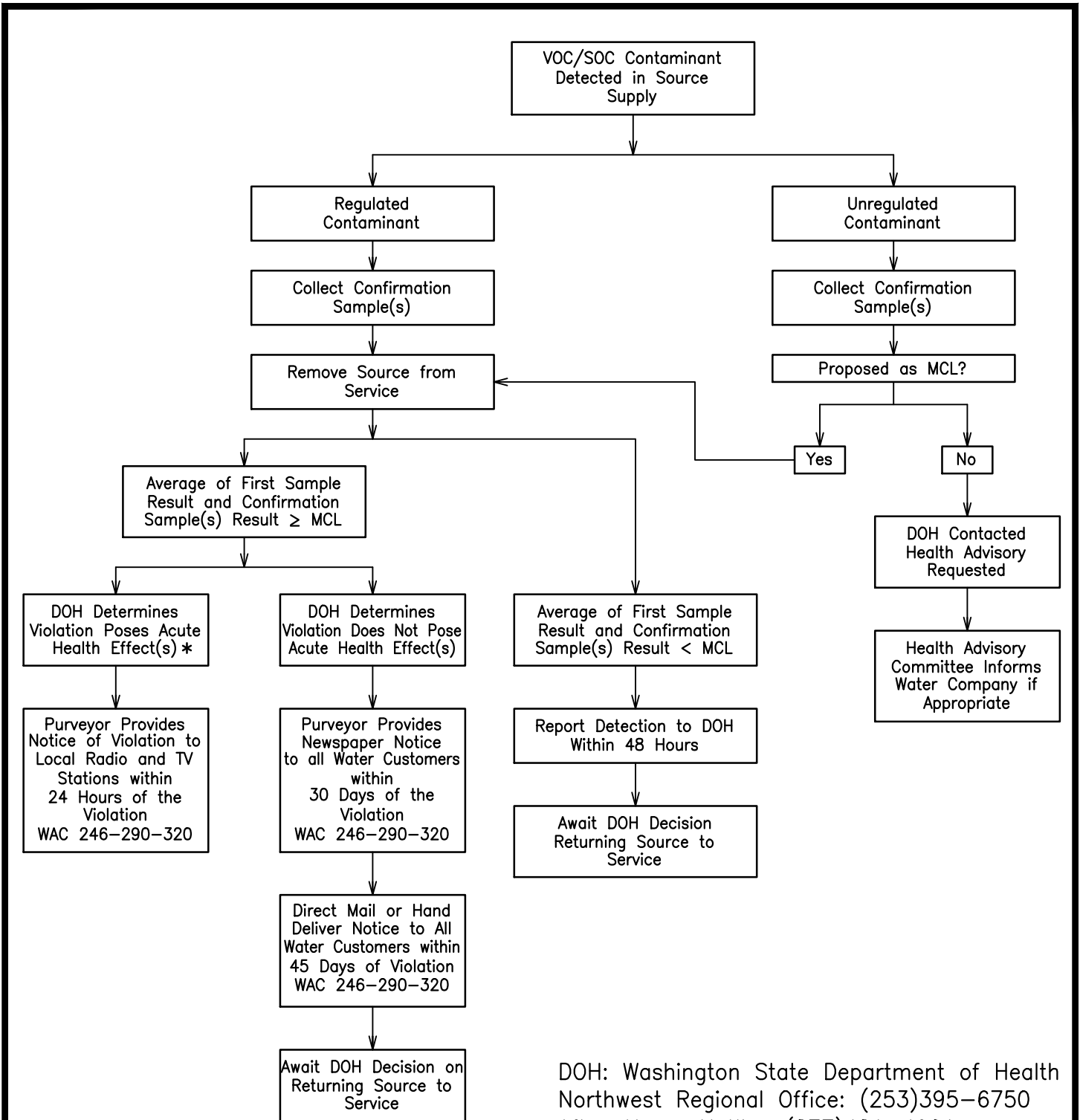


**MT. VIEW EDGEWOOD WATER COMPANY
 WATER SYSTEM PLAN**

**REVISED TOTAL COLIFORM RULE
 MONITORING PROCEDURE**

FIGURE 6.1

2016\2161713928-MTVE\8.5X11\figures\Fig6-2voc-soc-det 1=1 9-27-17 BSO



DOH: Washington State Department of Health Northwest Regional Office: (253)395-6750 After-Hours Hotline (877)481-4901

WAC: Washington Administrative Code

* A violation of the 10.0 mg/L nitrate MCL constitutes an acute health effect concern.



MT. VIEW - EDGEWOOD WATER COMPANY WATER SYSTEM PLAN

VOLATILE ORGANIC CHEMICAL/SYNTHETIC ORGANIC CHEMICAL DETECTION PROCEDURE

FIGURE 6-2

Inorganic Chemical/Physical
Characteristic Detected in
Source of Supply

Primary MCL Violation

Collect Confirmation
Sample(s)

Remove Source from
Service

Report Violation to DOH
within 48 hours
WAC 246-290-320, -480

DOH Determines
Violation Poses Acute
Health Effect(s) *

Purveyor Provides
Notice of Violation to
Local Radio and TV
Stations within
24 Hours of the
Violation
WAC 246-290-320

DOH Determines
Violation Does Not Pose
Acute Health Effect(s)

Purveyor Provides
Newspaper Notice to
All Water Customers
within
30 Days of the
Violation
WAC 246-290-320

Direct Mail or Hand
Deliver Notice to All
Water Customers within
45 Days of Violation
WAC 246-290-320

Await DOH Decision on
Returning Source to
Service

Unregulated
Contaminant

Collect Confirmation
Sample(s)

Proposed as MCL?

Yes

No

DOH Contacted, Health
Advisory Requested

Health Advisory
Committee Informs
Water Company if
Appropriate

DOH: Washington State Department of Health
Northwest Regional Office: (253)395-6750
After-Hours Hotline (877)481-4901
WAC: Washington Administrative Code

* A violation of the 10.0 mg/L nitrate MCL
constitutes an acute health effect concern.

**MT. VIEW - EDGEWOOD WATER COMPANY
WATER SYSTEM PLAN**

**INORGANIC CHEMICAL/PHYSICAL
CHARACTERISTIC DETECTION PROCEDURE**

FIGURE 6-3

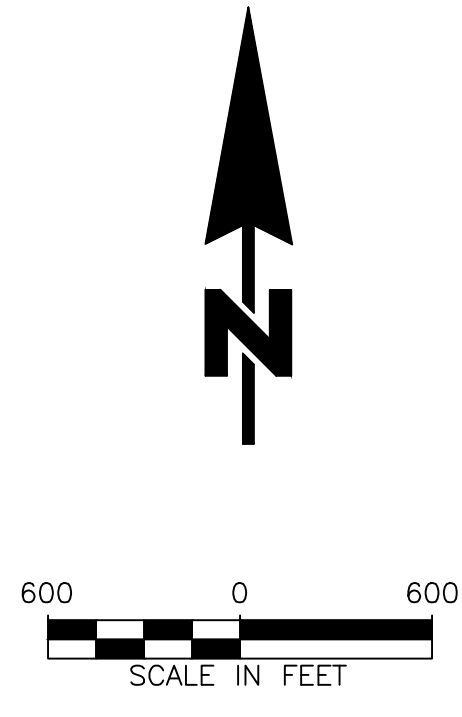
2016\2161713928-MTVE\8.5X11figures\Fig6-3Inorg-chem-ddt.1=1.9-27-17.B50



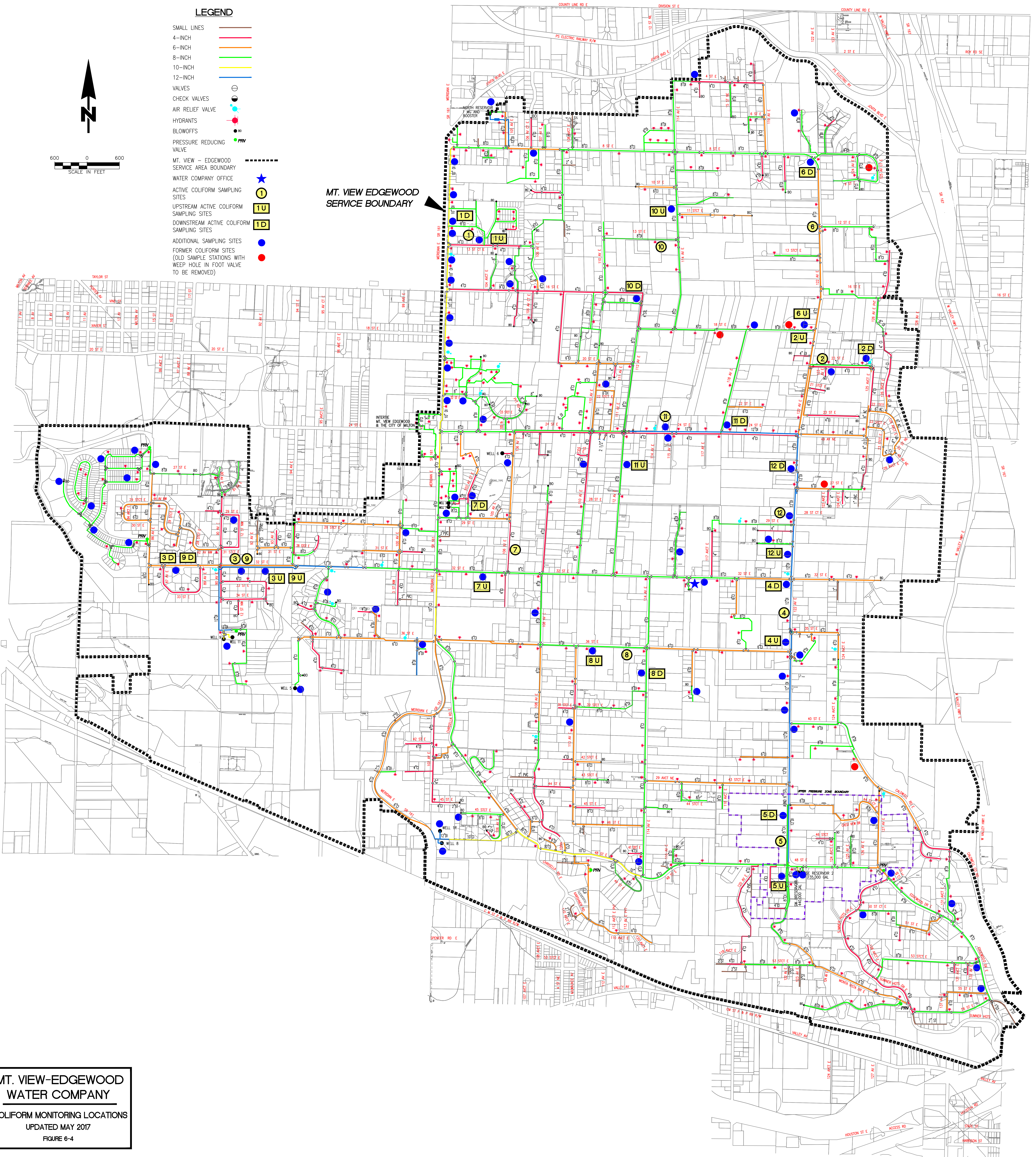
MT. VIEW EDGEWOOD WATER COMPANY - DOH ID 568203

LEGEND

- SMALL LINES
 - 4-INCH
 - 6-INCH
 - 8-INCH
 - 10-INCH
 - 12-INCH
- VALVES
 - CHECK VALVES
 - AIR RELIEF VALVE
 - HYDRANTS
 - BLOWOFFS
 - PRESSURE REDUCING VALVE
- MT. VIEW - EDGEWOOD SERVICE AREA BOUNDARY
- WATER COMPANY OFFICE
- ACTIVE COLIFORM SAMPLING SITES
- UPSTREAM ACTIVE COLIFORM SAMPLING SITES
- DOWNSTREAM ACTIVE COLIFORM SAMPLING SITES
- ADDITIONAL SAMPLING SITES
- FORMER COLIFORM SITES (OLD SAMPLE STATIONS WITH WEEP HOLE IN FOOT VALVE TO BE REMOVED)



MT. VIEW EDGEWOOD SERVICE BOUNDARY



MT. VIEW-EDGEWOOD WATER COMPANY
 COLIFORM MONITORING LOCATIONS
 UPDATED MAY 2017
 FIGURE 6-4



CHAPTER 7

DESIGN STANDARDS

OBJECTIVE

The objective of this chapter is to document the Water Company's design and construction standards to allow the Water Company to obtain DOH approval to utilize the alternative review process for construction of new and replaced water distribution facilities. Through this process, a purveyor needs no further approval from DOH for distribution project reports, construction documents, or installation of distribution reservoirs and storage tanks, booster pump facilities, transmission mains, distribution mains, pipe linings, and tank coatings. Source of supply facilities are not eligible for the alternative review process.

Thus chapter includes the following elements:

- System Standards, Policies and Procedures
- Project Review Procedures
- Policies and Requirements for Outside Parties
- Design Standards
- Construction Standards
- Construction Inspection Procedures

These items can be found in the Water Company's By-Laws and Policy Book located in Appendix B and in the Water Company's Development Standards located in Appendix E.

SYSTEM STANDARDS, POLICIES, AND PROCEDURES

The Water Company's Development Standard details requirements for improvements within the public right-of-way, public easements and private easements; improvements required within the proposed right-of-way of new subdivisions; improvements intended for maintenance by the Water Company; and for all other improvements for which the Water Company's by-laws requires approval from the Water Company.

PROJECT REVIEW PROCEDURES

A mandatory design meeting is held with the Water Company and/or Developer and their engineer prior to preparation of Construction Documents (plans). At this meeting the development requirements and details are discussed. The Developer is required to purchase the current Development Standards. The engineer prepares the plans and submits three (3) copies to the Water Company. The plans are reviewed for compliance with the Development Standards. Plans that meet the Development Standards are stamped "approved" by the Water Company's Engineer or designee. Plans that do not meet the standards are marked-up and returned for

correction and resubmittal. Construction may not proceed unless the Water Company's Engineer or designee has stamped and signed the drawings "approved." The Water Company and/or Developer's contractor is required to have a current approved plan set on the job at all times.

POLICIES AND REQUIREMENTS FOR OUTSIDE PARTIES

The policies and requirements for development within the Water Company can be found in Appendix E. These are taken from the Water Company's Development Standards. Included in the appendix are written descriptions of the policies regarding the water system and standard details showing construction requirements.

DESIGN STANDARDS

Appendix E contains the water design standards from the Water Company's Development Standards.

Any improvements not specifically covered by the Water Company's Development Standards must meet or exceed the *2010 (or most current edition) Standard Specifications for Road, Bridge, & Municipal Construction* published by the Washington State Department of Transportation and the Washington Chapter of the American Water Works Association and any current amendments to said document.

CONSTRUCTION STANDARDS (MATERIALS AND METHODS)

Appendix E contains the water design standards from the Water Company's Development Standards.

CONSTRUCTION INSPECTION PROCEDURES

The Water Company inspects all projects during and after construction to ensure that they are constructed in accordance with the Development Standards and the approved plans. This inspection includes being present during material delivery, exposing and tying into existing facilities, water main installation, service installation, disinfection procedures, pressure test procedures, and water quality sampling procedures to ensure that all have been properly performed. As-builts of the final system are to be submitted by the Water Company's Contractor and/or Developer for each project. Project approval and water service will not be provided until all requirements are satisfied.

If a Construction Report is required for the project by Chapter 246-290-040 WAC, the report is to be prepared by the Developer's engineer for the new development and by the Water Company's Engineer or designee for system improvements. New Development Construction Reports are submitted to the Water Company's Engineer or designee for review and approval. System Improvement Construction Reports are submitted to the Department of Health for review and approval.

CHAPTER 8

CAPITOL IMPROVEMENTS

OBJECTIVE

The objective of this chapter is to present the Water Company's Capital Improvement Program. These improvements are assessed and prioritized for implementation through 2027. The Capital Improvement Program has been developed in conjunction with the financial capabilities and recommendations presented in Chapter 9, Financial Program.

This chapter includes the capital improvement project schedule for distribution and other identified capital needs.

SOURCE OF SUPPLY

The Water Company has current source capacity to meet the estimated internal system demands through this 20 year planning period based on the analysis presented in Chapter 3.

STORAGE

In August of 2009 the Water Company contracted RH2 to perform a seismic vulnerability study on the South Reservoirs. This study determined that the existing ring walls must be expanded and anchor added to increase the structural reliability of these reservoirs. The Water Company applied for a grant in 2009 to fund this upgrade. On February 25th, 2011 FEMA notified the Water Company that the grant was approved. The total project cost is estimated at \$1,044,585 with \$783,439 being funded by the FEMA grant. The State match is \$130,573 and the Water Company match is \$130,573. Part of the Water Company match will be in-kind with labor and equipment leaving a total to budget of \$68,515.

S-1: New Reservoir and Booster Station at the South Reservoir site.

The Water Company has current storage capacity to meet demand until approximately 2023 based on the analysis in Chapter 3.

DISTRIBUTION SYSTEM

The Water Company has identified structures of water main that need to be upgraded due to age, type of material, and size. All water services on the upgraded mains will be replaced. All hydrants on the upgraded mains will be replaced to comply with the current spacing requirements. Also two Well sites will be upgraded. The projects are as follows:

DS-1: Replace Well 8 pump assembly, control valves, and building.

DS-2: Replace main along 32nd St from 110th Ave E to 112th Ave E with 8-inch main. Relocate out of flooded area to shoulder of the road.

DS-3: Remove Well 3 pump and building. Convert well to aquifer monitoring site.

DS-4: Ugly List

DS-5: Ugly List

DS-6: Ugly List

DS-7: Ugly List

DS-8: Replace 1,750 lf of 6-inch Asbestos Cement main along 24th Street E. and 125th Ave. Ct. E., between 122nd Ave. E. and 22nd St. Ct. E. with 8-inch main.

DS-9: Replace 1,550 lf of 6-inch Asbestos Cement main along 22nd Street Ct. E. and 23rd Street E., beginning at 125th Avenue Ct. E. with 6-inch main.

SUMMARY AND PRIORITIZATION OF RECOMMENDED IMPROVEMENTS

Prioritization schedules and cost summaries for the recommended ten year capital improvements are shown in Table 8.1. All costs were calculated in 2017 dollars with inflation adjusted at 2.5% for future years. Detailed cost estimates for the improvements are included in Appendix K. Figure 8.1 is a water system facility map which shows the locations of the individual improvement projects.

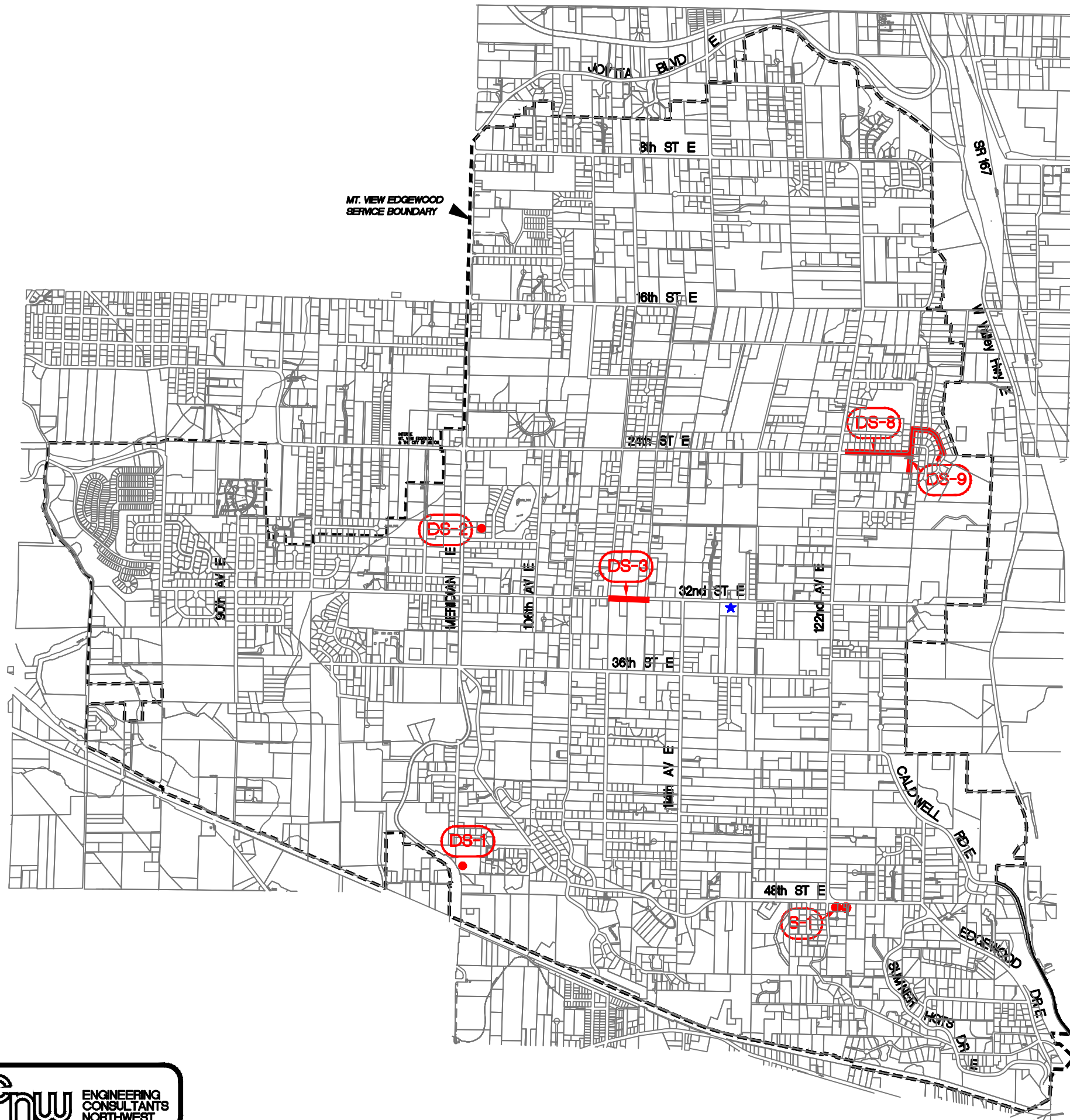
Longer range system improvements are listed in Table 8.2.

**TABLE 8.1
Ten-Year Capital Improvements**

Year	Type of Project	Improvement	Purpose	Estimated Cost⁽¹⁾
2018 2019	Storage S-1	New Reservoir and Booster Station at the South Reservoir site.	Increase storage and improve system reliability	\$3,025,338
2020	Distribution System DS-1	Replace Well 8 pump assembly, control valves, and building.	Increase service capacity, pressure, and fire flow to the system.	\$382,982
2020	Distribution System DS-2	Remove Well 3 pump and building. Convert well to aquifer monitoring site.	Improve system reliability	\$73,178
2021	Distribution System DS-3	Replace main along 32 nd St from 110 th Ave E to 112 th Ave E with 8-inch main.	Improve system reliability	\$476,733
2022	Distribution System DS-4	Ugly List	Increase service capacity, pressure, and fire flow to the system.	\$392,574
2023	Distribution System DS-5	Ugly List	Increase service capacity, pressure, and fire flow to the system.	\$402,388
2024	Distribution System DS-6	Ugly List	Increase system reliability, capacity, pressure, and fire flow.	\$412,448
2025	Distribution System DS-7	Ugly List	Increase system reliability, capacity, pressure, and fire flow.	\$422,759
2026	Distribution System DS-8	Replace 1,750 lf of 6-inch Asbestos Cement main along 24 th St. E. and 125 th Ave. Ct. E., between 122 nd Ave. E. and 22 nd St. E. with 8-inch main.	Increase system reliability, capacity, pressure, and fire flow.	\$503,036
2027	Distribution System DS-9	Replace 1,550 lf of 6-inch Asbestos Cement main along 22 nd St. Ct. E. and 23 rd St E., beginning at 125 th Ave. Ct. E. with 6-inch main.	Increase system reliability, capacity, pressure, and fire flow.	\$426,455

(1) All costs were calculated in 2017 dollars with inflation adjusted at 2.5% for future years.

2018\2116173\DWG\2017-11\173\area\FIGURE8-1-Improvements 1-2000 05-11-17.baw



TEN-YEAR CAPITAL IMPROVEMENTS SUMMARY

PROJECT	DESCRIPTION
S-1	NEW RESERVOIR AND BOOSTER PUMP STATION
DS-1	REPLACE WELL 8 PUMP ASSEMBLY
DS-2	REMOVE WELL 3 PUMP AND BUILDING
DS-3	REPLACE 1,000 LF OF 6-INCH MAIN WITH 10-INCH MAIN
• DS-4	UGLY LIST
• DS-5	UGLY LIST
• DS-6	UGLY LIST
• DS-7	UGLY LIST
DS-8	REPLACE 1,750 LF OF 6-INCH MAIN WITH 8-INCH MAIN
DS-9	REPLACE 1,550 LF OF 6-INCH MAIN WITH 6-INCH MAIN

NOTE: ALL WATER MAIN LENGTHS ARE APPROXIMATE.

• **DS-4 THRU DS-7** VARIOUS. SEE APPENDIX L FOR LOCATIONS.

**MT. VIEW-EDGEWOOD
WATER COMPANY**

CAPITAL IMPROVEMENT PLAN
FIGURE 8-1

TABLE 8.2
Twenty-Year Capital Improvements

Year	Type of Project	Improvement	Purpose	Estimated Cost₍₁₎
TBD	Production	Secure additional water rights and	Improve production capacity	\$250,000
TBD	Production	Drill and equip an additional well east of the Wells 9 & 11 site. Approximately 750 GPM.	Improve production capacity	\$850,000
TBD	Distribution	Replace 600' of 8" C.I. with 8" D.I. and move onto road shoulder along 114 th Ave E from the 1500 block to the 1700 block.	Improve system reliability	\$230,000
TBD	Distribution	Replace 350' of 4" C.I. with 8" D.I. along 90 th Ave E from 29 th St E to 32 nd St E.	Improve system reliability	\$150,000
TBD	Distribution	Replace 500' of 4" C.I. with 8" D.I. along 114 th Ave E from 17 th St E to 18 th St E.	Improve system reliability	\$210,000
TBD	Distribution	Continue to loop system and eliminate dead ends.	Improve system reliability	TBD
TBD	Production	Raise Well 6 wellhead and replace piping	Improve production reliability	\$75,000

All costs were calculated in 2017 dollars

OPERATIONS AND MAINTENANCE PROJECTS

The Water Company has various operation and maintenance projects it plans to complete over the next six years. These will most likely include telemetry additions (SCADA), computer upgrades, and facilities maintenance. The Water Company will budget, on average, \$25,000 per year for these projects.

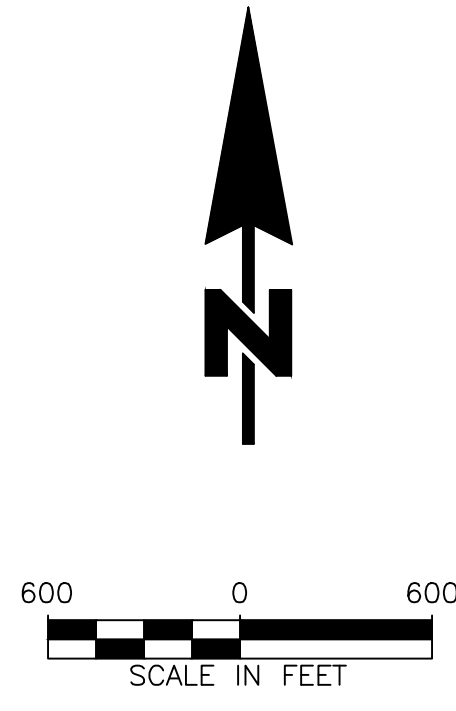
FUTURE MAIN EXTENSIONS

The Water Company is very concerned with proper water turnover in the distribution system, eliminating dead ends, and the orderly build-out of the system. A map was created showing areas that require future main extensions and/or looping of the existing water mains. This information is used when Developers inquire about short plats and development in areas that need water mains to serve their project. The Water Company created a map showing the areas that require future main extensions and looping. This map is titled as Figure 8.2 and can be found in the back pocket. This map depicts the minimum planned main extensions; additional main extensions may become necessary as the system develops.

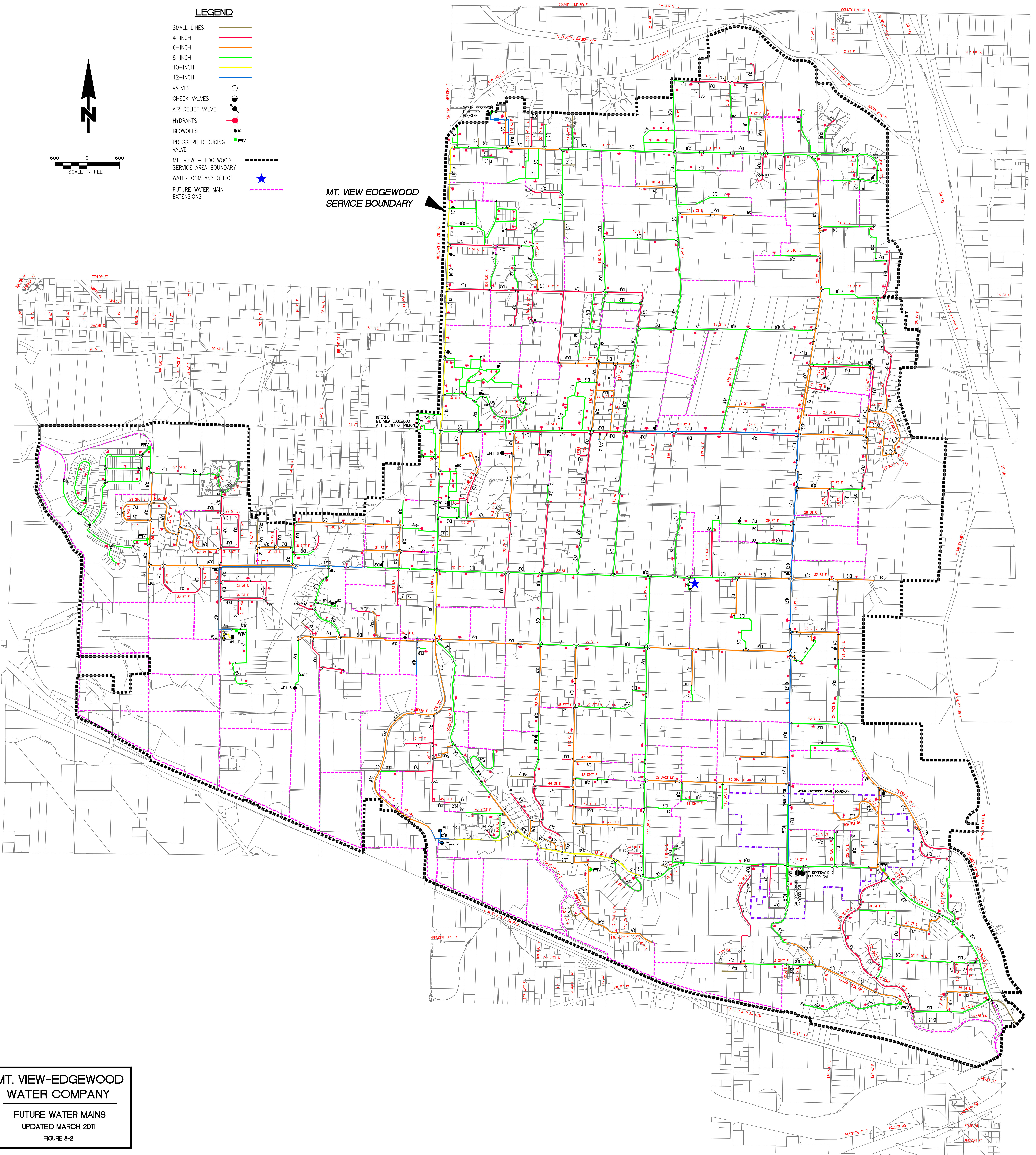
MT. VIEW EDGEWOOD WATER COMPANY - DOH ID 568203

LEGEND

- SMALL LINES
- 4-INCH
- 6-INCH
- 8-INCH
- 10-INCH
- 12-INCH
- VALVES
- CHECK VALVES
- AIR RELIEF VALVE
- HYDRANTS
- BLOWOFFS
- PRESSURE REDUCING VALVE
- MT. VIEW - EDGEWOOD SERVICE AREA BOUNDARY
- WATER COMPANY OFFICE
- FUTURE WATER MAIN EXTENSIONS



MT. VIEW EDGEWOOD SERVICE BOUNDARY



MT. VIEW-EDGEWOOD WATER COMPANY

FUTURE WATER MAINS

UPDATED MARCH 2011

FIGURE B-2



CHAPTER 9

BUDGETS

INTRODUCTION

The Water Company is a private, not-for-profit, mutual serving the City of Edgewood. Revenues are obtained from water sales, sales of memberships into the company, service connection installation fees, and other resources including cellular and radio antennae site leases held.

A seven-member Board oversees the operations of the Water Company, whose monthly meetings include financial statement review. In addition, there is a three-member Finance Committee made up of Board members that, along with the General Manager and accounting staff, review and advise the Board on financial and capital improvement matters.

The Finance Committee meets throughout the year to review and make adjustments as needed regarding our current economic state and cash flow. During these meetings the Water Company's current and future financial situation is reviewed using our Financial Forecaster as shown in Figure 9-1. This tool is setup using Excel software and has historical, current, and future financial data. It details our cash, revenue, expenses, debt, and planned capital improvement projects. When planning capital improvement projects our Board can immediately view the impact on our future cash flow using the Financial Forecaster.

EXISTING RATES AND CHARGES

WATER RATES

The existing water rates for the Water Company as of December 31, 2016 are summarized in Table 9-1. The bi-monthly “ready to serve” rate does not include any water consumption. The first unit of multiple units on one service will be charged the ready to serve meter size rate plus consumption. Additional units will be charged the multi-unit rate of \$41.45 per unit. Additionally, each service connection is charged a bi-monthly Fire Protection fee (\$5.00 or \$15.00) based on the square footage of the largest structure served by that meter. This fee brings in the revenue needed to help build and maintain the over-sizing of the distribution system to insure it meets the fire flow standards set by the City of Edgewood.

**TABLE 9-1
2016 Water Rates**

Bi-Monthly Ready to Serve (Flat) Rate	
Meter Size	Rate
5/8-inch	\$41.45
3/4-inch	\$41.45
1-inch	\$58.03
1.5-inch	\$99.39
2-inch	\$149.00
3-inch	\$264.46
4-inch	\$419.35
6-inch or larger	Contact the Water Company
Fire Protection	Fee
Up to 3,600 sq. ft.	\$5.00
Over 3,600 sq. ft.	\$15.00
Step Consumption Rate (for all water consumption)	
0-1000 CF	\$0.0115/CF
1001-2500 CF	\$0.0145/CF
2501-5000 CF	\$0.0155/CF
5001 CF and up	\$0.0175/CF

METER INSTALLATION CHARGES

**TABLE 9-2
Meter Installation Charges**

Description	3/4" Meter	1" Meter	2" Meter & Up
Short Service	\$2,000.00	\$2,100.00	Priced upon request
Long Service (1)	2,900.00	3,000.00	Priced upon request
Drop-in and DCVA	1,500.00	1,600.00	Priced upon request
Drop-in – Existing DCVA	\$750.00	\$800.00	Priced upon request

(1) A long service is defined as a service which crosses a road to reach the property being served.

MEMBERSHIP CHARGES

The current charge for a membership with the Water Company is \$7,000.00 for a single family residence (SFR). Additional fees apply to commercial and multi-family residences. Transfer fees are also charged for transferring a membership from one owner to another. Membership transfers most commonly take place during home sales.

FINANCIAL STATUS OF EXISTING UTILITY

The Water Company's fiscal year begins January 1 and ends December 31. Water sales make up the majority of revenue and additional revenue is comprised of new service connections, rental/lease income from cellular and radio antennae, and developer funded service extension inspections. Other revenue comes from membership transfers and interest earned on cash reserves.

Expenses realized by the Water Company are categorized below. Cost-Of-Service (COS) expenses include field staff payroll in addition to repairs & maintenance on our distribution system, meters & services, wells & reservoirs, and field trucks & equipment. Administrative Costs are inclusive of administrative staff payroll, office equipment & services, and supplies while Other Expenses include building repairs & maintenance and interest expense on loans. Tables 9-3, 9-4, and 9-5 summarize the recent Water Company revenue and expense history.

TABLE 9-3
Historical Revenues

Operating Revenues	2012	2013	2014	2015	2016
Water Sales Customers	\$1,213,535	\$1,256,741	\$1,316,237	\$1,391,977	\$1,531,302
New Service Connection Related Rev	\$144,154	\$224,468	\$194,440	\$279,124	\$346,414
Lease/Rental Revenue	\$150,414	\$148,461	\$149,161	\$155,833	\$165,211
Developer Ext/Inspection Revenue	\$0	\$0	\$0	\$0	\$0
Other Revenue	\$759,416	\$220,440	\$66,090	\$119,340	\$78,723
Revenues Total	\$2,267,519	\$1,850,110	\$1,725,928	\$1,946,274	\$2,121,650

**TABLE 9-4
Historical Expenditures**

Operating Expenditures	2012	2013	2014	2015	2016
Cost of Service	\$874,423	\$877,240	\$970,134	\$1,091,489	\$1,209,455
Administrative	\$490,025	\$565,928	\$508,330	\$480,825	\$377,536
Other Expenses	\$54,219	\$37,487	\$13,109	\$20,573	\$66,290
Total Expenditures	\$1,418,667	\$1,480,655	\$1,491,573	\$1,592,887	\$1,653,281

**TABLE 9-5
Historical Revenues - Expenditures**

Net	2012	2013	2014	2015	2016
Revenues	\$ 2,267,519	\$1,850,110	\$1,725,928	\$1,946,274	\$2,121,650
Expenditures	\$1,418,667	\$1,480,655	\$1,491,573	\$1,592,887	\$1,653,281
Revenues - Expenditures	\$848,852	\$369,455	\$234,355	\$353,387	\$468,369

As of December 31, 2016, the Water Company had approximately \$2,107,609 in reserves.

PROJECTED OPERATION AND MAINTENANCE EXPENSES

Growth projections for operating revenues are shown in Table 9-6. Increases in rates and fees, if any, are determined directly from the Finance Committee that meets regularly to monitor the financial viability of the water company. These increases are derived using various planning factors including inflation rates, growth projections, the current local economic state, the urgency for improvements to the Water Company’s infrastructure, and maintaining the approved cash reserves.

TABLE 9-6
Projected Revenues

Operating Revenues	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Residential Water Bill (bi-monthly)	\$77.27	\$79.20	\$81.18	\$83.21	\$85.29	\$87.42	\$89.61	\$91.85	\$94.15	\$96.50
% Rate Increase to the Base Rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Water Sales to Customers (increases due to projected growth)	\$1,656,050	\$1,674,146	\$1,752,992	\$1,752,992	\$1,752,992	\$1,814,432	\$1,814,432	\$1,814,432	\$1,814,432	\$1,814,432
New Connection Related Revenue	\$68,586	\$61,178	\$551,777	\$62,383	\$102,997	\$553,617	\$64,245	\$64,881	\$65,523	\$66,173
Lease/Rental Revenue	\$170,000	\$170,000	\$170,000	\$170,000	\$170,000	\$170,000	\$170,000	\$170,000	\$170,000	\$170,000
Developer Extension Revenue										
Other Revenue	\$55,500	\$55,500	\$55,500	\$55,500	\$55,500	\$55,500	\$55,500	\$55,500	\$55,500	\$55,500
Total Revenue	\$1,950,136	\$1,960,824	\$2,530,269	\$2,040,875	\$2,081,489	\$2,593,549	\$2,104,177	\$2,104,813	\$2,105,455	\$2,106,105

Table 9-7 provides the projected expenditures for the Water Company. The main forecast factors affecting these items are the growth rate of connections and inflation. For these projections a 2.5 percent annual rate of inflation has been used for expenditures. Operations revenue continues to exceed operation expenditures during the planning period.

**TABLE 9-7
Projected Expenditures**

Operating Expenditures	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Cost of Service:										
Field Staff	\$682,410	\$699,471	\$716,957	\$734,881	\$753,253	\$772,085	\$791,387	\$811,171	\$831,451	\$852,237
Distribution System	\$76,875	\$78,797	\$80,767	\$82,786	\$84,856	\$86,977	\$89,151	\$91,380	\$93,665	\$96,006
Meters & Services	\$36,388	\$37,297	\$38,230	\$39,185	\$40,165	\$41,169	\$42,198	\$43,253	\$44,335	\$45,443
Wells & Reservoirs	\$123,615	\$126,705	\$159,873	\$129,873	\$133,120	\$136,448	\$139,859	\$173,356	\$143,356	\$146,939
Trucks & Field Equipment	\$43,460	\$44,547	\$45,660	\$46,802	\$47,972	\$49,171	\$50,400	\$51,660	\$52,952	\$54,276
Other COS Expenses	\$57,451	\$58,888	\$60,360	\$79,869	\$81,865	\$83,912	\$86,010	\$88,160	\$90,364	\$92,623
Administrative:										
Office Staff	\$367,452	\$376,638	\$386,054	\$395,705	\$405,598	\$415,738	\$426,131	\$436,785	\$447,704	\$458,897
Board of Directors	\$26,138	\$26,791	\$27,461	\$28,147	\$28,851	\$29,572	\$30,311	\$31,069	\$31,846	\$32,642
Office Equipment	\$49,200	\$50,430	\$51,691	\$52,983	\$54,308	\$55,665	\$57,057	\$58,483	\$59,945	\$61,444
Other	\$110,393	\$113,152	\$161,190	\$165,220	\$169,350	\$173,584	\$177,924	\$182,372	\$186,931	\$191,605
Total Operating Expenditures	\$1,573,381	\$1,612,715	\$1,728,242	\$1,755,451	\$1,799,338	\$1,844,321	\$1,890,429	\$1,967,690	\$1,982,548	\$2,032,112

Table 9-8 shows the capital projects planned for the next 10 years. These projects will address various issues found throughout this water system plan update.

**Table 9-8
Ten Year Capital Projects**

Year	Type of Project	Improvement	Purpose	Estimated Cost(1)
2018 2019	Storage S-1	New Reservoir and Booster Station at the South Reservoir site.	Increase storage and improve system reliability	\$3,025,338
2020	Distribution System DS-1	Replace Well 8 pump assembly, control valves, and building.	Increase service capacity, pressure, and fire flow to the system.	\$382,982
2020	Distribution System DS-2	Remove Well 3 pump and building. Convert well to aquifer monitoring site.	Improve system reliability	\$73,178
2021	Distribution System DS-3	Replace main along 32 nd St from 110 th Ave E to 112 th Ave E with 8-inch main.	Improve system reliability	\$476,733
2022	Distribution System DS-4	Ugly List	Increase service capacity, pressure, and fire flow to the system.	\$392,574
2023	Distribution System DS-5	Ugly List	Increase service capacity, pressure, and fire flow to the system.	\$402,388
2024	Distribution System DS-6	Ugly List	Increase system reliability, capacity, pressure, and fire flow.	\$412,448
2025	Distribution System DS-7	Ugly List	Increase system reliability, capacity, pressure, and fire flow.	\$422,759
2026	Distribution System DS-8	Replace 1,750 lf of 6-inch Asbestos Cement main along 24 th St. E. and 125 th Ave. Ct. E., between 122 nd Ave. E. and 22 nd St. E. with 8-inch main.	Increase system reliability, capacity, pressure, and fire flow.	\$503,036
2027	Distribution System DS-9	Replace 1,550 lf of 6-inch Asbestos Cement main along 22 nd St. Ct. E. and 23 rd St E., beginning at 125 th Ave. Ct. E. with 6-inch main.	Increase system reliability, capacity, pressure, and fire flow.	\$426,455

Table 9-9 shows the operational summary for the system.

**TABLE 9-9
Operational Summary**

Operational Summary	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
(+) Total Operating Revenues	\$1,950,136	\$1,960,824	\$2,530,269	\$2,040,875	\$2,081,489	\$2,593,549	\$2,104,177	\$2,104,813	\$2,105,455	\$2,106,105
(-) Total Operation & Maintenance Expenses	\$1,573,381	\$1,612,715	\$1,728,242	\$1,755,451	\$1,799,338	\$1,844,321	\$1,890,429	\$1,967,690	\$1,982,548	\$2,032,112
(-) Total Debt	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
NET REVENUE	\$376,755	\$348,109	\$802,027	\$285,424	\$282,151	\$749,228	\$213,748	\$137,123	\$122,907	\$73,993

CAPITAL PROJECT FUNDING

Table 9-10 provides a summary of the net capital revenues and our starting and ending annual cash reserves. Total capital revenues stated include income from new memberships currently priced at \$7,000 each for a single family residence (SFR). Capital revenues are projected based on existing and known development over the planning period. Current projections leave the Water Company with adequate funding for capital projects while maintaining Board approved cash reserves.

TABLE 9-10
Capital Summary

Capital Summary	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Start of Year Cash	\$3,003,587	\$2,378,683	\$1,489,476	\$2,242,622	\$1,922,353	\$1,732,981	\$2,630,883	\$2,353,255	\$1,988,702	\$1,529,667
(+)Total Capital Revenues	\$801,010	\$540,020	\$701,030	\$71,041	\$71,051	\$701,062	\$71,072	\$71,083	\$71,094	\$71,105
(+) Transfer from Operations	\$376,755	\$348,109	\$802,027	\$285,424	\$282,151	\$749,228	\$213,748	\$137,123	\$122,907	\$73,993
(-) Total Capital Expenses	\$1,802,669	\$1,777,336	\$749,911	\$676,733	\$542,574	\$552,388	\$562,448	\$572,759	\$653,036	\$576,455
Net Capital Revenue	(\$624,904)	(\$889,207)	\$753,146	(\$320,268)	(\$189,372)	\$897,902	(\$277,628)	(\$364,553)	(\$459,035)	(\$431,357)
End of Year Cash	\$2,378,683	\$1,489,476	\$2,242,622	\$1,922,353	\$1,732,981	\$2,630,883	\$2,353,255	\$1,988,702	\$1,529,667	\$1,098,310

The Water Company has sufficient reserves and revenue obtained from the growth of the Water Company to fund the 10-year Capital Improvement Plan.

AVAILABLE CAPITAL PROJECT FUNDING SOURCES

This section describes funding sources available to the Water Company.

BANK FINANCING

The Water Company would be able to receive bank financing for capital improvements. Terms and conditions vary among banks, but for small improvements, loans are typically offered with a maximum of a thirty-year repayment. Interest rates fluctuate with the market, and the Water Company may expect to receive a 3 to 6 percent fixed interest rate. For larger projects, typically over \$2,500,000 for a borrower of similar size, a bond may be issued.

CHAPTER 10

MISCELLANEOUS DOCUMENTS

MEETING OF THE CONSUMERS

The Water System Plan will be formally presented to the Water Company customers after review of the first draft of the Plan by DOH, the cities of Edgewood, Milton and Sumner, adjacent water purveyors and other interested parties. The Plan will be updated as needed and a new draft version will be made available for consumers review and comment. A public forum will be held for consumers to address the Board of Directors with any comments. That public meeting is currently scheduled for October 18, 2017.

STATE, COUNTY AND ADJACENT UTILITY CORRESPONDENCE

This plan was submitted to Washington State Department of Health, Pierce County Health Department, City of Edgewood, City of Milton, City of Fife, City of Puyallup, City of Sumner, Dechaux Mutual Water, and Cherrywood Mobile Home Manor. These letters and comment letters received are included in Appendix O. Their comments will be addressed in the final version of the WSP.

SEPA

The Environmental checklist for this Water System Plan is included in Appendix N. The Plan is a “no action” type of project. The Washington State Department of Health will be acting as the lead agency for the SEPA process.

AGREEMENTS

The Water Company has a seasonal intertie with the City of Milton. This intertie was approved by DOH on June 2, 2010. The approval letter is included in Appendix M.

The service area agreements are included in Appendix D.

The Water Company was granted a franchise to operate within the City of Edgewood on January 10, 2017. This agreement was adopted as Ordinance 16-0485 and has a term of five years. The complete franchise agreement is included in Appendix D.

Appendix A

Water Facilities Inventory



WATER FACILITIES INVENTORY (WFI) FORM

Quarter: 1
Updated: 10/17/2016
Printed: 10/20/2016

ONE FORM PER SYSTEM

WFI Printed For: Annual

Submission Reason: Pop/Connect Update

RETURN TO: Central Services - WFI, PO Box 47822, Olympia, WA, 98504-7822

1. SYSTEM ID NO. 569203	2. SYSTEM NAME MOUNTAIN VIEW-EDGEWOOD WATER CO	3. COUNTY PIERCE	4. GROUP A	5. TYPE Comm
6. PRIMARY CONTACT NAME & MAILING ADDRESS MIKE CRAIG (FIELD MANAGER) 11610 32ND ST E EDGEWOOD, WA 98372-2099		7. OWNER NAME & MAILING ADDRESS MOUNTAIN VIEW-EDGEWOOD WATER CO MIKE CRAIG 11610 32ND ST E EDGEWOOD, WA 98372-2099		8. OWNER NUMBER: 003937
STREET ADDRESS IF DIFFERENT FROM ABOVE ATTN ADDRESS CITY STATE ZIP		STREET ADDRESS IF DIFFERENT FROM ABOVE ATTN ADDRESS CITY STATE ZIP		
9. 24 HOUR PRIMARY CONTACT INFORMATION		10. OWNER CONTACT INFORMATION		
Primary Contact Daytime Phone: (253) 863-7348		Owner Daytime Phone: (253) 863-7348		
Primary Contact Mobile/Cell Phone: (253) 606-4549		Owner Mobile/Cell Phone: (253) 606-4549		
Primary Contact Evening Phone: (253) 820-4008		Owner Evening Phone: (253) 822-8316		
Fax: (253) 863-0752	E-mail: mikec@mtvewater.com	Fax: (253) 863-0752	E-mail: mikec@mtvewater.com	
WAC 246-290-420(9) requires that water systems provide 24-hour contact information for emergencies.				
11. SATELLITE MANAGEMENT AGENCY - SMA (check only one)				
<input checked="" type="checkbox"/> Not applicable (Skip to #12) <input type="checkbox"/> Owned and Managed SMA NAME: _____ SMA Number: _____ <input type="checkbox"/> Managed Only <input type="checkbox"/> Owned Only				
12. WATER SYSTEM CHARACTERISTICS (mark all that apply)				
<input type="checkbox"/> Agricultural <input checked="" type="checkbox"/> Commercial / Business <input checked="" type="checkbox"/> Day Care <input checked="" type="checkbox"/> Food Service/Food Permit <input type="checkbox"/> 1,000 or more person event for 2 or more days per year <input checked="" type="checkbox"/> Hospital/Clinic <input checked="" type="checkbox"/> Industrial <input checked="" type="checkbox"/> Licensed Residential Facility <input type="checkbox"/> Lodging <input type="checkbox"/> Recreational / RV Park <input checked="" type="checkbox"/> Residential <input checked="" type="checkbox"/> School <input type="checkbox"/> Temporary Farm Worker <input type="checkbox"/> Other (church, fire station, etc.): _____				
13. WATER SYSTEM OWNERSHIP (mark only one)				14. STORAGE CAPACITY (gallons)
<input checked="" type="checkbox"/> Association <input type="checkbox"/> City / Town <input type="checkbox"/> County <input type="checkbox"/> Federal <input type="checkbox"/> Investor <input type="checkbox"/> Private <input type="checkbox"/> Special District <input type="checkbox"/> State				2,180,000

- SEE NEXT PAGE FOR A COMPLETE LIST OF SOURCES -

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO.		2. SYSTEM NAME		3. COUNTY			4. GROUP		5. TYPE																		
568203		MOUNTAIN VIEW-EDGEWOOD WATER CO		PIERCE			A		Contn																		
15 Source Number	16 SOURCE NAME LIST UTILITY'S NAME FOR SOURCE AND WELL TAG ID NUMBER. Example: WELL #1 XYZ456 IF SOURCE IS PURCHASED OR INTERTIED, LIST SELLER'S NAME Example: SEATTLE	17 INTERTIE INTERTIE SYSTEM ID NUMBER	18 SOURCE CATEGORY								19 USE				20 TREATMENT				22 DEPTH DEPTH TO FIRST OPEN INTERVAL IN FEET	23 CAPACITY (GALLONS PER MINUTE)	24 SOURCE LOCATION						
			WELL	WELL IN A WELL FIELD	WELL IN A WELL FIELD	SPRING	SPRING FIELD	SPRING IN SPRINGFIELD	SEA WATER	SURFACE WATER	RANNEY / I/F GALLERY	OTHER	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION			FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	1/4 SECTION	SECTION NUMBER	TOWNSHIP
S03	WELL # 2 ACN751		X										X	Y	X							397	100	SW NW	03	20N	04E
S04	WELL # 3 ACV516		X										X	Y	X							238	275	SW SW	10	20N	04E
S05	WELL # 6 ADN735		X									X	Y	X								405	380	SW NE	16	20N	04E
S06	WELL # 6 AEA472		X								X	Y	X									370	225	NW SE	10	20N	04E
S07	WELL #7 ABS702		X								X	Y	X									224	750	SW SW	10	20N	04E
S08	WELL #8 ACV518		X								X	Y	X									65	400	SW SW	15	20N	04E
S09	WELL #9 AAD958			X							X	Y	X									218	500	NE NW	16	20N	04E
S10	WELL 1R AEC906		X								X	Y	X									67	1000	SW SW	15	20N	04E
S11	WELL # 11 AEC949			X							X	Y	X									197	1000	NE NW	16	20N	04E
S12	Wells 9 & 11			X							X	Y	X									197	1500	SE NW	16	20N	04E

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO. 56820-3	2. SYSTEM NAME MOUNTAIN VIEW-EDGEWOOD WATER CO	3. COUNTY PIERCE	4. GROUP A	5. TYPE Comm
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	ACTIVE SERVICE CONNECTIONS	DOH USE ONLY CALCULATED ACTIVE CONNECTIONS	DOH USE ONLY APPROVED CONNECTIONS
25. SINGLE FAMILY RESIDENCES (How many of the following do you have?)		3438	Unspecified
A. Full Time Single Family Residences (Occupied 180 days or more per year)	2893		
B. Part Time Single Family Residences (Occupied less than 180 days per year)	0		
26. MULTI-FAMILY RESIDENTIAL BUILDINGS (How many of the following do you have?)			
A. Apartment Buildings, condos, duplexes, barracks, dorms	139		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied more than 180 days/year	545		
C. Part Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied less than 180 days/year	0		
27. NON-RESIDENTIAL CONNECTIONS (How many of the following do you have?)			
A. Recreational Services and/or Transient Accommodations (Campsites, RV sites, hotel/motel/overnight units)	0	0	
B. Institutional, Commercial/Business, School, Day Care, Industrial Services, etc.	91	91	
28. TOTAL SERVICE CONNECTIONS		3529	

29. FULL-TIME RESIDENTIAL POPULATION

A. How many residents are served by this system 180 or more days per year? 8595

30. PART-TIME RESIDENTIAL POPULATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
A. How many part-time residents are present each month?												
B. How many days per month are they present?												

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

32. REGULAR NON-RESIDENTIAL USERS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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?	1697	1697	1697	1697	1697	1697	440	440	1697	1697	1697	1697
B. How many days per month are they present?	22	20	22	22	22	11	30	30	22	22	22	15

33. ROUTINE COLIFORM SCHEDULE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Requirement is exception from WAC 246-290	10	10	10	10	10	10	10	10	10	10	10	10

34. NITRATE SCHEDULE (One Sample per source by time period)	QUARTERLY	ANNUALLY	ONCE EVERY 3 YEARS
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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: _____

Appendix B
Water Company By-Laws and Policy Book

**MT. VIEW – EDGEWOOD WATER COMPANY
POLICY BOOK****TABLE OF CONTENTS****INTRODUCTION**

Purpose and audience of Policy Book
Finding information in the Policy Book
References
Change control system

GOVERNANCE (1000 series)

Section 1. Articles of Incorporation

1110 Articles of Incorporation
1120 Articles of Amendment

Section 2. By-Laws

1210 By-Laws

GENERAL ADMINISTRATION (2000 series)

Section 1. Mission Statement

2110 Mission Statement

Section 2. Organization Chart

2210 Organization Chart

Section 3. Board Meetings

2310 Procedural Guidelines
2320 Guest Attendance at Board Meetings

MEMBERSHIP (3000 series)

Section 1. New Membership

3110 Purchase of New Membership and Metered Service

Section 2. New Services

3210 New Services

Section 3. Fee Schedule

3310 Fee Schedule and Computations

Section 4. Billing

3410 Regular Billing
3420 Renters Deposits
3430 Utility Direct Pay

Section 5. Additional Charges

3510	Billing Due Dates and Service Disconnection
3520	Service Repairs
3530	Charges Related to Sale of Property
Section 6. Customer Complaints	
3610	Customer Complaints of Water Quality
Section 7. Franchise Agreements	
3710	Franchise Agreements
PERSONNEL (4000 series)	
Employee Acknowledgement of Employee Handbook	
Section 1. Hiring Practices	
4110	Employee Classifications
4120	Hiring, Job Performance, and Termination
4130	Drug-Free Business Program
Section 2. Job Descriptions	
4210	General Manager Job Description
4220	Field Manager Job Description
4230	Accounting Manager Job Description
4240	Customer Account Specialist Job Description
4250	Service Technician Job Description
Section 3. Wages, Salaries, and Payroll	
4310	Wages and Salaries
4320	Expenses for Business Travel
4330	Training
Section 4. Benefits	
4410	Holidays
4420	Vacations
4430	Sick Leave
4440	Other Short-Term Leave
4450	Family and Medical Leave
4460	Extended Leaves of Absence
4470	Insurances
4480	Simplified Employee Pension Plan (SEP)
Section 5. Work Practices	
4510	Work Schedules
4520	Safety
4530	Use of Company Vehicles and Equipment
4540	Anti-Harassment
4550	Conflicts of Interest

**MT. VIEW – EDGEWOOD WATER COMPANY
POLICY BOOK****INTRODUCTION****I. PURPOSE**

Water Company policies are statements that set forth the purposes and prescribe in general terms the organization, rules, and regulations of the Water Company as it pertains to governance, administration, membership, and personnel.

This Policy Book covers internal policies internal to the Water Company; that is, those policies intended for employees and Board members. For external policies pertinent to Water Company members and the public at large, refer to the Water Company Bylaws and the Water System Plan.

II. FINDING INFORMATION IN THE POLICY BOOK

Each of the four major sections is identified by a series number, as follows:

1000 series: Governance
2000 series: General Administration
3000 series: Membership
4000 series: Personnel

The first digit of a policy number reflects the major section. The second digit reflects a subsection. The third and fourth digits reflect consecutive numbering within the subsection.

To find a policy by name, browse the Table of Contents at the beginning of the Policy Book and find its policy number.

To find a policy by number, browse through the section for the policy number, which are ordered consecutively.

III. REFERENCES

The following are other documents containing information about the Water Company:

- Water System Plan
- Cross-Connection Control Program
- Operations and Maintenance Manual
- Accounting Procedures Manual
- Fee Schedule
- Conservation Program
- Emergency Response Program
- Capital Improvement Program
- Wellhead Protection Program
- Coliform Monitoring Plan
- Development Standards

IV. CHANGE CONTROL SYSTEM

An employee or Board member can suggest a change to the Policy Book by completing a Policy Book Change Request and submitting it to the General Manager. These Change Requests will be reviewed by the Board of Directors, who will decide on the nature of the change to the Policy Book.

While individual policy changes may be made as needs arise at any time throughout the year, the Board will review the entire Policy Book every October.

A master printed copy of the Policy Book with all up-to-date policies will be available at the offices of the Water Company.

An electronic copy of the Policy Book with all up-to-date policies will be available at the offices of the Water Company.

When the Policy Book is updated with new and revised policies, the previous version will be archived in the Water Company's historical files.

Policy Book Change Request

Please complete this form and submit it to the General Manager. The request will be considered by the General Manager and the Board of Directors.

Date:	Submitted By:
--------------	----------------------

Number and Name of Policy:
Description of Suggested Change: <i>(Please be specific. If possible, please include suggested wording for a change or addition.)</i>
Reason for Suggested Change:
Additional Notes:

Date reviewed by General Manager:	Date reviewed by Board of Directors
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Decision on Suggested Change:

POLICY #1110. ARTICLES OF INCORPORATION

MOUNTAIN VIEW - EDGEWOOD WATER COMPANY
POLICY BOOK

BOOK SECTION I SECTION I - ARTICLES OF INCORPORATION
CATEGORY: 1978 INCORPORATION CERTIFICATE

ORIG: October 10, 1930 LAST REVISION: December 1978 INDEX NO: ArtInc 1.1

Official document form from the State of Washington Department of State, containing the title 'ARTICLES OF INCORPORATION' for Mountain View - Edgewood Water Company, signed by Bruce K. Chapman on December 11, 1978.

MOUNTAIN VIEW - EDGEWOOD WATER COMPANY
POLICY BOOK

BOOK SECTION I

SECTION I - ARTICLES OF INCORPORATION

CATEGORY: 1930 INCORPORATION CERTIFICATE

ORIG: October 10, 1930

INDEX NO: ArtInc 1.2

S. P. No. 1481—1918. Approved as to Form by Dept. of Secretary. 4112

Article No. 72279



Domestic

Department of State
Olympia
OFFICE OF THE
Secretary of State

I, J. GRANT HINKLE, Secretary of State of the State of Washington, do hereby certify that

ARTICLES OF INCORPORATION
OF THE

MOUNTAIN VIEW - EDGEWOOD WATER COMPANY

a Domestic Corporation, of Payallup (Pt. 41), Washington, were, on
the 12th day of September, A. D. 1930, at 9:00 o'clock A.M.
filed for record in this office and now remain on file herein, being duly recorded in Book 165, at
page 290-291, Domestic Corporations.

IN TESTIMONY WHEREOF, I have hereunto
set my hand and affixed hereto the Seal of the
State of Washington.

Done at the Capitol, at Olympia, this 10th day
of October, A. D. 1930.

J. GRANT HINKLE,
Secretary of State.

By [Signature]
Assistant Secretary of State.

MOUNTAIN VIEW - EDGEWOOD WATER COMPANY
POLICY BOOK

BOOK SECTION I SECTION I - ARTICLES OF INCORPORATION

CATEGORY: 1930 ARTICLES OF INCORPORATION

INDEX NO: ArtInc 1.3

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ARTICLES OF INCORPORATION
OF THE
MOUNTAIN VIEW-EDGEWOOD WATER COMPANY

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned, Hans Mickelson, Andrew Erikson, M.E. Price, Chas. Ruda, Jacob Anderson, L.D. Arnold and Guy Gaffney have this day associated ourselves together for the purpose of forming a non-profit corporation under the laws of the State of Washington, and to that end and purpose, make, subscribe and acknowledge these written articles of incorporation in triplicate, to-wit:

I.

The name of this corporation shall be "Mountain View-Edgewood Water Company."

II.

The objects and purposes for which this corporation is formed are to supply the members of this corporation with an abundant supply of pure and wholesome water for household, domestic and other purposes at cost and without profit to the corporation; and to that end to acquire, hold, own, sell and convey, mortgage, pledge, hypothecate and in every way use, hold, enjoy, and manage both real and personal property. To secure, accept, hold and assign and convey franchises. To file upon, apply for, acquire, own, hold, enjoy and sell, and convey water rights and the right of flowing springs of water and streams. The right of condemnation of such property as may be required by this corporation. To borrow money for the use of the corporation and to mortgage or pledge its property to secure the same. To employ agents, and to do any and all things convenient, requisite or essential to the end and purpose for which this corporation is formed.

III.

There shall be no capital stock of this corporation, and shares therein shall not be issued, and the interest of each member shall be equal to that of any other member, and no incorporator or member shall acquire any interest which will entitle him to any greater voice, vote, authority or interest in the corporation than any other member. The corporation shall issue membership certificates under such rules and regulations as may be prescribed by the By-Laws, which certificates shall be assignable under such provisions, rules and regulations as may be prescribed by the By-Laws of the Company.

IV.

The time of the existence of this corporation shall be Fifty Years.

MOUNTAIN VIEW - EDGEWOOD WATER COMPANY
POLICY BOOK

BOOK SECTION I SECTION I - ARTICLES OF INCORPORATION

CATEGORY: 1930 ARTICLES OF INCORPORATION

INDEX NO: Article 1.4

=====

V.

The trustees of this corporation shall be seven in number and the names and places of residence of the trustees who shall manage the affairs of the corporation until the fast Thursday in November, 1930, are:

Hans Mickelson, Andrew Erikson, M.E. Price, Chas. Ruda, Jacob Anderson, L.D. Arnold and Guy Gaffney.

VI.

The principal place of business of this corporation shall be at the Community Hall at the Mountain View School House, the post office address of which is Puyallup, Washington, Route 1.

IN WITNESS WHEREOF, We have hereunto subscribed our names this 30th day of August, 1930, in triplicate.

HANS MICKELSON (SEAL)
C.W. RUDA (SEAL)
M.E. PRICE (SEAL)
JACOB ANDERSON (SEAL)
L.D. ARNOLD (SEAL)
ANDREW ERIKSON (SEAL)
GUY GAFFNEY (SEAL)

STATE OF WASHINGTON }
COUNTY OF PIERCE } "

I, the undersigned, a Notary Public in and for the State of Washington, do hereby certify that on this 30th day of August, 1930, before me personally appeared Hans Mickelson, Andrew Erikson, M.E. Price, Chas. Ruda, Jacob Anderson, L.D. Arnold and Guy Gaffney, to me known to be the individuals described in and who executed the foregoing instrument and acknowledged to me that they signed and sealed said instrument as and for their free and voluntary act and deed for the uses and purposes therein mentioned.

Witness my hand and official seal the day and year in this certificate first above written.

WM. C. EATOUGH (SEAL)
Notary Public in and for the State of
Washington Residing at Puyallup.

POLICY #1120. ARTICLES OF AMENDMENT**ARTICLES OF AMENDMENT
OF
MOUNTAIN VIEW-EDGEWOOD WATER COMPANY**

PURSUANT to the provisions of the Miscellaneous and Mutual Corporations Act of the State of Washington, RCW 24.06, the following Articles of Amendment to the Articles of Incorporation are submitted for filing:

FIRST: The name of this corporation is Mountain View-Edgewood Water Company.

SECOND: The following amendments to the Articles of Incorporation were adopted by resolution of the Board of Directors of Mountain View-Edgewood Water Company on September 13, 2000, and approved by the members at the annual meeting of the Company on October 26, 2000.

Article III of the Articles of Incorporation is amended to read as follows:

ARTICLE III

1. There shall be no capital stock of this corporation, but it shall have members. The interest of each member shall be equal to that of every other member, and no member shall have or acquire any interest which will entitle that member to any greater voice, vote, authority, or interest in the corporation than any other member.
2. Any individual, firm, corporation, legal entity having reasonable accessibility to the source and who is in need of water supplied for domestic use, livestock, farm, school, or mercantile purposes from the water system of the corporation may be admitted to membership upon payment of the prescribed membership fee. The membership fee shall be set by the Board of Directors from time to time.
3. Memberships may be terminated or canceled under such provisions as may be set forth in the Bylaws of the corporation.

Article V of the Articles of Incorporation is amended to read as follows:

ARTICLE V.

The directors of this corporation shall be seven in number, and the names and places of residence of the original trustees who shall manage the affairs of the corporation until the last Thursday in November, 1930, are: Hans Michelson, Andrew Erickson, M.E. Price, Chas. Ruda, Jacob Anderson, L.D. Arnold, and Guy Gaffney.

Article VI of the Articles of Incorporation is amended to read as follows:

ARTICLE VI.

The principal place of business of this corporation shall be at 11610 - 32nd Street East, Edgewood, Washington, 98372, or such other place as the directors may designate from time to time.

A new Article VII has been adopted, which reads as follows:

ARTICLE VII.

Upon final dissolution or final liquidation of this corporation, the net assets remaining, after satisfying all the corporation's obligations and liabilities, shall be distributed equally to the members in good standing at the time of such dissolution or liquidation.

A new Article VIII has been adopted, which reads as follows:

ARTICLE VIII.

In the event of any merger or consolidation with any other entity, any dissenting member of the corporation shall be entitled to the fair market value of the dissenting member's membership.

A new Article IX has been adopted, which will read as follows:

ARTICLE IX.

The power to make, alter, amend, or repeal the Bylaws shall be vested in the Board of Directors; provided, however, the Board of Directors shall provide in said Bylaws a method by which the members may make, amend, or repeal Bylaws.

A new Article X has been adopted, which reads as follows:

ARTICLE X.

Directors of the corporation shall not be liable to the corporation or its members for monetary damages for conduct as a director, except for acts or omissions that involve intentional misconduct, committing a knowing violation of the law, or engaging in a transaction with the corporation in which a director receives a personal benefit to which he is not legally entitled.

THIRD: The foregoing amendments were adopted at a meeting of the members on October 26, 2000. There is only one class of members in the Company, which at the date of the meeting totaled 2,658 members, all of whom were entitled to vote. At the meeting, 752 members, or a quorum of more than 25% voted in person or by proxy. Of those voting, the voting for and against each amended or new article was as follows:

	<u>Article</u>	<u>For</u>	<u>Against</u>
1)	Amended Article III	748	10
2)	Amended Article V	738	15
3)	Amended Article VI	752	6
4)	New Article VII	745	9
5)	New Article VIII	739	15
6)	New Article IX	619	132
7)	New Article X	715	29

In each instance, more than two-thirds of those voting and constituting a quorum voted for each amendment.

IN WITNESS WHEREOF, the corporation has caused these Articles of Amendment to be executed by its officers on the 13th day of December, 2000.


Donald A. Nelson, President

POLICY #1210. BYLAWS**BYLAWS OF THE
MT. VIEW- EDGEWOOD WATER COMPANY
AS OF FEBRUARY 1, 2009****ARTICLE I****TIME, PLACE AND MANNER OF MEETINGS**

Section 1. Annual Meeting: The annual meeting of the Members of this Water Company shall be held in October of each year on a date set by the Board of Directors.

Section 2. Special Meetings: A majority of the Board of Directors may at any time call special meetings of the Members.

Section 3. Notice of Meetings: Written notice bearing the time and place of the annual meeting and any special meetings shall be mailed to each Member at such Member's address as shown on the books of the Water Company at least ten (10) but no more than thirty (30) days prior to the date of the meeting. Special meetings notice shall state the purpose of every special meeting. No business shall be transacted at the special meeting except as specified in the notice.

Section 4. Quorum: For annual meetings or special meetings of the Members that include published issues requiring a vote, Members owning five percent (5%) of the total Memberships shall constitute a quorum. This five percent (5%) shall be counted from voting Members present and from those who have voted by mail.

Section 5. Mail Voting Permitted: Members of this Water Company may vote in person or by mail for the election of Directors and on any other proposal or business submitted to them by the Directors. Members voting by mail are counted as part of the meeting quorum. Each Membership shall be entitled to one vote.

Section 6. Proxies: The use of proxies shall not be permitted except where Washington law requires that a quorum be a majority or more of the total Memberships at the meeting for the issue requiring a vote or as otherwise provided in Article V, Section 8.2 of these Bylaws.

Section 7. Place of Meeting: Water Company meetings shall be held at a place selected by the Board of Directors from within the area served by the Water Company.

Section 8. Meeting Procedure: The order of business at annual Members meetings, special Members meetings, and board meetings shall be established in an agenda prepared and mailed in advance of the meeting. A majority vote of those present at any such meeting may change the order of business.

Section 9. Rules of Order: Robert's Rules of Order, Revised shall govern all meetings.

ARTICLE II
DIRECTORS AND OFFICERS

Section 1. Number of Directors: There shall be seven (7) members of the Board of Directors of this Water Company, all of whom shall be Members of the Water Company. The term of each Director shall be three (3) years.

Section 2. Nomination, Election, and Term of Directors: At least sixty (60) days before each annual meeting, the Board of Directors shall appoint from among the Members an Election Committee of not less than three (3) nor more than six (6) Persons composed of Board members and non-Board members. This Election Committee shall solicit nominees from the Members for Board positions.

Section 2.1. An incumbent Director of the Water Company who wishes to run for re-election shall advise the Board, which shall place that Director's name on the ballot as a candidate, whether or not the Election Committee has nominated that Director.

Section 2.2. Any Member in good standing may have his or her name placed on the ballot as a Board candidate by submitting his or her name to the Board in writing at least thirty (30) days before the annual meeting.

Section 2.3. No employee of the Water Company may serve as a member of the Board of Directors.

Section 2.4. Ballots shall be mailed to the Members at least ten (10) days before the annual meeting and shall be returned and in the hands of the Water Company no later than the call to order by the President at the annual meeting. The Election Committee shall count the ballots and verify the quorum. Those candidates receiving the most votes shall fill the Board positions. In the case of tie votes, the winner shall be determined by lot.

Section 3. Vacancies on the Board of Directors: If the office of any Director becomes vacant because of death, resignation, retirement, ineligibility, or otherwise unoccupied or for any other reason, except removal from Board pursuant to these Bylaws, the remaining Directors shall by majority vote elect a successor who shall hold office until the next annual meeting of the Water Company, at which time the members shall elect a Director for the unexpired term.

Section 4. Removal from Board of Directors: A Director may be removed from the Board only in accordance with the procedure set forth in this section. Any Member wishing to remove a Director shall file with the Board and provide to the Director that the Member wishes to remove ("Targeted Director") a written statement of the reasons supporting removal of the Targeted Director, along with a petition signed by Members owning at least five percent (5%) of the Memberships of the Water Company requesting a hearing on such statement.

Section 4.1. Within thirty (30) days after the filing of the statement and petition, the Board of Directors shall call a special meeting of the Members. The Targeted Director and the Member or Members requesting the Targeted Director's removal shall have the right to appear at the special meeting to be heard in person or by counsel and to present witnesses.

Section 4.2. Within five (5) days after the special meeting, ballots shall be prepared and mailed to the Member owning each Membership of record as shown on the books of the Water Company. Completed ballots must be returned within ten (10) business days. The Election Committee shall count the ballots and verify the quorum, which shall be the Members owning at least five percent (5%) of the total Memberships.

Section 4.3. If, by simple majority, the Members approve removal, the Targeted Director shall be removed from the Board and the Board position shall remain vacant until the next annual meeting, at which time a new Director shall be elected to fulfill the time remaining in the three-year term.

Section 5. Election of Officers: At the first monthly board meeting following each annual meeting, the Directors shall elect from among themselves a President, Vice-President, Treasurer, and Secretary. The term of such officers shall be one year or until their successors are duly elected.

Section 6. Removal from Board Office: Officers of the Board may be removed from office, but not from the Board of Directors, at any time by the affirmative vote of five members of the Board of Directors for removal.

ARTICLE III

DUTIES OF DIRECTORS

Section 1. Authority and Powers: The Board of Directors, subject to restriction of law, the Articles of Incorporation and these Bylaws, shall exercise all of the powers of the Water Company without prejudice to or limitation upon their general powers. It is hereby expressly provided that the Board of Directors is hereby given full power and authority with respect to the matters set forth in these Bylaws.

Section 2. General Standards for Directors. A Director shall discharge the duties of Director, including duties as a member of a committee; (a) in good faith; (b) with the care an ordinary prudent person in a like position would exercise under similar circumstances; and (c) in a manner that the Director reasonably believes is in the best interests of the Water Company.

Section 3. Meetings of the Board of Directors: Meetings of the Board of Directors of the Water Company shall be held monthly. A majority of the Board of Directors shall constitute a quorum at any meeting of the Board. Special meetings of the Board of Directors may be held at any time upon the call of the President or by a majority of the members of the Board. At least 24 hours notice shall be given of all meetings of the Board of Directors.

Section 4. Contracts: The President or Vice-President, and the Secretary or such other agents or employees as designated by the Board of Directors, shall have the authority to enter into agreements and execute all instruments of conveyance, contracts and such other instruments as are directed by the Board of Directors.

Section 5. Accounting: The Board of Directors shall adopt internal controls as may be essential to safeguard the operation of the Water Company. The books of the Water Company shall be audited annually by a certified public accountant as selected by the Board of Directors.

Section 6. Agents and Employees: The Directors shall select, appoint and remove all agents or employees of the Water Company. They shall prescribe such duties and delegate such powers as are consistent with these Bylaws.

ARTICLE IV

DUTIES OF OFFICERS

Section 1. President: The President shall preside over all meetings of the Water Company and the Board of Directors, call special meetings of the Board of Directors, perform all acts and duties usually performed by a presiding officer and sign such papers of the Water Company as authorized by the Board of Directors. The President shall perform such other duties as may be prescribed by the Board of Directors.

Section 2. Vice-President: In the absence or disability of the President, the Vice-President shall perform the duties of the President.

Section 3. Secretary: The Secretary shall keep a record of all meetings of the Board of Directors and all meetings of the Members. The Secretary shall oversee the corporate books and records, which shall be kept in the office of the Water Company. The Secretary shall perform such other duties as may be prescribed by the Board of Directors.

Section 4. Treasurer: The Treasurer of the Water Company shall oversee financial activities of the Water Company. The Treasurer shall render to the Board of Directors, at its regular meeting and whenever it shall require, an account of the transactions and of the financial condition of the Water Company.

ARTICLE V MEMBERSHIP

Section 1. Definitions. For purposes of these Bylaws, the following definitions shall apply. “Eligible Property” means a legally-recognized tax parcel of real property within the geographical area served by the Water Company that has reasonable access, as defined by the Water Company’s access guidelines as amended from time to time, to the water mains of the Water Company. “Membership” means the right associated with an Eligible Property to obtain water from the water mains of the Water Company and to vote on certain matters affecting the Water Company, all pursuant to these Bylaws. “Member” means the owner of the Membership associated with the Eligible Property; a Member may own more than one Membership. “Owner” means the Person holding legal title to the Eligible Property and/or Membership. “Person” means an individual or an entity recognized under Washington law that has the power to hold legal title to Eligible Property or a Membership.

Section 2. Membership Eligibility. An Owner of an Eligible Property may acquire a Membership subject to the terms and conditions of these Bylaws. All Memberships shall be associated with Eligible Property. The Board of Directors shall from time to time establish rules and policies concerning Membership eligibility consistent with these Bylaws.

Section 3. Membership Purchase: Any Person who is the Owner of an Eligible Property may purchase a Membership in the Water Company. A Membership may be purchased directly from the Water Company. The Water Company’s records for each Membership shall include the street address and parcel number of the Eligible Property then served by the Membership. If there is no street address, the parcel number alone shall suffice.

Section 4. Membership Transfer: A transfer of Membership shall be valid only if the transfer is recorded with the Water Company within thirty (30) days of the date of transfer. Membership transfers in connection with real estate sales are recorded at the time of escrow using the Escrow Transfer Application form. The selling Member is responsible for initiating the transfer process, regardless of whether the sale goes through escrow. The new Owner shall then become a Member of the Water Company, and shall be responsible for payment of all accrued charges against the old Membership. Members shall not sell, transfer or convey any Membership to any other Person unless that Person is the Owner of an Eligible Property with which such Membership shall become associated.

Section 5. Loss of Eligibility. The Board of Directors may cancel any Membership upon refunding any purchase price paid to the Water Company if the point of service is too remote to be reached by the Water Company’s system, as determined by the Board of Directors in its sole discretion. The Board of Directors may also discontinue eligibility for water and cancel any Membership if the Member refuses

to comply with the Water Company's Articles of Incorporation, Bylaws and policies including without limitation the requirements of the Articles and the Bylaws that all Memberships must be associated with Eligible Property.

Section 6. Membership Water Service: Membership in the Water Company shall entitle the Eligible Property to metered water service from the mains of the Water Company.

Section 6.1. Except as the Board of Directors may otherwise determine in individual cases, water service shall be limited to one (1) metered service for each Membership. Each Membership shall service only a single parcel including, without limitation, condominiums, town homes or any other structure or land assigned a parcel number by the County.

Section 6.2. Each single residential metered water service may service multiple structures on the Eligible Property for which the Membership is issued. However, water shall not be diverted from one Eligible Property to provide water service to a domestic structure on another Eligible Property.

Section 6.3. Commercial and public metered water service and multi-residential metered water service activities shall pay additional surcharges as determined in the Fee Schedule, as amended from time to time.

Section 6.4. In addition to the unit price for Membership, all Members shall be charged a connection fee as set by the Board of Directors, which shall include, without limitation, a meter and service to the property line as agreed to by the Member and the Water Company.

Section 6.5. Individual cases not covered by this Article V of the Bylaws shall be determined by the Board of Directors, whose decision shall be final.

Section 7. Fees and Costs of Membership and Service Costs. The unit price for Membership is published in the Fee Schedule, as amended from time to time. Different base rates and additional fees, including connection fee and transfer fee, may apply, as published in the Fee Schedule, as amended from time to time.

Section 8. Rights and Privileges. No Person shall be a Member of this Water Company until all fees associated with the Membership are paid in full. Nor shall any Person have the right to vote at a Members meeting except those registered on the books of the Water Company as fully paid Owners of Memberships. If the Owner is an entity and not an individual, the entity shall authorize an individual to cast such entity's vote.

Section 8.1. Membership shall ordinarily be issued in the name of a single Person, regardless of the number of individuals in the household or the number of principals in the entity; provided, however, that a Membership may be issued in the names of both husband and wife in a marital community; and provided further that the Board shall have discretion as to the name in which a Membership is issued in the case of tenancies in common or other forms of co-ownership of Eligible Property. At annual meetings and special meetings, each Membership shall have one vote; a Member owning more than one Membership shall have one vote for each Membership owned.

Section 8.2. In the case of a live vote, the Owner of record for a Membership may designate (in writing) another Person to vote at the Members meeting. Membership shall be verified for each Person participating in the vote.

ARTICLE VI RULES AND REGULATIONS

Section 1. Rules and Regulations. The Board of Directors shall have the power to regulate and limit the number of taps that may be taken off each main line of the water system and shall make rules and regulations for the use of the water from the system, which rules and regulations may be amended from time to time.

Section 2. Fees and Rates. The Board of Directors shall from time to time establish rates for water and regulations for the use of water, prescribe the method of collecting charges for water service, fix and determine water service charges, and provide for penalties for failure to pay water service charges.

ARTICLE VII AMENDMENTS

Section 1. By the Directors. The Board of Directors may alter, amend or repeal these Bylaws, or adopt new bylaws, by vote of a majority of the Directors present at any regular meeting or special meeting.

Section 2. By the Members. The Members may also amend the Bylaws by petition signed by Members owning ten percent (10%) or more of the Memberships in the Water Company. The petition must be initially submitted to the Board of Directors at least three (3) months prior to the date set for the annual meeting. After the petition is submitted, the Board of Directors shall have two (2) months to consider the same. The Board of Directors shall then pass the petition, along with the Board's recommendation regarding the petition, to the Members at the next annual meeting. The amendment set forth in the petition shall be adopted if approved by the Members by two-thirds vote of those Memberships represented either in person or by mail-in ballot at the annual meeting. No changes to the Bylaws proposed by petition shall be permitted unless all Members have been notified in writing stating the date, time, and place of the meeting and the wording of the proposed change at least ten (10) but no more than thirty (30) days prior to the date of the annual meeting.

ARTICLE VIII LIABILITY AND INDEMNIFICATION

Section 1. Limitation of Liability of Directors. The members of the Board of Directors shall not be personally liable to the Water Company for monetary damages for conduct as a Director, except (i) for acts or omissions which involved intentional misconduct by the Director or a knowing violation of law by the Director or (ii) for any transaction from which the Director will personally receive a benefit in money, property, or service to which the Director is not legally entitled. If the Washington Nonprofit Miscellaneous and Mutual Corporations Act is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a Director shall be eliminated or limited to the fullest extent permitted by the Washington Nonprofit Miscellaneous and Mutual Corporations Act, as so amended. Any repeal or modification of the foregoing section by vote of Members of the Water Company shall not adversely affect any right or protection of Director existing at the time of such repeal or modification.

Section 2. Indemnification. The Water Company shall indemnify the Members, Directors, the President, and other officers of the Water Company against all liability, damage, and expenses arising from or in connection with service for, employment by, or other affiliation with the corporation or other firms or entities to the maximum extent and under all circumstances permitted by law more fully set

forth in the Bylaws; provided that no indemnification shall be provided under this Section to any such Person if the Water Company is prohibited by the nonexclusive provisions of the Washington Nonprofit Miscellaneous and Mutual Corporations Act or other applicable law as then in effect from paying such indemnification or, if in the opinion of counsel, payment of such indemnification would subject the Water Company to imposition of excise taxes under the Internal Revenue Code or would cause the Water Company to lose its exempt status from federal income taxation. The Board of Directors may, in its discretion, provide similar indemnification to employees or agents of the Water Company.

Adopted By The Board of Directors On December 15, 2010:

Stephen L. Smith, Secretary

**Awarded
“Best Water in Washington – 2008”
by AWWA**

DIRECTORS

President

Luke Meyers

Vice President

Dave Weir

Secretary

Steve Smith

Treasurer

Steve Ellison

Members

Beverly Strodtz

Don Nelson

Larry Runge

EMPLOYEES

General Manager

Marc Marcantonio

Field Manager

Mike Craig

Office Staff

Stephanie Christel

Laurie Kennedy

Field Techs

Jon Young

Mike Gass

Gene Ryan

Revision History:

Originated: 9/5/1930
Revised: 9/1/1932
Revised: 1/12/1939
Revised: 1/12/1952
Revised: 1/14/1960
Revised: 1/10/1963
Revised: 1/16/1964
Revised: 10/26/1965
Revised: 11/20/1967
Revised: 10/14/1974
Revised: 10/25/1978
Revised: 10/21/1980
Revised: 10/28/1987
Revised: 10/24/1990
Revised: 1/24/1995
Revised: 1/1/2005
Revised: 2/1/2005

POLICY #2110. MISSION STATEMENT

MISSION STATEMENT

The mission of the Mt. View-Edgewood Water Company employees is to ensure public health and protection of property by providing sufficient quantities of safe and economical water for drinking, other domestic uses, and fire protection.

Revision History:

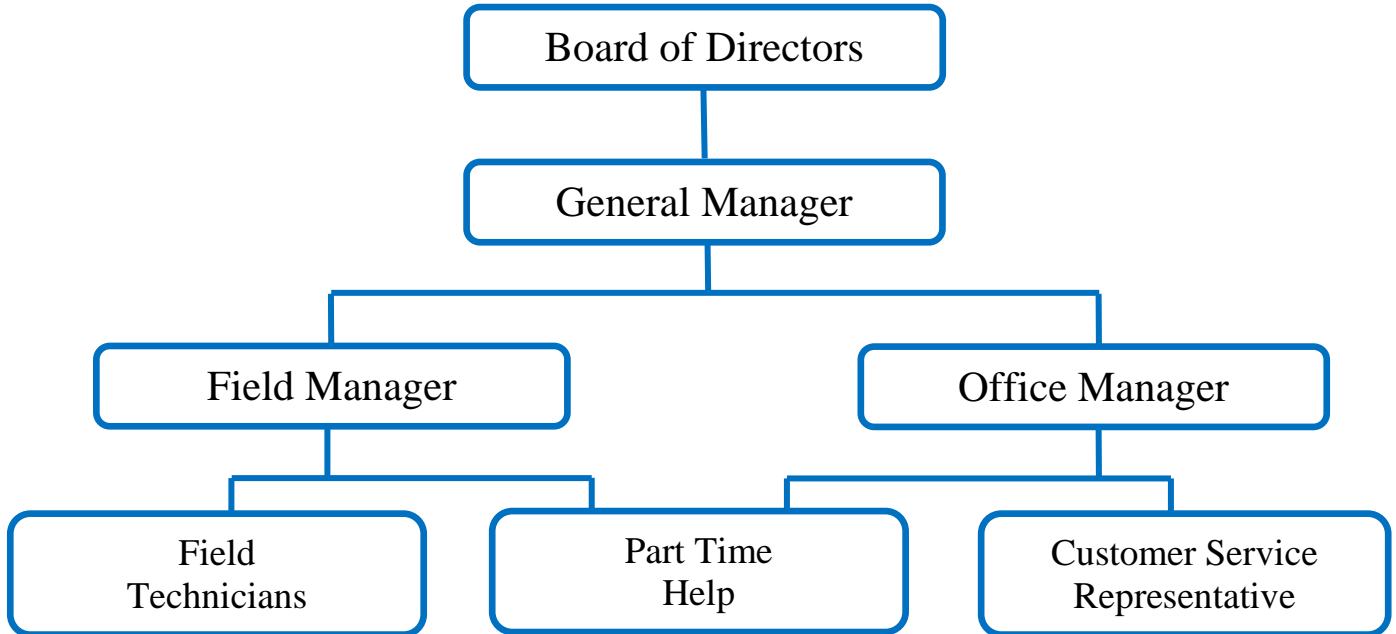
Originated:

Revised: 11/14/2012

POLICY #2210. ORGANIZATION CHART

I. ORGANIZATION CHART

The following is the Water Company’s organization chart:



II. POSITION DESCRIPTIONS

The following are brief descriptions of all Water Company personnel positions. All have the primary responsibility to protect Public Health. Detailed job descriptions are found in section 4000 of the Policy Book.

A. Board of Directors

The Board of Directors exercises all the powers of the corporation.

B. General Manager

The General Manager is responsible for overall management, personnel supervision, and daily operations of the Water Company. This includes monitoring activities delegated to others, hire and fire authority, wage rates, long-term planning, budget preparation, systems operations and maintenance, water quality, new installations, capital programs, customer service, work scheduling, risk assessment, compliance with regulations, safety and training, company policies, and communications with the Board of Directors.

C. Field Manager

The Field Manager is responsible to operate the water system; maintain and repair the water system; perform service installations and capital improvements; maintain the facilities, grounds, supplies, parts, and equipment; and perform various administrative duties. The Field Manager also supervises all staff in the absence of the General Manager.

D. Office Manager

The Office Manager performs and/or administers all general accounting and bookkeeping activities; prepares the annual operating budget; prepares materials for the annual audit; assists with customer service activities; oversees maintenance of office machines; purchases supplies; tracks and books field inventory purchases and issues; performs secretarial duties for General Manager and Field Manager; assists Board Secretary with Board meeting minutes as needed; and prepares regular operating and financial reports for the Board of Directors.

E. Customer Service Representative

The Customer Service Representative is responsible for all membership transactions, accounts receivables, bills and collections, and customer accounts.

F. Service Technician

The Service Technician operates the water system; maintains and repairs the water system; performs service installations and capital improvements; maintains the facilities, grounds, supplies, parts, and equipment; and oversees meter reading program.

Revision History:

Originated:

Revised: 11/14/2012

Revised: 2/17/2016

POLICY #2310. DUTIES OF THE BOARD OF DIRECTORS**I. INFORMATION**

Directors provide information exchange at Board meetings by:

- Working within the guidelines established in the Water Company By-Laws.
- Summarizing and reporting on financial results.
- Describing operating accomplishments.
- Reviewing goals and the progress toward the goals.
- Highlighting areas requiring Board attention.

II. RESOLUTION OF ISSUES

Provide clear and concise resolution of issues that come before the Board for decision.

This is to be done either by:

- Reaching a clear decision at that meeting with an action plan and assignment of responsibility, or
- Outlining the next steps to be completed, when and by whom, leading to a decision at a specified time in the future.

III. GENERAL MANAGER DIRECTION

- A. Provide direction to the General Manager regarding company policies and procedural questions while allowing the General Manager to manage day-to-day operations.
- B. Provide sufficient latitude to allow the General Manager to supplement company resources with outside technical support services as needed.
- C. Adopt standards of performance for the General Manager which clearly outline job responsibilities and contain measurable goals for the year.

IV. COMPANY POLICIES

Limit policy exemptions by the Board so that company policies are applied fairly and consistently for all customers.

V. ANNUAL GOALS AND WATER SYSTEM PLAN

Monitor the accomplishment of annual goals and ensure that the long-term Water System Plan is up-to-date and meets future growth and regulatory requirements.

Revision History:

Former Policy #92-1-P 5.1

Originated: 1/1/1992

Revised: 11/14/2012

POLICY #2320. GUEST ATTENDANCE AT BOARD MEETINGS**I. PURPOSE**

To inform the Board of Directors prior to the Board Meeting of the nature of the business of the guests listed on the Board Meeting Agenda.

II. STATEMENT OF POLICY

Board of Directors meetings are held on the second Wednesday of each month, on or after the 10th of the month. Anyone wishing to attend a Board of Directors meeting must submit a written request to the Water Company office, on or before the first day of the month in which they wish to attend the meeting.

The written request should include the following information:

- The names of the persons wishing to attend
- A brief description of the reasons for attending
- A listing of any documents to be presented to the board, for example, short plats, etc.
- The actual documents to be presented to the board

III. COMPANY OFFICE PROCEDURE

The Water Company office staff will include the request and any other documents with the Board of Directors Meeting Agenda, which is presented to the Directors approximately five days prior to the meeting.

If necessary, Water Company office staff will also include with the Meeting Agenda a staff report providing a brief background on the guests and the nature of their business.

IV. EXCEPTIONS TO POLICY

The General Manager may waive the written request ruling and/or the deadline date. The General Manager will then phone or e-mail as many Board members as possible, inform them of the guests wishing to attend, the nature of their business, and the General Manager's views on the nature of the business.

Revision History:

Former Policy #89-4-R 5.1

Originated:

Revised: 11/14/2012

POLICY #3110. PURCHASE OF NEW MEMBERSHIP AND METERED SERVICE**I. APPLICATION FOR MEMBERSHIP**

To become a member of the Water Company, the appropriate application form must be completed:

- New Membership Application for Water
- Transfer Membership Application for Water

All applications require Board approval.

II. PURCHASE OF MEMBERSHIP

- A. Membership purchases shall be paid in full at time of purchase.
- B. Membership must be purchased before the service will be installed. For membership pricing please refer to the current-year's Fee Schedule.

Revision History:

Former Policy #54-R 1.1

Originated: Pre 1954

Revised: 11/5/1996

Revised: 11/15/2006

New Membership APPLICATION FOR WATER

Mt. View - Edgewood Water Company
11610 32nd Street East ▪ Edgewood, WA 98372
Phone: 253-863-7348 ▪ Fax: 253-863-0752

Application is hereby made to Mt. View-Edgewood Water Company for metered water service. I certify that I am the legal owner of the property described below.

Membership owner information:

Legal Name(s) for Certificate Day Phone

Current Mailing Address City State Zip

Meter Size: _____ Service Installation Charge: \$ _____ Membership: \$ _____

Square Footage over 3600 sq ft: _____ Fire Protection Fee: _____ **TOTAL: \$** _____

I understand that the service installation charge will include labor, materials, and costs associated with the installation. Meters and materials are, and remain, the property of the Mt. View-Edgewood Water Company. I agree to keep meters, backflow assemblies, and valves accessible at all times with no trees or shrubs within a two-foot radius. I further agree to not place a fence or any barrier between the meter, backflow assembly, and road. I grant access to the water company onto the service address property to install (if one is not present) and test annually a backflow assembly on my water service line. I understand that it is my responsibility to have an expansion tank and properly functioning T&P Valve (Temperature & Pressure Valve) in place on all hot water heaters. If I have any doubt, I will contact a licensed plumber. (Expansion tanks are now used in all new construction, and are required by Section 608.3 of the Uniform Plumbing Code). I understand that failure to install the expansion tank(s) may result in leaks or plumbing bursts, water damage, or injury. I understand that this membership is tied to the below service address, and as such must be transferred to the new owner(s) along with the property. I understand that failure to comply with Water Company requirements may result in water service termination.

*** Important Notice: Bi-Monthly charges (Water Base, Water Usage, and Fire Protection) shall start when the meter is installed.**

Print Member's Name Signature Date

Service Address City State Zip Phone

Parcel number or Tax Description

OFFICE USE

Date Service Completed: _____ Account Number: _____

Route Number: _____ Sequence Number: _____ Digits: _____

Meter Number: _____ Manufacturer: _____ J/O: _____

Manager: _____ DCVA Serial Number: _____

LAT: _____ LON: _____

_____ 3/4" Set

_____ Double Check for 3/4" Set

_____ 1" Set

_____ Double Check for 1" Set

_____ 2003.00 1" Copper

_____ 1709.00 Traffic Meter Box Plastic Small 11x18

_____ 1711.00 Traffic Meter Box Plastic Large 13x24

_____ 1719.00 Meter Box Plastic Small 14x19

_____ 1721.00 Meter Box Plastic Large 12x20

_____ 1815.00 3/4" Sensus iPearl Meter

_____ 1817.00 1" Sensus iPearl Meter

_____ 1841.00 Single Port Radio (MXU)

_____ 1842.00 Dual Port Radio (MXU)

Additional Inventory Used:



Transfer Membership APPLICATION FOR WATER

Mt. View - Edgewood Water Company
 11610 32nd Street East ▪ Edgewood, WA 98372
 Phone: 253-863-7348 ▪ Fax: 253-863-0752
 www.mtvewater.com

Application is hereby made to Mt. View-Edgewood Water Company for metered water service from the mains of the Company. I certify that I am the legal owner of the property described below.

NEW MEMBER INFORMATION:

PLEASE PRINT NAME(S) EXACTLY AS THEY APPEAR ON YOUR DEED:

Address (billing)	City	State	Zip
-------------------	------	-------	-----

Phone: _____

Previous member information:

Legal Name(s) on Certificate	Certificate Number
------------------------------	--------------------

Forwarding Address	City	State	Zip	Phone Number
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Meters and materials are, and remain, the property of the Mt. View-Edgewood Water Company. I agree to keep meters, backflow assemblies, and valves accessible at all times with no trees or shrubs within a two-foot radius. I further agree to not place a fence or any barrier between the meter, backflow assembly, and road. I grant access to the water company onto the service address property to install (if one is not present) and test annually a backflow assembly on my water service line. I understand that it is my responsibility to have an expansion tank and properly functioning T&P Valve (Temperature & Pressure Valve) in place on all hot water heaters. If I have any doubt, I will contact a licensed plumber. (Expansion tanks are now used in all new construction, and are required by Section 608.3 of the Uniform Plumbing Code). I understand that failure to install the expansion tank(s) may result in leaks or plumbing bursts, water damage, or injury. I understand that this membership is tied to the below service address, and as such must be transferred to the new owner(s) along with the property. I understand that failure to comply with Water Company requirements may result in water service termination.

Print Member's Name –Buyer(s)	Signature(s)	Date
-------------------------------	--------------	------

Service Address	City	WA State	Zip
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Parcel number _____ Route Number _____ Seq Number _____

Transfer Fee: \$ _____ Balance on Account: \$ _____ **TOTAL: \$** _____

POLICY #3210. NEW SERVICES

I. NEW SERVICES

- A. Application shall be made and the service meter installation and membership shall be fully paid before the service is installed.
- B. The service meter and premises isolation will be installed next to the property line on the road utility easement.

Revision History:

Former Policy #54-R 1.2

Originated: Pre 1954

Revised: 11/5/1996

Revised: 11/15/2006

POLICY #3310. FEE SCHEDULE AND COMPUTATIONS

FEE SCHEDULE AND COMPUTATIONS

Fees will be set, reviewed, and adjusted by the Board of Directors and published in a Fee Schedule.

Revision History:

Former Policy #54-R 1.2

Originated: Pre 1954

Revised: 11/5/1996

Revised: 11/15/2006

POLICY #3410. BILLING**I. BILLING SCHEDULE**

Water bills are submitted bimonthly (every other month).

II. BILLING RATES

Basic water rates—including consumption rates, fire protection fees, and standby charges—are billed according to the current Fee Schedule available at the Water Company office and on the company web site.

III. CUSTOMER BILLINGS AND REFUNDS UNDER \$2.00

Customer underpayments of \$2.00 or less at the end of a service agreement will be waived.

Credits due to customers of \$2.00 or less on any Water Company transactions will not be refunded to customers, but rather offset with credits toward a service fee to result in a zero balance.

IV. PARTIAL BILLINGS

Partial bills for new customers and closing bills shall be prorated based on the billable percentage of the billing period.

V. SERVICE BILLING RESPONSIBILITY

The member is always responsible for the account balance. Bills may be sent to renters of the property, property management companies, or the member as appropriate.

Revision History:

Former Policies #73-4 8.2/3/4/5 and #77-5-R 8.2/3/4/5

Originated: Pre-1973 and 5/9/1977

Revised: 1/29/1997 and 4/1/1992

Revised: 11/15/2006

Revised: 1/13/16

POLICY #3420. RENTAL POLICIES**I. APPLICATION PROCESS**

To authorize any other individual or company to pay a member's water bill and to ensure that the member understands his or her responsibility in the event of nonpayment, the Renter/Management Company Application for Water must be completed.

II. APPLICATION FORM AND FEES

The Renter/Management Company Application for Water form is available at the Water Company and on the company website.

Information about required deposits and fees is listed on the Fee Schedule.

III. RENTERS' DEPOSIT

Renters responsible for the water account will be charged a deposit amount in accordance with the current Fee Schedule prior to placing the water billing in their name.

IV. REFUND OF RENTERS' DEPOSIT

- A. Upon vacating the rental, the renters' deposit shall be refunded, less the current and closing billing.
- B. If a renter purchases property within the Water Company service area and becomes a member of the company, the renter(s) can choose to have the balance of their deposit (less current and closing bill) credited to their new property water account.
- C. The member owner of the property shall be responsible for any billings left unpaid by the renter.

Revision History:

Former Policy #77-5-R 8.2/3/4/5

Originated: 5/9/1977

Revised: 4/1/1992

Revised: 11/15/2006

Renter/Management Company APPLICATION FOR WATER



Mt. View - Edgewood Water Company
 11610 32nd Street East ▪ Edgewood, WA 98372
 Phone: 253-863-7348 ▪ Fax: 253-863-0752 ▪ www.mtvewater.com

Application is hereby made to Mt. View-Edgewood Water Company for metered water service from the mains of the Company. **Date service is desired:** _____

Renter Information:

Print Renter's Name	Date	\$
Service Address	City	Phone
	WA	(253)
	State	Zip

Management Company information:

Name (bill payer)	Phone	\$
Address (bill payer's address)	City	Zip
	State	

Mt. View-Edgewood Water Company is a private water company that is member-owned. Our primary customer is the member. As a convenience, **Renters** and **Management Companies** are permitted to pay for water service as an agent of the member, *if* approved both by the Water Company and the member of the property billed. Members and their agents are advised that meters, backflow devices, and materials connected to meters within the Right-of-Way are, and remain, the property of the Mt. View-Edgewood Water Company. All water piping, valves, pressure reducing devices, and hardware on the member's side of our meter and backflow device is the responsibility of the member. The Water Company provides water with a minimum of 30 psi at the meter. At some meters water pressure may exceed safe limits required by the Plumbing Code. It is the member's responsibility to reduce pressure beyond the service connection to a safe limit required by the Plumbing Code.

Meters, valves, backflow devices, sample stations, and hydrants must be accessible to Water Company personnel at all times, and kept clear within a two-foot radius. Fences or other barriers between the meter and road are not permitted as they restrict meter reading and maintenance of the water distribution system. Failure to comply with Water Company requirements or failure to pay water company bills may result in water service termination and/or tampering fees regardless of agreements between members and their agents.

Renter (Print name)	Renter Signature	Date
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I agree that the above individual is authorized to be my agent for payment of water service:

Member/Owner (Print name)	Member/Owner Signature	Date	\$
Owner's Mailing Address	City	State	Phone

POLICY #3430. PAYMENTS**I. ELECTRONIC FUNDS TRANSFER (EFT) BILL PAYMENTS**

Members may automatically pay their Water Company bill by electronic funds transfer (EFT) directly. Members wanting to participate in this option can complete and sign an application form available at the Water Company.

- A. Members are responsible for payment until notified by the Water Company on their bill indicating that their automatic payment has taken effect.
- B. If a member's automatic payment is returned for non-sufficient funds, the member's option for utility direct pay may be revoked, and late fees and NSF charges will apply.

II. CREDIT/DEBIT CARD PAYMENTS

As a convenience, the Water Company accepts payment using credit and debit cards. Charges from the processing vendor to the Water Company for utilizing this service will be passed on, in the form of a convenience fee, only to those customers who use the service.

III. WATER COMPANY EMPLOYEES RECEIVING PAYMENT IN THE FIELD

At no time will Water Company employees accept any form of payment from a customer while on duty in the field. All payments for all services are to be received in the main office of the Water Company.

Revision History:

Originated: 10/11/2006

POLICY #3510. BILLING DUE DATES AND SERVICE DISCONNECTION**I. BILLING DUE DATES**

Bills are due upon receipt, and become past due as stated on the bill.

II. LATE FEE AND PAST DUE NOTICE

- A. If an account is not settled or if payment arrangements are not made within 10 days of the due date, the current late fee will be added to the account and a past due notice for the entire balance including the late charge and showing the disconnect date (approximately 10 days from the past due date) will be mailed.
- B. If a renter is responsible for the billing, a duplicate notice will be sent to member owners of the rental.
- C. Payment of any type is not permitted to be received by staff outside of the office.

III. DISCONNECT WATER SERVICE

If the bill is not paid in full prior to the disconnect date, then the Disconnect Water Service notice will be taken to the door of the service address and the meter will be shut off.

The City of Edgewood and corresponding Fire Departments will be notified of the disconnection.

IV. WATER SERVICE RECONNECT

Accounts disconnected for non-payment will be charged per the current Fee Schedule for resumption of service.

No service restoration will occur outside of normal office hours, Monday through Friday.

Revision History:

Former Policy #77-5-R 8.2/3/4/5

Originated: 5/9/1977

Revised: 5/1/1994

Revised: 11/15/2006

<p style="text-align: center;">POLICY #3520. SERVICE AND BACKFLOW PREVENTION ASSEMBLY REPAIRS</p>
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I. METER AND PREMISES ISOLATION REPLACEMENTS

- A. There is no charge for replacement of meters or premises isolation assemblies that have stopped functioning from normal use and cause.
- B. Meters and/or premises isolation assemblies damaged by the customer, contractor, delivery vehicles, etc., will be repaired or replaced by the Water Company and the customer will be billed for time and materials.

II. METER BOXES AND ANGLE STOPS

When meter boxes, angle stops, etc., are broken by the customer, contractor, delivery vehicle, etc., the General Manager will determine whether the repair or replacement is to be made by the Water Company or the customer.

If the Water Company makes the repairs/replacements, the customer will be billed for time and materials.

III. SERVICE LINES

All repairs and/or replacements of service lines, etc., from meters or premises isolation devices to building structures, are the responsibility of the customer.

IV. SPECIAL METER READINGS AND CREDITS FOR LEAK ADJUSTMENTS

- A. There will be no charge for re-reading the meter due to customer request (high billings, etc.).
- B. There will be no charge for checking for a leak at the request of a customer. Such leak checks will take place during normal office hours.
- C. Customers are eligible for one credit per four-year period. The credit amount will be calculated and issued to the account at the General Manager's discretion if the leak is fixed in a timely manner and if repair receipts are provided.
- D. There will be no charges for customer emergency callouts (requests for temporary shutoff due to broken pipes, etc.) if the emergency is on the Water Company side of the meter. Charges incurred for leaks on the customer's side will be based on the General Manager's discretion.

V. BACKFLOW PREVENTION ASSEMBLY TESTING ON FIRE SUPPRESSION SYSTEMS

- A. The Water Company will not accept ownership of backflow prevention assemblies on fire suppression systems.

- B. Each backflow prevention assembly must be tested annually at the direction of the Water Company. The property owner or designee shall be responsible for having this test performed by a Backflow Assembly Tester, licensed in the State of Washington, and submitting the test report to the Water Company annually. The Water Company will not be responsible for any costs associated with this test.

Revision History:

Former Policy #77-5-R 8.2/3/4/5

Originated: 5/9/1977

Revised: 5/1/1994

Revised: 1/14/1998

Revised: 11/15/2006

Revised: 1/13/16

POLICY #3530. CHARGES RELATED TO PROPERTY SALES**I. MEMBERSHIP TRANSFER FEE**

A membership transfer fee will be charged for the transfer of a membership resulting from the sale or transfer of property (change of legal ownership) covered by the membership. The amount of this fee is listed in the current Fee Schedule.

II. MEMBERSHIP TRANSFER FEE WAIVER

When a sale or transfer of property covered by the membership is the result of the death of an owner of record, the membership transfer fee may be waived for the surviving spouse.

Revision History:

Former Policy #77-5-R 8.2/3/4/5

Originated: 5/9/1977

Revised: 1/14/1998

Revised: 11/15/2006

Revised: 1/13/16

POLICY #3610. CUSTOMER COMPLAINTS OF WATER QUALITY**I. COMPLAINT INVESTIGATION**

The Water Company will not charge to investigate complaints of sand, odor, clarity, etc.

If the customer wishes a “special,” other than a bacteriological sample, the Water Company will recommend a state-approved lab and it will be the customer’s responsibility to take and pay for the sample.

Bacteriological samples will be provided free for members once per calendar year, and will only be taken at the meter. If a member requests samples on the customer’s side of the meter, then the costs of the sample and service call will be added to the customer’s account.

II. DOCUMENTATION OF CUSTOMER COMPLAINTS

Customer complaints are to be logged in writing. Information shall include the customer name, date, and nature of the complaint, for example, sand, sediment, odor, etc.

Revision History:

Former Policy #79-4-R 7.1 and 77-5-R 8.2/3/4/5

Originated: Pre 1929, 5/9/1977

Revised: 4/23/1979, 5/1/1994

Revised: 10/11/2006

POLICY #3710. FRANCHISE AGREEMENTS

I. CITY OF EDGEWOOD

The Water Company waives all water fees to the City of Edgewood in exchange for a franchise agreement and waiver of all city fees in order to reduce administrative costs to members. This policy is to be reviewed in accordance with the terms of the franchise agreement.

Revision History:

Originated: 10/11/2006

Dear Water Company Employee:

Welcome to the Mt. View-Edgewood Water Company. If you are a new employee, the Water Company welcomes you and hopes that your experience with us will be rewarding. If you are a current employee, the Water Company wishes to express its sincere appreciation for your continued valued service.

A seven-member Board of Directors governs the Water Company. Each Board Member is elected by member-voters to serve a three-year term. The Board of Directors sets the general policies for operation.

The day-to-day functioning of the Water Company is administered by the General Manager appointed by the Board of Directors.

The mission of the Mt. View-Edgewood Water Company is to ensure public health and protection of property by providing sufficient quantities of safe and economical water for drinking and fire protection.

The goal of the Water Company is to provide excellent customer service to its members.

The purpose of this Employee Handbook is to ensure that all employees understand the personnel policies of the Water Company.

Revision History:

Originated: 11/15/2006

Employee Handbook Receipt and Acknowledgment

I have received a copy of the Mt. View-Edgewood Water Company’s Employee Handbook. I understand that the personnel policies contained in this Handbook are intended to be general guidelines only and do not constitute an express or implied employment agreement. I further understand that the policies and procedures contained herein may be amended, deleted, or revised by the Water Company, in its sole discretion, at any time.

I have read the Employee Handbook and understand my obligation to comply with the rules and procedures set forth therein.

Water Company Employee signature

Date

Revision History:
Originated: 11/15/2006

<p>POLICY #4110. EMPLOYEE CLASSIFICATIONS</p>
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I. EMPLOYEE CLASSIFICATIONS

A. Full-Time Employee

A full-time employee is one who works 32 or more hours per week, 12 months per year.

B. Part-Time Employee

A part-time employee is one who works 20-31 hours per week, 12 months per year.

C. Temporary Employee

A temporary employee is one who works on an occasional “on-call” basis.

Revision History:

Former Policy #79-P4.1

Originated: pre-1979

Revised: September 1995

Revised: 11/15/2006

POLICY #4120. HIRING, JOB PERFORMANCE, AND TERMINATION**I. HIRING****A. Equal Opportunity Employer**

The Water Company is an Equal Opportunity Employer. The Water Company complies with all federal rules and regulations and does not discriminate on the basis of race, color, religion, gender, national origin, age, or disability. Inquiries regarding compliance procedures may be directed to the General Manager.

B. Authority to Hire

The Board of Directors has the authority to hire the General Manager. The General Manager has the authority to hire staff to fill existing positions; however, each supervisor may provide input on hiring decisions. The Board must approve the creation of new positions.

C. Hiring of Family Members

Family members of any active member of the Board of Directors and/or management personnel will not be considered for employment within the Water Company.

D. Physical Examinations

The Water Company reserves the right to require prospective and current employees to undergo a physical examination at the expense of the Water Company when required to perform the duties in their job description.

E. Background Checks

The Water Company reserves the right to require prospective employees to undergo a criminal background and credit check paid for by the Water Company.

F. Pre-Employment Drug Screening

Before reporting for work, newly hired employees will be required to submit to a drug-screening test. Notification that all newly hired employees are subject to drug testing will be included in the interview process. A negative drug test result is a condition for employment. A newly hired employee who tests positive will be ineligible to work at the Water Company.

II. JOB PERFORMANCE

All regular employees meet once per year with their supervisor for their performance review. The supervisor uses the Employee Performance Review form to complete the following sections:

- Review of major job responsibilities
- Description of work done well
- Suggestions for improved performance

The employee completes the following sections:

- Description of any obstacles to better performance
- Ways that the supervisor can help improve performance

The employee and supervisor work together on developing measurable goals for the next reporting period.

The employee and the employee's supervisor sign the performance review. A Board Member reviews the performance review and also signs it.

III. TERMINATION

A. Dismissals

The General Manager has the authority to dismiss Water Company personnel. However, each designated supervisor may provide input to the Board of Directors on employee performance and dismissal recommendations.

In the State of Washington, employees are presumed to be "at-will." At-will employees may be terminated for any reason as long as it is not illegal.

B. Resignations

Employees should provide at least two weeks notice of resignation. Such notice should be given to the employee's immediate supervisor. If an employee fails to provide at least two weeks' notice, the employee forfeits the payment of accrued but unused vacation leave. This can be waived at the discretion of the General Manager.

Revision History:

Former Policy #2000-2-P5.3

Originated: 12/13/2000

Revised: 11/15/2006

Revised: 2/13/2013

Revised: 1/13/16

Mt.View-Edgewood Water Co.- Employee Performance Review

Employee Name: _____ Position: _____
Date: ____/____/____ Supervisor: _____
Review Period, From: ____/____/____ to: ____/____/____

MAJOR JOB RESPONSIBILITIES:

WORK DONE WELL:

Describe specific examples of the employee's best work, achievements, successes, and positive contributions that reflect the employee's strengths and qualities.

EMPLOYEE PERFORMANCE REVIEW (cont.)

ITEMS THAT COULD BE BETTER:

Describe anything the employee could improve, change, or learn to assist employee's career development and contributions to the work place.

OBSTACLES TO PERFORMANCE:

Employee's description of any obstacle that hinders performance.

WHAT CAN MY SUPERVISOR DO THAT WOULD HELP MY PERFORMANCE:

Describe anything that you need your supervisor to do that will help you perform at your best.

EMPLOYEE PERFORMANCE REVIEW (cont.)

Goals for next evaluation period:

<p><i>Employer: List goals and objectives for the next rating period based upon the Water System Plan, Board Guidance, General Manager's Guidance, and current workload.</i></p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
<p><i>Employee: List areas of self-improvement that will be addressed during the next rating period.</i></p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>

SUPERVISOR'S ACTION PLAN:

<p><i>List the actions you, as supervisor, will take to help the employee achieve their best performance.</i></p>	<hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>
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EMPLOYEE PERFORMANCE REVIEW (cont.)

SIGNATURES:

We have reviewed the current job description as part of this review process.

EMPLOYEE	DATE	SUPERVISOR	DATE
----------	------	------------	------

REVIEWER	DATE	TITLE
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Note: The signatures on this form means that parties are accepting accountability for the major responsibilities listed. We agree to work toward meeting performance standards, we have participated in this performance review, and commit ourselves to the action plans.

ADDITIONAL COMMENTS:

POLICY #4130. DRUG-FREE BUSINESS PROGRAM**I. DRUG-FREE BUSINESS PROGRAM**

The Water Company is committed to protecting the safety, health, and well-being of its employees and all people who come in contact with its employees, workplace(s) and property, and/or use the Water Company's products and services.

Recognizing that drug and alcohol abuse pose a direct and significant threat to this goal, and to the goal of a productive and efficient working environment in which all employees have an opportunity to reach their full potential, the Water Company is committed to assuring a drug-free working environment for all of its employees.

The Water Company is a member of the Washington Drug Free Business (WDFB) and adopts their program and procedures. This is a third-party drug-testing and compliance program. The Water Company requires drug testing of all new employees, and periodic random testing for all employees.

II. DRUG AND ALCOHOL PROHIBITIONS

The Water Company strictly prohibits the illicit use, purchase, possession, sale, conveyance, distribution or manufacture of illegal (under federal law) drugs, intoxicants or controlled substances in any amount or in any manner, including having a detectable presence of illegal drugs in the body systems.

In addition, the Water Company strictly prohibits the use of or being under any influence of alcohol or any drug(s) known to cause impairment during working hours or while on-call duty.

Prescription or nonprescription medications are not prohibited when taken in accordance with a lawful prescription or consistent with standard dosage recommendations. Prescription medication means a drug or medication lawfully prescribed, under both federal and state law, by a physician, or other health care provider licensed to prescribe medication, for an individual and taken in accordance with the prescription.

Employees are responsible for notifying their supervisors when prescribed medications may interfere with their ability to do their jobs.

III. PRE-EMPLOYMENT DRUG SCREENING

Before reporting for work, newly hired employees will be required to submit to a drug-screening test. Notification that all newly hired employees are subject to drug testing will be included in the interview process. A negative drug test result is a condition for employment. A newly hired employee who tests positive will be ineligible to work at the Water Company.

IV. DRUG AND ALCOHOL TESTING

The Water Company asserts its legal right and prerogative to test any employee for substance abuse randomly during employment and/or on suspicion of impairment. Employees may be asked to submit to a medical examination and/or to submit to urine, saliva, and/or breath testing for drugs or alcohol.

Employee acceptance of medical examinations and testing, when requested by the Water Company, is a mandatory condition of employment. Refusal to submit to such medical examinations and tests constitutes a violation of Company policy and is grounds for adverse employment action.

V. DISCIPLINE

Any violations of this policy shall result in adverse employment action up to and including dismissal and referral for criminal prosecution.

Revision History:

Former Policy #92-7-P 8.3

Originated: 6/12/2000

Revised 3/20/2001

Revised: 11/15/2006

Revised: 2/13/2013

Revised: 11/18/15

POLICY #4210. GENERAL MANAGER JOB DESCRIPTION**I. JOB SUMMARY**

The primary responsibility of all Mt. View-Edgewood Water Company employees is to ensure public health and protection of property by providing sufficient quantities of safe water for drinking and fire protection. The goal of the Water Company is to provide excellent customer service to its members.

The General Manager is responsible for overall management and daily operations of the Water Company. This includes long-term planning, budget preparation, systems operations and maintenance, water quality, new installations, capital programs, customer service, work scheduling, monitoring, compliance with regulations, safety and training, company policies, and communications with the Board of Directors.

The General Manager reports to the Board of Directors.

II. JOB DUTIES AND RESPONSIBILITIES**A. Annual Operating Budget**

- Provide revenues and cost projections.
- Prepare wage and benefits plan.
- Recommend capital improvements.
- Present the integrated budget plan to the Board for approval.

B. Daily Operations Management

- Plan daily activities.
- Estimate time requirements.
- Oversee scheduling of human resources and equipment.
- Establish priorities.
- Assign responsibilities.
- Oversee inventory.
- Adjust operations as needed to meet unforeseen events.
- Establish priorities, manage risk.
- Has hire and fire authority for staff on existing positions. The Board must approve the creation of new positions.
- Oversee and perform employee performance reviews.
- Accumulate continuing education units to maintain certifications.

- C. Customer Service
 - Respond to customer complaints.
 - Oversee service order work.
 - Work with local government officials and other stakeholders.
 - Assist staff to inform customers when system work affects them.
 - Assist staff with membership conflicts.

- D. System and Support Equipment Maintenance
 - Develop scheduled maintenance programs with the Field Manager.
 - Provide resources to support maintenance programs.
 - Maintain on-call emergency response capability.

- E. Regulatory Compliance
 - Ensure that all system changes meet company, engineering, and regulatory requirements.
 - Ensure compliance with applicable federal, state, and local regulations.
 - Oversee water quality sampling programs.
 - Maintain emphasis on safety and security.
 - Anticipate new regulations and plan for their implementation.
 - Maintain Company membership and participate in the AWWA and the Regional Water Co-op of Pierce County.

- F. Water System Plan
 - Administer the annual capital budget.
 - Update comprehensive plan to accommodate anticipated growth and needed system upgrades.

- G. Board and Member Communications
 - Provide regular communications with the Board of Directors and the membership-at-large.
 - Present operating and financial reports at the monthly Board meeting.
 - Prepare GM's report for the Board packets.
 - Prepare the agenda for the annual membership meeting.

- H. Administer Water Company Policies and Procedures
 - Ensure that policies are current and equitable.
 - Maintain job descriptions and performance standards.
 - Provide for staff development.
 - Provide overall risk assessment for the Company.

III. JOB REQUIREMENTS**A. Licenses and Certifications**

- Washington State Department of Health Water Distribution Manager II (WDM II) certification
- Cross-Connection Specialist (CCS) Certification
- Federal Emergency Management Agency training courses, ICS-100, ICS-200, ICS-300, and ICS-400
- Washington State Driver's License
- First Aid card

B. Skills and Experience

- Bachelor's degree and/or at least five years of management experience
- Water system operating experience
- Organizational and people skills

Revision History:

Former Policy #92-1-P 6.2, 3

Originated: 7/7/1988

Revised: 2/12/2003

Revised: 3/3/2006

Revised: 11/15/2006

Revised: 1/13/16

POLICY #4220. FIELD MANAGER JOB DESCRIPTION**I. JOB SUMMARY**

The primary responsibility of all Mt. View-Edgewood Water Company employees is to ensure public health and protection of property by providing sufficient quantities of safe water for drinking and fire protection. The goal of the Water Company is to provide excellent customer service to its members.

The Field Manager operates the water system; maintains and repairs the water system; performs service installations and capital improvements; maintains the facilities, grounds, supplies, parts, and equipment; and performs various administrative duties.

The Field Manager reports to the General Manager.

II. JOB DUTIES AND RESPONSIBILITIES**A. Water System Operation**

- Responsible for inspections of wells and reservoirs as needed.
- Perform daily telemetry inspections and adjustments to maximize efficiency.
- Monitor monthly static well levels.
- Supervise meter reading.
- Perform public notifications when necessary to protect health.
- Responsible for locating service.

B. Water System Maintenance and Repair

- Supervise preventive maintenance program for wells, reservoirs, and distribution system (including valves and meters).
- Supervise Coliform Monitoring Plan and water sampling.
- Review lab results.
- Investigate and resolve customer complaints and service orders.
- Supervise and perform leak detection and repair.
- Maintain unaccounted-for water below 10%.
- Supervise and perform emergency repairs.
- Supervise and perform flushing.

- C. Service Installations and Capital Improvements
 - Plan, design, and install system improvements and new services.
 - Ensure adequate pumping capacity, storage, and distribution.
 - Calculate flows, pressures, volumes, and disinfection dose rates.
 - Ensure that system meets all regulatory requirements.
 - Act as general contractor and manage construction projects.
- D. Facilities, Grounds, Supplies, Parts, and Equipment
 - Operate and maintain field equipment and vehicles.
 - Supervise repair and maintenance of buildings, grounds, vehicles, equipment, tools, and computer hardware.
 - Plan and administer security measures.
 - Order, receive, store, and inventory supplies, parts, and equipment.
- E. Administrative Duties
 - Perform General Manager duties in the absence of the General Manager.
 - Provide input to budget and ensure that expenditures are within budget.
 - Supervise field staff and contractors.
 - Schedule staff for (and performs) on-call duty and overtime.
 - Ensure safety of staff and contractors.
 - Participate in field staff evaluations.
 - Manage Cross Connection Control (CCC) program and associated contracts.
 - Issue Water Availability Certificates.
 - Update system flow maps.
 - Perform development extension plan review and participate in meetings.
 - Complete easement descriptions.
 - Complete Right of Way permits.
 - Obtain work permits.
 - Assist with Water System Plan, Wellhead Protection Plan, and Water Rights.
 - Complete reports to government agencies.
 - Maintain records and files.
 - Coordinate with lessees and wholesale customers.
 - Communicate with staff, directors, government agencies, and members.
- F. Accumulate continuing education units as necessary to maintain certifications.
- G. Perform other duties as assigned.

III. JOB REQUIREMENTS

- A. Licenses and Certifications
 - Washington State Department of Health Water Distribution Manager II (WDM II) certification
 - Cross-Connection Specialist (CCS) certification

- Federal Emergency Management Agency training courses ICS-100 and ICS-200
- Confined Space/Competent Person Certificate
- Class B Commercial Driving License
- Medical Examiner's Certificate
- First Aid card
- Flagger's card

B. Skills and Experience

- Not less than five years of water system operating and maintenance experience
- Equipment operating skills
- Planning and scheduling skills and experience
- Supervisory and organizational skills and experience

Revision History:

Former Policy #92-1-P 6.6

Originated: 4/23/1998

Revised: 9/30/2005

Revised: 11/15/2006

Revised: 2/13/2013

Revised: 1/13/16

POLICY #4230. OFFICE MANAGER JOB DESCRIPTION**I. JOB SUMMARY**

The primary responsibility of all Mt. View-Edgewood Water Company employees is to ensure public health and protection of property by providing sufficient quantities of safe water for drinking and fire protection. The goal of the Water Company is to provide excellent customer service to its members.

The Office Manager performs and/or supervises all general accounting and bookkeeping activities. These include, but are not limited to: preparing the annual operating budget, preparing materials for the annual audit, assisting with customer service activities, overseeing maintenance of office machines, purchasing supplies, tracking field inventory purchases and issues, performing secretarial duties for the General Manager and the Field Manager, and preparing regular operating and financial reports for the Board of Directors.

The Office Manager reports to the General Manager.

II. JOB DUTIES AND RESPONSIBILITIES**A. Company Bookkeeping**

- Perform monthly General Ledger reconciliation.
- Supervise and perform all accounts payable activities.
- Supervise the reconciliation of cash receipts, petty cash, and banking transactions.
- Supervise or perform all other necessary bookkeeping and general accounting functions.
- Maintain and book activity for CIAC developer contribution (contributions in aid of construction).

B. Inventory

- Supervise or perform records maintenance of all inventory activity.
- Provide monthly updates for the Field Manager.
- Supervise or perform records maintenance of all job order activity and provide timely updates for the General Manager and Field Manager.

- C. Employee Insurance and Pension
 - Administer bookkeeping and other activities for the employee medical/dental/vision insurance plan.
 - Administer bookkeeping and other activities for the Simplified Employee Pension Plan (SEP/IRA).
- D. Annual Budget and Annual Audit
 - Assemble data and prepare preliminary annual budget for review and adjustments by the General Manager and Board of Directors.
 - Prepare for the annual audit, assist the auditors, and maintain audit records.
- E. Fixed Assets
 - Process and monitor fixed assets and depreciation.
 - Maintain asset records for additions and deletions for annual audit papers.
- F. Customer Service
 - Assist with customer service by answering phones, preparing service orders, processing mail, and providing customer information for the field staff.
 - Help maintain filing system.
 - Perform any general office tasks to assist in customer service as needed on a daily basis.
 - Supervise office staff and participate in office staff evaluations.
- G. Operating and Financial Information
 - Prepare operating and financial information for the Board of Directors.
 - Provide monthly financial statements and any other reports requested by the General Manager and/or the Board of Directors.
 - Maintain the minutes of the monthly Board meetings.
 - Maintain security of personal information (Red Flag Rule Program).
- H. Payroll
 - Process and reconcile employee time sheets.
 - Prepare payroll records, checks, tax deposits, and quarterly returns.
 - Process SEP deposits.
 - Monitor vacation, sick leave, and compensatory time records.
- I. Information Technology (IT) Services
 - Coordinate all IT activities, including with contractors.
 - Manage cyber security program.
 - Maintain company website.
 - Purchase and maintain IT hardware and software.
 - Coordinate IT services with contractors.

III. JOB REQUIREMENTS

- A. Bookkeeping and accounting experience.

- B. Computer operation skills.
- C. Organization and planning skills.
- D. Supervisory skills.
- E. Basic water works knowledge.
- F. Information Technology (IT) skills.

Revision History:

Former Policy #92-1-P 6.2, 3

Originated: 7/7/1988

Revised: 2/12/2003

Revised: 5/21/2004

Revised: 11/15/2006

Revised: 2/13/2013

Revised 1/13/16

POLICY #4240. CUSTOMER SERVICE REPRESENTATIVE JOB DESCRIPTION**I. JOB SUMMARY**

The primary responsibility of all Mt. View-Edgewood Water Company employees is to ensure public health and protection of property by providing sufficient quantities of safe water for drinking and fire protection. The goal of the Water Company is to provide excellent customer service to its members.

The Customer Service Representative is responsible for all membership transactions, accounts receivables, bills and collections, and customer accounts.

The Customer Service Representative reports to the Office Manager.

II. JOB DUTIES AND RESPONSIBILITIES**A. Customer Membership Transactions**

- Maintain customer membership records.
- Prepare new and transferred membership applications.
- Plan and prepare annual membership meeting in October of each year.
- Maintain security of personal information (Red Flag Rule Program).

B. Accounts Receivables

- Receive and post customer payments.
- Prepare daily bank deposits.
- Reconcile customer accounts.
- Prepare and review posting reports.
- Prepare and reconcile month-end reports.

C. Billing and Collections

- Prepare records for all meter-reading cycles and transfer readings into billing software after meter reading.
- Prepare necessary reports for outsourced billing and verify accuracy.
- Answer and record customer billing and collection questions and make adjustments as necessary to customer accounts.
- Prepare shutoff notices and inform the City of Edgewood of extended service shutoffs.
- Maintain and reconcile cash daily.

D. Customer Accounts

- Serve as primary point of contact for all customer communications. Record and resolve all customer complaints and inquiries.
- Establish and maintain customer account records.
- Initiate, track, and resolve all service orders on customer accounts.
- Assist field crew in communicating messages to members and customers.
- Process and distribute daily mail.
- Determine and document all fees associated with customer accounts in accordance with the Water Company ByLaws and Fee Schedule.
- Communicate with members, escrow companies, and realtors about ByLaws, policies, applications, forms, and membership information. Review submitted paperwork for completeness and accuracy.
- Prepare and file all customer applications for service.
- Assist Cross Connection Control Program Manager.

E. Assist Office Manager with secretarial services for the General Manager and Field Manager.

F. Assist the Field Manager in processing and tracking Water Availability Letters.

G. Perform other duties as assigned.

III. JOB REQUIREMENTS

- A. Notary Public License
- B. Computer skills
- C. Bookkeeping and accounting experience
- D. People skills
- E. Customer services skills
- F. Basic water works knowledge

Revision History:

Originated: 9/30/2005

Revised: 11/15/2006

Revised: 2/13/2013

Revised: 1/13/16

POLICY #4245. OFFICE ASSISTANT JOB DESCRIPTION**I. JOB SUMMARY**

The primary responsibility of all Mt. View-Edgewood Water Company employees is to ensure public health and protection of property by providing sufficient quantities of safe water for drinking and fire protection. The goal of the Water Company is to provide excellent customer service to its members.

The Office Assistant supports other staff in administrative duties.

The Office Assistant reports to the Office Manager.

II. JOB DUTIES AND RESPONSIBILITIES**A. Finance/Administrative**

- Assist the Office Manager with data entry, filing, and other routine tasks.
- Assist the Customer Service Representative with billing preparation, record keeping, and other routine tasks.
- Serve as a point of contact for customer communications.
- Record and resolve customer complaints and inquiries.
- Assist field crew in communicating messages to members and customers.
- Assist the General Manager with various special projects as assigned.

B. Field/Operations

- Assist the Field Manager with record keeping, filing, and other routine administrative tasks.
- Assist the Field Technicians with various administrative tasks.

C. Assist the Office Manager with secretarial services for the General Manager and Field Manager.**D. Perform other duties as assigned.****III. JOB REQUIREMENTS**

- Obtain Notary Public License within six months of employment
- Computer skills
- Customer service skills

Revision History:

Originated:1/13/2016

POLICY #4250. FIELD TECHNICIAN JOB DESCRIPTION**I. JOB SUMMARY**

The primary responsibility of all Mt. View-Edgewood Water Company employees is to ensure public health and protection of property by providing sufficient quantities of safe water for drinking and fire protection. The goal of the Water Company is to provide excellent customer service to its members.

The Field Technician operates the water system; maintains and repairs the water system; performs service installations and capital improvements; may perform backflow assembly testing; and maintains the facilities, grounds, supplies, parts, and equipment. The Field Technician may serve as the lead of a job or project as directed by the Field Manager.

The Field Technician reports to the Field Manager.

II. JOB DUTIES AND RESPONSIBILITIES**A. Water System Operation**

- Perform inspections of wells and reservoirs as needed.
- Perform routine telemetry inspections and adjustments to maximize efficiency.
- Serve as first responder to system emergencies after hours.
- Monitor monthly static well levels.
- Schedule, obtain, and check meter readings.
- Perform public notifications when necessary to protect health.
- Perform customer notification of service interruptions.
- Perform locating service.

B. Water System Maintenance and Repair

- Perform preventive maintenance on wells, reservoirs, and distribution system (including valves and meters).
- Implement or assist with Coliform Monitoring Plan and water sampling.
- Review lab results.
- Investigate and resolve customer complaints and service orders.
- Detect and repair leaks.
- Maintain unaccounted-for water below 10%.
- Provide technical advice and problem-solving to system problems.
- Perform emergency repairs.
- Perform flushing and disinfection as needed.

- C. Service Installations and Capital Improvements
 - Assist Field Manager with plans and designs. Install system improvements.
 - Install new services and premises isolation.
 - Perform development extension inspections.
 - Maintain knowledge of development standards and inform contractors as necessary.
 - Calculate flows, pressures, volumes, and disinfection dose rates.
 - Ensure that system meets all regulatory requirements.
 - Perform construction projects.
- D. Facilities, Grounds, Supplies, Parts, and Equipment
 - Operate and maintain field equipment and vehicles.
 - Repair and maintain buildings, grounds, vehicles, equipment, and tools.
 - Enforce and inspect security measures.
 - Order, receive, store, and inventory supplies, parts, and equipment.
- E. Administrative Duties
 - Perform Field Manager duties in the absence of the Field Manager.
 - May serve as the Safety Officer.
 - Serve as Cross Connection Control Specialist (assistant) or Backflow Assembly Tester.
 - Provide input to budget and ensure that expenditures are within budget.
 - Perform on-call duty and overtime as required.
 - Assist Field Manager with development extension plan review.
 - Maintain maps, records, and files.
 - Communicate with staff and members.
- F. Accumulate continuing education units as necessary to maintain certifications.
- G. Perform other duties as assigned.

III. JOB REQUIREMENTS

- A. Licenses and Certifications
 - Washington DOH Water Distribution Manager I (WDM I) certification (within 18 months of hire)
 - Washington DOH Cross Connection Control Specialist or Backflow Assembly Tester (BAT) certification (within 18 months of hire)
 - Federal Emergency Management Agency training course ICS-100 (within six months of hire)
 - Confined Space/Competent Person Certification (within 12 months of hire)
 - Class B Commercial Driving License (within 12 months of hire)
 - Medical Examiner's Certificate (within 12 months of hire)
 - First Aid card (within six months of hire)
 - Flagger's card (within six months of hire)

B. Skills and Experience

- General knowledge of hand and power tools
- General knowledge of working with and around heavy equipment
- Planning and scheduling abilities

IV. FIELD STAFF CROSS-TRAINING

Because the Mt. View-Edgewood Water Company is a small company, it is important for all field staff to be cross-trained to handle all activities.

In addition to mastering their own duties and responsibilities, the Field Manager and Field Technicians shall be familiar with all field duties.

Revision History:

Former Policy #92-1-P 6.6 and 92-1-P 6.7

Originated: pre 1979

Revised: 4/23/1998

Revised: 9/30/2005

Revised: 11/15/2006

Revised: 2/13/2013

Revised: 1/13/16

POLICY #4310. WAGES AND SALARIES**I. WORK WEEK**

Employees will log work time on weekly time sheets available from the Accounting Manager.

II. PAY PERIOD AND PAYROLL

The payroll shall be processed on a semi-monthly basis.

The pay period shall close on the 15th and the last day of the month at midnight. Payroll checks shall be issued at the close of the workday on the 5th and 20th of the month or the last work day prior to the 5th and the 20th.

III. WAGES AND SALARIES

Wages, salaries, and benefits of all employees shall be those established by the General Manager, subject to periodic revision as the General Manager may deem advisable.

The Wage Change Form shall be maintained in each employee's personnel file.

IV. OVERTIME AND COMPENSATORY TIME

Overtime for non-supervisory employees shall be paid at the rate of time-and-one-half for work in excess of 40 hours in any week.

With the exception of the General Manager, supervisory employees required to work a longer work period than those specified shall receive the same overtime rates as non-supervisory employees.

For on-call duty, the employee will be paid the equivalent of six hours (at time-and-one-half) for each weekend worked, and three hours (at time-and-one-half) for each holiday worked.

Overtime does not apply to business-related conferences or workshops. When hourly employees are traveling out of the area for a business-related training opportunity, they will be paid 8 hours per day for the training day.

V. EMPLOYEE PAY ON HOLIDAYS

- A. Full-time employees are paid at the regular pay rate.
- B. Part-time employees are paid at one-half the regular pay rate.
- C. Temporary employees do not earn holiday pay.

VI. EMPLOYEE PAY FOR WORKING ON HOLIDAYS

Any necessary work performed on any holiday shall be paid the regular holiday pay rate, plus the overtime rate of time-and-one-half.

VII. BOARD COMPENSATION

The Board of Directors shall be compensated for attending Board meetings but shall not be considered employees of the company.

It shall be understood that the individual Directors shall be responsible for paying all taxes for compensation received. No Director shall be covered for State Employment Security or Labor and Industries taxes. For tax reporting purposes, each Director will receive Form 1099-Miscellaneous Income at the end of each calendar year.

Compensation checks shall be issued to each Board member at the Board Meeting following the end of each calendar quarter.

Compensation rates are as follows for regular Board meetings and the annual meeting:

- President - \$275.00
- Secretary - \$250.00
- Treasurer - \$250.00
- All other Directors - \$225.00

The compensation rate for extra meetings of one-and-one-half hours or less will be \$75.00 for each Director in attendance.

The compensation rate for extra meetings of more than one-and-one-half hours will be \$150.00 for each Director in attendance.

The compensation rate for time spent on Board approved special projects will be \$75/Hour. Each Director shall track their time and submit to the Finance Manager quarterly.

Directors will be compensated for out-of-pocket expenses based on IRS guidelines.

Revision History:

Former Policy #73-7.1 and #73-p 5.2

Originated: pre-1973 and 12/14/94

Revised: 3/13/2001 and 7/10/02
Combined and Revised: 11/15/2006
Revised: 2/13/2013
Revised: 10/15/2014
Revised: 9/16/15
Revised: 11/18/15

POLICY #4320. EXPENSES FOR BUSINESS TRAVEL**I. EXPENSES FOR REMOTE EVENTS**

For necessary travel for seminars, conventions, outside meetings, and other such events beyond the local area, the Water Company will pay reasonable expenses for registration, travel, meals, lodging, etc.

The Water Company will pre-pay for registration, travel, lodging, etc. whenever possible.

Advances for travel, lodging, meals, etc., will be made only with General Manager pre-approval and will require subsequent receipt documentation.

Reimbursement for business expenses will only be approved for employees or directors.

II. EXPENSES FOR ONE-DAY LOCAL AREA EVENTS

For necessary participation in seminars, conventions, outside meetings, and other such events within the local area, employees and Board members will pay the necessary costs for meals and transportation and will be reimbursed upon presentation of receipts and/or mileage records to the Accounting Manager.

Reasonable lunch expenses for each employee or director will be reimbursed.

A company vehicle will be used for transportation whenever possible. If a personal vehicle is used to travel to the event, mileage will be reimbursed at the current federal reimbursable rate per mile.

Reimbursement for business expenses will only be approved for employees or directors.

Revision History:

Former Policy #73-p7.7

Originated: pre-1973

Revised: 1/11/1995

Revised: 11/15/2006

POLICY #4330. TRAINING

I. TRAINING OPPORTUNITIES

Training opportunities will be provided to employees.

If a needed conference, workshop, or other training opportunity is available in the local area, this is preferred over similar events that incur extensive travel and lodging expenses out of the area.

II. TRAINING TO MAINTAIN LICENSING

Training opportunities for the purposes of maintaining required licensing for the operation of the Water Company shall receive priority consideration.

Revision History:

Originated: 11/15/2006

POLICY #4410. HOLIDAYS

I. COMPANY HOLIDAYS

The following are observed holidays of the Water Company:

- New Year's Day
- Martin Luther King Day
- President's Day
- Memorial Day
- Fourth of July
- Labor Day
- Veteran's Day
- Thanksgiving Day
- Day After Thanksgiving Day
- Christmas Day

II. PERSONAL MANAGEMENT HOLIDAYS

Employees are also entitled to two personal management days which are accrued on January 1st of each year and must be used or they will be forfeited by December 31st of the same year.

Revision History:

Former Policy #73-P7.2

Originated: pre-1973

Revised: 10/9/1991

Revised: 11/15/2006

Revised: 2/13/2013

POLICY #4420. VACATIONS

I. VACATION ACCRUAL

A. Full-Time Employees

Full-time employees accrue vacation time as follows.

After	Employee accrues vacation time of:
1 st year of employment	5 days
2 nd year	10 days
3 rd through 6 th year	10 days plus 1 day for each successive year
7 th year	15 days
8 th through 11 th year	15 days plus 1 day for each successive year
12 th year	20 days

B. Part-Time and Temporary Employees

Part-time and temporary employees do not earn paid vacation benefits.

II. VACATION SCHEDULING

A. Vacation accrues on the anniversary of the employee’s hire date.

B. Accrued vacation should be used up each year.

C. No more than 40 hours of vacation time may be carried forward to the following year.

D. Special requests regarding vacation accrual or pay in lieu of vacation may be presented to the General Manager and the Board of Directors for consideration.

E. All functions must have adequate coverage at all times. That is, the accounting manager and customer account specialist must coordinate vacations and other time off. At least one member of the full-time field staff must be on duty at all times.

Revision History:

Former Policy #73-P 7.3

Originated: pre-1973

Revised: 10/9/1991

Revised: 11/15/2006

POLICY #4430. SICK LEAVE**I. SICK LEAVE FOR FULL-TIME EMPLOYEES**

Sick leave without deduction of pay shall be provided for permanent full-time (32-40 hours per week) employees after three months of employment.

Employees who work 40 hours per week shall receive accrued sick leave at one day per month (8 hours), to a total of 12 days (96 hours) per year, with a cumulative limit of 36 days or 288 hours.

Employees who work 32 hours per week shall receive accrued sick leave prorated to hours worked.

Sick leave is not a vested benefit and will not be paid upon separation of employment.

However, after accumulating 96 hours of sick leave, an employee may trade 24 hours of sick leave for 8 hours of pay; after accumulating 192 hours of sick leave, an employee may trade 40 hours of sick leave for 16 hours of pay; after accumulating 288 hours of sick leave, an employee may trade 56 hours of sick leave for 24 hours of pay.

II. SICK LEAVE FOR PART-TIME OR TEMPORARY EMPLOYEES

Part-time and temporary employees are not eligible for paid sick leave benefits.

III. VERIFICATION OF HEALTH CONDITION

The Water Company may require certification or verification of the illness or other health condition. It is understood that there may be some restrictions as to medical confidentiality that limits the type of information that can be shared.

Revision History:

Former Policy #73-P 7.4

Originated: pre-1973

Revised: 1999

Revised: 11/14/2007

Revised: 2/13/2013

POLICY #4440. OTHER SHORT-TERM LEAVE**I. JURY DUTY LEAVE**

Regular full-time employees of the Water Company shall continue their wages or salary during such times that they are called to serve on a jury or are subpoenaed as witnesses. A full-time employee is one who works 1664 to 2080 hours (not including overtime) annually.

Employees who are called to serve as jurors or subpoenaed as witnesses shall request time off well in advance of the event. The employee shall supply the General Manager with a copy of the summons or subpoena.

Employees may keep the Jury Duty Pay for the first week of serving. If the case goes beyond one week, Jury Duty Pay is given to the Water Company to cover the salary/wages expended by the Water Company.

Employees are expected to report for work all or part of any day they are not engaged in jury duty.

This procedure applies to employees who are called to serve as jurors or witnesses. It is not applicable to cases in which the employee is personally involved as a plaintiff or defendant.

II. BEREAVEMENT LEAVE

At the discretion of the General Manager, a regular full-time employee shall receive up to four paid days of bereavement leave in the event of a death of the employee's child, parent, spouse, sibling, grandparent, in-law, stepparent, stepchild, or stepsiblings. An employee may use accrued sick leave or vacation to extend the bereavement leave beyond the four paid days.

Revision History:

Former Policy #73-P 7.4

Originated: pre 1973

Revised: 1999

Revised: 11/15/2006

POLICY #4450. FAMILY AND MEDICAL LEAVE**I. ELIGIBILITY FOR THE FAMILY CARE ACT**

Under the provisions of the State of Washington Family Care Act, employees may use their available paid sick leave or other paid time off to:

- Care for a sick child with a routine illness.
- Care for a spouse, parent, parent-in-law, or grandparent with a serious or emergency health condition.
- Care for an adult child with a disability.

This provision does not cover the care of siblings, domestic partners, aunts and uncles, grandparents-in-law, or grandchildren.

II. VERIFICATION OF HEALTH CONDITION

The Water Company may require certification or verification of the illness or other health condition. It is understood that there may be some restrictions as to medical confidentiality that limits the type of information that can be shared.

Revision History:

Originated: 11/15/2006

POLICY #4460. EXTENDED LEAVES OF ABSENCE**I. MATERNITY LEAVE**

An unpaid maternity/paternity leave of absence will be granted for an employee for up to six weeks. The employee may use accrued sick leave, vacation, short-term disability and long-term disability benefits during the maternity disability leave.

II. DISABILITY LEAVE

As soon as an employee becomes aware that he or she is, or will be temporarily disabled from working for any medical reason, the employee must promptly advise the General Manager, in writing, of the reason, the anticipated commencement date, and the anticipated duration of the disability.

A medical leave of absence may be granted, without pay, for the period of actual disability up to a maximum of three months or as required by state law. (For provisions relating to maternity leave, see the Maternity Leave section above.) If the employee is still disabled after three months, the Water Company will review the situation to determine whether an extension of leave is appropriate.

The Water Company may require periodic verification of the employee's ability to work (including, for example, examination by a doctor designated by the Water Company). Any misrepresentation of the leave request or disability may result in disciplinary action, up to and including termination of employment.

Disability leave is unpaid, but the employee may use accrued sick leave, vacation pay, short-term disability, and long-term disability benefits.

The Water Company will continue group medical insurance for employees on leaves of absence until the first month following three months. After that time employees may continue their health insurance through the COBRA continuation program at their own expense.

III. MILITARY LEAVE

A. Temporary Short-Term Military Leave

Employees who are members of the National Guard or Federal Reserve Military Units are entitled to paid leave for a period of up to 10 working days per year, or any greater period required by law, for performing ordered active duty training or other short-term active military duty. If the active duty exceeds 10 working days, the employee may take available vacation, and then leave without pay. All insurance benefits will continue during the employee's temporary military leave.

B. Extended Military Leave

Employees ordered to participate in extended military duties in the U.S. Armed Forces that exceed 10 working days will be placed on an unpaid military leave of absence status. The employee may use any or all accrued paid vacation or sick leave during their absence, or they may take unpaid leave.

C. Notice to Begin and End Military Leave

The employee will provide his or her immediate supervisor with notice as soon as they have knowledge of upcoming military service.

When the active duty is ending, the employee must notify the supervisor or General Manager of his or her intention to return to work.

D. Benefits during Military Leave of Absence

Employees do not accrue vacation or sick leave while on military leave of absence status.

The Water Company will continue group medical insurance for employees on military leaves of absence until the first of the month following three months. After that time employees may continue their health insurance through the COBRA continuation program at their own expense.

The group life and long-term disability insurance provided by the Water Company will be suspended the day the employee becomes active military.

Benefits during active duty shall be in compliance with current state and federal laws.

E. Reinstatement

Reservists are entitled to return to a job as provided under federal and state law.

Reinstatement following active duty shall be in compliance with state and federal laws at the time of the employee's return to work.

IV. PERSONAL LEAVE

A personal, unpaid leave of absence may be granted to full-time employees with at least one year of continuous service in cases where an extended period of time away from the job will be in the best interest of the Water Company. The granting or denial of personal leave is at the sole discretion of the General Manager.

A maximum of three months may be granted for a personal leave.

V. LEAVE OF ABSENCE REQUEST

Requests for a leave of absence or an extension of a leave, except in very unusual or emergency situations, must be submitted in writing to the General Manager at least one month prior to commencement of the leave period or extension. The General Manager will notify the employee as soon as possible as to whether or not the request has been approved. Employees should not assume that they are on leave of absence until they have been officially notified of that fact.

VI. CONDITIONS FOR LEAVES OF ABSENCE

All leaves of absence are subject to the following conditions:

- A. An employee who applies for or engages in any work while on a leave of absence will be subject to immediate termination unless management has consented to the arrangement in advance and in writing.
- B. An employee who improperly applies for unemployment benefits while on a leave of absence will be subject to immediate termination.
- C. An employee who engages in any conduct or activity which violates restrictions imposed by a physician or which might otherwise delay full return to regular employment will be subject to disciplinary action up to and including termination of employment.
- D. When requesting leaves, employees should try to estimate the amount of time required for the leave. If the reason for the leave ceases to exist prior to the estimated expiration date, the employee must immediately inform management.
- E. The Water Company reserves the right to initiate a leave of absence if it concludes that the employee's attendance, quality or quantity of work, safety or efficiency have been adversely affected by some medical condition requiring time off for treatment or personal circumstances.
- F. Unless stated otherwise in this policy, if the employee returns to work at the conclusion of a leave of absence, he or she will be restored to their original job or

the first one which is available, suitable and of like status of pay provided that the requirements for obtaining and returning from the leave have been satisfied.

- G. If an employee fails to return to work at the conclusion of a leave of absence, the leave will be cancelled and his or her employment will be terminated. The effective date of the termination will be the last day worked. Termination will be treated as a voluntary resignation. For COBRA purposes, the date that group coverage was terminated will be the qualifying COBRA effective date.
- H. All leaves of absence are subject to applicable state and federal laws. Questions should be directed to the General Manager.

Revision History:

Previous Policy #73-P7.45

Originated: 1/10/2001

Revised: 03/07/2013

POLICY #4470. INSURANCES**I. INSURANCE BENEFITS FOR FULL-TIME AND PART-TIME EMPLOYEES****A. Medical Insurance**

The Water Company will offer medical insurance for the full-time and part-time employee, spouse, and dependents.

The full medical insurance premium is paid for the employee beginning on the first of the month following employment.

Twenty-five percent of the monthly medical insurance premium maximum is paid by the Water Company for the spouse. Additionally, 25% of the monthly medical premium is paid by the Water Company for dependents for a maximum of two dependents only. The employee may pay additional medical premiums as necessary through payroll deduction.

Employees will be responsible for the first \$1,200.00 out-of-pocket expenses. The Water Company will reimburse employees the next \$1,500.00 or until they reach Medical Insurance Policy out-of-pocket expense. Employees will be responsible for submitting claims to the accounting manager for reimbursement. The Water Company does not reimburse employees for co-pays.

B. Vision Insurance

Vision insurance is part of the medical insurance policy.

C. Dental Insurance

Dental insurance is provided for the full-time employee only beginning on the first of the month following employment.

D. Life Insurance

Life insurance, including accidental death and dismemberment, is provided for the full-time employee only beginning on the first of the month following employment.

E. Disability Insurance

Short-term and long-term disability insurance is provided for the full-time employee only beginning on the first of the month following employment.

II. INSURANCE FOR TEMPORARY EMPLOYEES

Temporary employees do not earn paid insurance benefits.

Revision History:

Previous Policy #73-P7.5

Originated: pre-1973

Revised: July 1992

Revised: 11/15/2006

Revised: 10/07/2008

Revised: 02/13/2013

Revised: 11/18/15

POLICY #4480. SIMPLIFIED EMPLOYEE PENSION PLAN (SEP)**I. PENSION PLAN FOR FULL-TIME AND PART-TIME EMPLOYEES**

The Water Company provides a Simplified Employee Pension Plan Individual Retirement Account (SEP/IRA) for all qualified full-time and part-time employees.

To qualify for SEP/IRA benefits, the employee must:

- Be at least 21 years of age.
- Have worked for the company for at least one year.
- Have received more than the minimum amount of compensation as set by the U.S. Treasury Department.

The Board of Directors decides how much to contribute to the employees' SEP/IRA. Currently, the Water Company contributes 7.5% of the employee's annual salary.

Employees may also contribute to their SEP/IRA through the Salary Deferral option of the plan.

Each employee will receive a copy of the Company's Plan Adoption Agreement and a plan booklet describing the plan option, limitations, and other details.

II. PENSION PLAN FOR TEMPORARY EMPLOYEES

Part-time and temporary employees are not eligible for the Water Company's pension plan.

Revision History:

Previous Policy #73-P 7.6

Originated: pre-1973

Revised: 7/12/1989

Revised 11/15/2006

POLICY #4510. WORK SCHEDULES**I. OFFICE HOURS**

The Water Company's normal office hours are 8:00 am to 4:30 pm.

If a customer calls the Water Company after hours or on holidays, the answering machine specifies the emergency phone number to call.

II. ON-CALL DUTY

The Field Manager will schedule weekend and holiday on-call duty for the employees 30 days in advance.

On-call duty will begin on Friday at 4:30 pm and run through the following Friday at 4:30 pm. The employee must remain within a one hour response time to the water system; out-of-town travel during on call duty is prohibited. Compensation for on call duty will be as outlined in Policy #4310.

When an employee takes over duty from another, he or she will call the after-hours call center and report the change in personnel and contact number. The employee will also adjust the SCADA system so the auto dialer signals that employee first in the call rotation.

If any emergency arises after hours, such as a broken main, damaged fire hydrant, etc., the employee will make proper or temporary repairs to the extent of the employee's training and authorization. The employee will notify the Field Manager and/or General Manager who may call in other employee(s) as necessary to make repairs.

III. WATER COMPANY EMPLOYEES RECEIVING PAYMENT IN THE FIELD

At no time will Water Company employees accept any form of payment from a customer while on duty in the field. All payments for all services are to be received in the main office of the Water Company.

Revision History:

Former Policy #73-P2.1

Former Policy #79-P4.1

Originated: pre-1973
Revised: 1995
Revised: 11/15/2006
Revised: 07/31/2012
Revised: 2/13/2013
Revised: 11/18/15

POLICY #4520. SAFETY**I. SAFETY PROGRAM**

The General Manager shall designate a safety officer, who is responsible for the Water Company's safety program. This program includes:

- Ensuring a safe workplace
- Accident prevention
- First aid
- Personal protective equipment
- Chemical hazard communication
- Lighting
- Housekeeping
- Bathrooms and waste disposal
- Environmental tobacco smoke in the office
- Electrical safety
- Exit routes
- Alarm systems
- Accident reporting
- Confined space
- Safety shoes or boots

II. MEDICAL/PHYSICAL EXAMINATIONS

The Water Company reserves the right to require prospective and current employees to undergo a physical examination, at the expense of the Water Company, when required to verify that they can perform the duties in their job description.

III. ACCIDENTS

An accident involving property damage or personal injury, however minor, must be immediately reported to the employee's immediate supervisor by completing the Accident Report form. The General Manager shall be promptly notified of all accidents and make such reports to the Washington Department of Labor and Industries as are necessary. Failure to report accidents may result in a violation of legal requirements and may lead to difficulties in processing insurance and benefit claims. Therefore, failure to report an accident may result in disciplinary action.

If an employee is injured on the job, he or she may be entitled to benefits under the state Workers' Compensation Law. Employees should contact their immediate supervisor or the General Manager with questions about benefits available under the Workers' Compensation Law.

The Water Company will require drug and alcohol tests of all employees involved in accidents which are the cause of significant property damage or injury or which require offsite medical treatment.

IV. SMOKING

Mt. View-Edgewood Water Company has a no smoking policy for its employees. Smoking is prohibited in any company owned building and in company owned vehicles. This policy allows non-smoking employees a clean, smoke-free environment during work hours.

Revision History:

Originated: 11/15/2006

Revised: 2/13/2013

Revised: 11/18/15

POLICY #4530. USE OF COMPANY VEHICLE AND EQUIPMENT**I. EMPLOYEE USE OF COMPANY VEHICLE****A. Business Use of a Company Vehicle**

Employees may use a company vehicle for Water Company business.

The Water Company will provide the scheduled on-call employee the use of a company vehicle.

Company vehicles will be used specifically for responding to Water Company emergencies, customer calls, and other related Water Company business.

B. Personal Use of a Company Vehicle

Employee use of the vehicle for personal purposes other than commuting and other than *de minimus* personal use (such as a stop for lunch on the way between two business stops, or a stop for a personal errand on the way from a business to home) is prohibited.

The Water Company will charge the employee for authorized personal use of a company vehicle to drive to and from work while on call according to the IRS compensation rule.

C. Passengers in a Company Vehicle

Non-business-related passengers, including employee dependents, are expressly prohibited.

D. Unauthorized Personal Use of a Company Vehicle

Unauthorized personal use of company vehicles and/or equipment may result in loss of vehicle privileges, or more serious discipline, up to and including termination.

The employee may also be charged fair rental value of the vehicle for the time of the unauthorized personal use.

E. Alcohol and Drugs

In accordance with the Water Company's Drug-Free Business Program, the use of company vehicles and/or equipment while under the influence of alcohol, illegal drugs under federal law, controlled substances, drugs known to cause impairment, or prescription medications that interfere with the employee's ability to drive will result in disciplinary action up to and including immediate termination.

II. CELLULAR PHONES

The Water Company may provide cellular telephones to the field staff and General Manager for business communications from the field. A cellular phone is also provided to the office for field communications only.

If the employee's use of the company cell phone exceeds the number of allocated monthly minutes for the phone or the allotted data, the employee shall be responsible for the cost overage, unless all calls and data transfers were business-related.

Replacement costs for lost or damaged cell phones due to negligence may be billed to the responsible staff member.

III. OTHER COMPANY EQUIPMENT

All Water Company property, equipment, and services shall be used exclusively for Water Company purposes. Employees shall not use the premises, vehicles, equipment, or tools of the Water Company for personal purposes at any time. Any violation of this policy must be reported immediately to the General Manager unless the General Manager is the alleged violator of this policy, in which case the violation should be reported to the presiding officer of the Board of Directors. A found violation of this policy shall result in disciplinary action, up to and including termination.

At the discretion of the General Manager, replacement costs for lost or damaged company equipment due to negligence may be billed to the responsible employee.

Revision History:

Former Policy #92-7-P 8.2

Originated: 7/8/1992

Revised: 6/14/2000

Revised: 11/15/2006

Revised: 2/13/2013

Revised: 11/18/15

POLICY #4540. ANTI-HARASSMENT**I. COMMITMENT TO A DISCRIMINATION-FREE WORKPLACE**

The Water Company is committed to maintaining a work environment that is free from discrimination. In keeping with this commitment, the Water Company will not tolerate harassment of the Water Company's employees by anyone, including any Board member, supervisor, co-worker, client, or customer of the Water Company.

II. DEFINITIONS

Harassment consists of unwelcome conduct, whether verbal, physical, or visual, that is based upon a person's gender, color, race, religion, national origin, age, disability, or other protected status. The Water Company will not tolerate harassing conduct that:

- Affects tangible job benefits,
- Interferes unreasonably with an individual's work performance, or
- Creates an intimidating, hostile, or offensive working environment.

Sexual harassment includes sexual advances, requests for sexual favors, and other verbal, physical, or visual conduct based on sex when:

- Submission to the conduct is an explicit or implicit term or condition of employment,
- Submission to or rejection of the conduct is used as the basis for an employment decision, or
- The conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment.

Sexual harassment may include implicit sexual propositions, suggestive comments, sexual innuendo, sexually oriented "kidding," or "teasing," "practical jokes," jokes regarding gender-specific traits, foul or obscene language or gestures, display of foul or obscene printed or audio-visual material, and physical conduct such as patting, pinching, or brushing against another's body.

III. REPORTING HARASSMENT

All Board members, supervisors, managers, and employees are responsible for ensuring that harassment does not occur in their work area. If an employee experiences or witnesses harassment, the employee is to notify his or her supervisor immediately. If, for any reason, the employee is uncomfortable with notifying his or her immediate supervisor, then he or she may notify the Water Company or any Board member.

The Water Company forbids retaliation against anyone for reporting harassment, assisting in making a complaint based upon harassment, or cooperating in a harassment investigation.

IV. INVESTIGATING AND RESOLVING HARASSMENT COMPLAINTS

The policy of the Water Company is to investigate all complaints regarding harassment thoroughly and promptly. The alleged harasser shall have no direct or indirect control over the investigation. To the fullest extent practicable, the Water Company will keep confidential any complaints and the terms of their resolution.

The investigation shall include interviews of the complaining employee, the alleged harasser, and others who could reasonably be expected to have relevant information. Immediate and appropriate measures will be taken to ensure that harassment does not continue during the investigation.

If the harassment was caused by a customer or other person not employed by the Water Company, the Water Company will make reasonable efforts to investigate and remedy the situation as appropriate.

If an investigation confirms that harassment by a Board member or Water Company employee has occurred, the Water Company will take immediate and appropriate correction action to ensure that the conduct does not recur, and to correct any effects of the harassment. This corrective action may include disciplinary action up to and including termination of employment or removal of a Board member under the appropriate provisions of the Water Company's By-Laws.

Revision History:

Former Policy #93-2 P 1.1

Originated: 2/10/1993

Revised: 11/15/2006

POLICY #4550. CONFLICTS OF INTEREST
--

I. AVOIDING CONFLICT OF INTEREST

Employees and Board members should conduct their personal business affairs in a manner that will avoid any likelihood of conflict, or the appearance of a conflict, between their performance and responsibilities to the Water Company and their personal business interests.

A conflict of interest is defined as an actual or perceived interest by an employee or Board member in an action that results in, or has the appearance of resulting in, personal, organizational, or professional gain.

II. CONFLICT OF INTEREST SITUATIONS

The following are possible conflict of interest situations:

- **Personal business relationships.** Personal business relationships should not influence the decisions an employee or Board member makes for the Water Company. Employees and Board members should disclose to the General Manager or the presiding member of the Board of Directors any financial interest in the Water Company's suppliers, customers, or competitors by themselves or members of their family. Nominal ownership of common stock of a publicly owned corporation will not of itself be considered a conflict and need not be disclosed.
- **Organizational relationships.** If employees, Board members, or members of their immediate family serve as a director, officer, or consultant with any company that does business with the Water Company, these obligations should be disclosed in writing to the General Manager or the presiding member of the Board of Directors, even if no money is received for the services.
- **Outside employment.** Any additional employment or business activity must not conflict with the employee or Board member's ability to perform his or her responsibilities at the Water Company. Such employment or business activity should not utilize Water Company time or property or create a conflict of interest. Outside employment must not be accepted with competitors, suppliers, or any business that poses a conflict of interest with the Water Company.
- **Water Service Decisions.** If employees, Board members, or members of their immediate families request any actions by the Water Company involving water service, the request will be submitted directly to the General Manager (GM) for appropriate action. The GM will submit written recommendations to the board of Directors who will approve or deny all such requests, whether or not the request

involves any deviation from published Water Company policy. If a Board member initiated the request for service, he or she will be excluded from deliberations and voting on that particular request. Board action taken in response to requests submitted by employees, Board members and their families will be documented in the appropriate Board Meeting minutes.

III. GIFTS

Employees, members of the Board of Directors, and members of their immediate family should not accept money, gifts, or services that would undermine or influence good business judgment.

Revision History:

Originated: 11/15/2006

Revised: 09/28/2007

POLICY #4560. PERSONAL PROTECTION EQUIPMENT (PPE)
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I. STEEL-TOED SAFETY SHOES/BOOT

Employees will be reimbursed up to \$150 per year towards the purchase of steel-toed shoes/boots that meet the requirements of WAC 296-800-16060. A valid purchase receipt approved by the employee's supervisor must be presented prior to reimbursement and after verification of meeting WAC 296-800-16060 specifications.

Revision History:

Originated: 12/01/2011

Appendix C
Water Right Self Assessment
Water Rights

Water Right Self-Assessment Form for Water System Plan Mt. View – Edgewood Water Company

<u>Water Right Permit, Certificate, or Claim #</u> <small>*If water right is interruptible, identify limitation in yellow section below</small>	<u>WFI Source #</u> <small>If a source has multiple water rights, list each water right on separate line</small>	<u>Existing Water Rights</u> <small>Qi= Instantaneous Flow Rate Allowed (GPM or CFS) Qa= Annual Volume Allowed (Acre-Feet/Year) This includes wholesale water sold</small>				<u>Current Source Production – Most Recent Calendar Year</u> <small>Qi = Max Instantaneous Flow Rate Withdrawn (GPM or CFS) Qa = Annual Volume Withdrawn (Acre-Feet/Year) This includes wholesale water sold</small>				<u>10-Year Forecasted Source Production (determined from WSP)</u> <small>This includes wholesale water sold</small>				<u>20-Year Forecasted Source Production (determined from WSP)</u> <small>This includes wholesale water sold</small>			
		<u>Primary Qi</u> <small>Maximum Rate Allowed</small>	<u>Non-Additive Qi</u> <small>Maximum Rate Allowed</small>	<u>Primary Qa</u> <small>Maximum Volume Allowed</small>	<u>Non-Additive Qa</u> <small>Maximum Volume Allowed</small>	<u>Total Qi</u> <small>Maximum Instantaneous Flow Rate Withdrawn</small>	<u>Current Excess or (Deficiency) Qi</u>	<u>Total Qa</u> <small>Maximum Annual Volume Withdrawn</small>	<u>Current Excess or (Deficiency) Qa</u>	<u>Total Qi</u> <small>Maximum Instantaneous Flow Rate in 10 Years</small>	<u>10-Year Forecasted Excess or (Deficiency) Qi</u>	<u>Total Qa</u> <small>Maximum Annual Volume in 10 Years</small>	<u>10-Year Forecasted Excess or (Deficiency) Qa</u>	<u>Total Qi</u> <small>Maximum Instantaneous Flow Rate in 20 Years</small>	<u>20-Year Forecasted Excess or (Deficiency) Qi</u>	<u>Total Qa</u> <small>Maximum Annual Volume in 20 Years</small>	<u>20-Year Forecasted Excess or (Deficiency) Qa</u>
1. 2335 (1)	Dechaux Springs	202.5 gpm		327 ac/y			See Wells 1 R & 8		See Wells 1 R & 8				See Wells 1 R & 8				
2. 1749 (2)	S10/Well 1 R	500		345		1,000 gpm		247.30 ac/y		1,000 gpm		347 ac/y		1,100 gpm			
3. 5020 (3)	S03/Well 2	150		112									35				
4. 5043	S04/Well 3	350		560													
5. 7414 (5)	S05/Well 5	390			570 ac/y	370				370				370			
6. G2-24329 (6)	S06/Well 6	250			375	200		72.78		200		102		250			
7. G2-26097 (7)	S07/Well 7	1,200		432		240		1.73		240		2		240			
8. G2-26160 (8)	S08/Well 8	750			554	350		93.74		350		132		350			
9. G2-26657 (9)	S09/Well 9	1,000			800	500		340.02		500		477		667			
10. G2-26657 (9)(10)	S11/Well 11		1,000 gpm		800	1,000		213.82		1,000		300		1,000			
TOTALS =		4,792.5 gpm		1,776 ac/y		3,660 gpm	1,132.5 gpm	969.39 ac/y	806.61 ac/y	3,660 gpm	1,132.5 gpm	1,360 ac/y	416 ac/y	4,012 gpm	780.5 gpm	1,730 ac/y	46 ac/y

Column Identifiers for Calculations:

A B C =A-C D =B-D E = A-E F =B-F G =A-G H =B-H

PENDING WATER RIGHT APPLICATIONS: Identify any water right applications that have been submitted to Ecology.						
Application Number	New or Change Application?	Date Submitted	Quantities Requested			
			Primary Qi	Non-Additive Qi	Primary Qa	Non-Additive Qa

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.															
Name of Wholesaling System Providing Water	Quantities Allowed In Contract		Expiration Date of Contract	Currently Purchased <small>Current quantity purchased through intertie</small>				10-Year Forecasted Purchase <small>Forecasted quantity purchased through intertie</small>				20-Year Forecasted Purchase <small>Forecasted quantity purchased through intertie</small>			
	<u>Maximum Qi</u> <small>Instantaneous Flow Rate</small>	<u>Maximum Qa</u> <small>Annual Volume</small>		<u>Maximum Qi</u> <small>Instantaneous Flow Rate</small>	<u>Current Excess or (Deficiency) Qi</u>	<u>Maximum Qa</u> <small>Annual Volume</small>	<u>Current Excess or (Deficiency) Qa</u>	<u>Maximum Qi</u> <small>10-Year Forecast</small>	<u>Future Excess or (Deficiency) Qi</u>	<u>Maximum Qa</u> <small>10-Year Forecast</small>	<u>Future Excess or (Deficiency) Qa</u>	<u>Maximum Qi</u> <small>20-Year Forecast</small>	<u>Future Excess or (Deficiency) Qi</u>	<u>Maximum Qa</u> <small>20-Year Forecast</small>	<u>Future Excess or (Deficiency) Qa</u>
	1														
2															
3															
TOTALS =															

Column Identifiers for Calculations:

A B C =A-C D =B-D E =A-E F =B-F G =A-G H =B-H

INTERRUPTIBLE WATER RIGHTS: Identify limitations on any water rights listed above that are interruptible.

Water Right #	Conditions of Interruption	Time Period of Interruption
1		
2		
3		

ADDITIONAL COMMENTS:

- (1) Wells 1R and 8 are the origin point of withdrawal of Dechaux Springs and produce water under rights supplemental to Certificate #2355.
- (2) Additional 327 acre-ft supplemental.
- (3) Additional 128 acre-ft supplemental.
- (4) Wells 3 and 7 are emergency sources due to need to eliminate corrosion control treatment.
- (5) 570 acre-ft supplemental.
- (6) 375 acre-ft supplemental.
- (7) Additional 1,344 acre-ft supplemental.
- (8) 554 acre-ft supplemental.
- (9) Well 11 added as additional point of withdrawal to this permit by a showing of compliance filed in 2009.
- (10) 800 acre-ft supplemental.



200512130050 3 PGS
 12-13-2005 08:50am \$34.00
 PIERCE COUNTY, WASHINGTON

RESTRICTED LEGAL DESCRIPTION FOR LOCK ATTORNEY'S DIVISION WITHDRAWAL

Mountain View Edgewood Water Company
 11610 - 32nd Street East
 Edgewood, Washington 98372



**STATE OF WASHINGTON
 CERTIFICATE OF WATER RIGHT
 SUPERSEDING**

Document Title: Certificate of Water Right

Agency: Department of Ecology
 Southwest Regional Office
 P.O. Box 47775
 Olympia, WA 98504-7775

Applicant: MtView Edgewood Water Co
 11610 - 32nd Street East
 Edgewood, Washington 98372

Reference Number:

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
July 14, 1953	3303	3157	1749

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 WATERS TO BE APPROPRIATED

SOURCE	TRIBUTARY OF (IF SURFACE WATERS)		
Well I-R (AEC 906)			
MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE	MAX. ACRE-FEET PER YEAR	
	500	345 (additive)327 (non-additive)	

QUANTITY/TYPE OF USE/PERIOD OF USE

345 Acre-feet per year (additive) Municipal supply Year-round, as needed
 327 Acre-feet per year (non-additive)

LEGAL DESCRIPTION OF LOCATION OF DIVERSION/WITHDRAWAL

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
SW 1/4 SW 1/4	15	20	4E	10	Pierce

PARCEL # 0420153014

ADDITIONAL LEGAL IS ON PAGE 2

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
N/A	N/A	N/A	N/A	10	Pierce

PARCEL # N/A

ADDITIONAL LEGAL IS ON PAGE 2

CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

80 feet North and 80 feet East of the Southwest quarter of Section 15.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Mt. View-Edgewood Water Company. The place of use of this water right is the service area described in the March 2005 Water System Plan approved by the Washington State Department of Health. RCW 90.03.386 may have the effect of revising the place of use of this water right if the criteria in section RCW 90.03.386(2) are met.

PROVISIONS

The certificate, when issued, supersedes that of same number issued on February 3, 1951, and is subject to the following provisions.

Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year. Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.

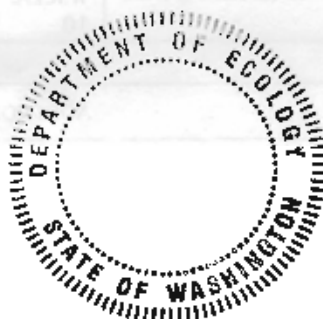
An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of diversion including units, monthly meter readings including units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), well tag number and period of use. 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 modifications to some of

(continued on page 3)

Given under my hand and the seal of this office at Olympia, Washington,
this 17th day of November, 2005.



Jay Manning, Director
Department of Ecology

By Thomas Loranger
Thomas Loranger, Section Manager

DATA OK JW

Legal Description and Provisions Continued

Provisions Continued

the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

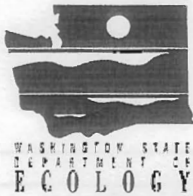
"Water System Planning and Conservation - Issuance of this approval is subject to implementation of all required conservation and planning standards. The Department of Health (DOH), Office of Drinking Water is directed by the legislature to adopt water use efficiency rules. These new rules (Chapter 246-290 WAC) are a requirement of the Municipal Water Supply – Efficiency Requirements Act, Chapter 5, Laws of 2003, First Special Session. The water right holder is specifically required to address Water Use Efficiency Planning Requirements, Distribution Leakage Standards, and Water Use Efficiency Goal Setting and Performance Reporting."

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Tribes under treaty or settlement.



200512130048 3 PGS
 12-13-2005 08:50am \$34.00
 PIERCE COUNTY, WASHINGTON

Mountain View Edgewood Water Company
 11610 - 32nd Street East
 Edgewood, Washington 98372



**STATE OF WASHINGTON
 CERTIFICATE OF WATER RIGHT
 SUPERSEDING**

Document Title: Certificate of Water Right

Agency: Department of Ecology
 Southwest Regional Office
 P.O. Box 47775
 Olympia, WA 98504-7775

Applicant: Mt View Edgewood Water Co
 11610 - 32nd Street East
 Edgewood, Washington 98372

Reference Number:

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
January 27, 1964	7003	6628	5020

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 WATERS TO BE APPROPRIATED

SOURCE		TRIBUTARY OF (IF SURFACE WATERS)	
Well 2 (ACN 751)			
MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE	MAX. ACRE-FEET PER YEAR	
	150	128	

QUANTITY/TYPE OF USE/PERIOD OF USE

128 Acre-feet per year Municipal supply Year-round, as needed

LEGAL DESCRIPTION OF LOCATION OF DIVERSION/WITHDRAWAL

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
SW 1/4 NW 1/4	3	20	4E	10	Pierce

PARCEL # 0420032022

ADDITIONAL LEGAL IS ON PAGE 2

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
N/A	N/A	N/A	N/A	10	Pierce

PARCEL # N/A

ADDITIONAL LEGAL IS ON PAGE 2

CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

850 feet East and 620 feet North of the West quarter corner of Section 3.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Mt. View-Edgewood Water Company. The place of use of this water right is the service area described in the March 2005 Water System Plan approved by the Washington State Department of Health. RCW 90.03.386 may have the effect of revising the place of use of this water right if the criteria in section RCW 90.03.386(2) are met.

PROVISIONS

The certificate, when issued, supersedes that of same number issued on January 1, 1965, and is subject to the following provisions.

Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year. Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.

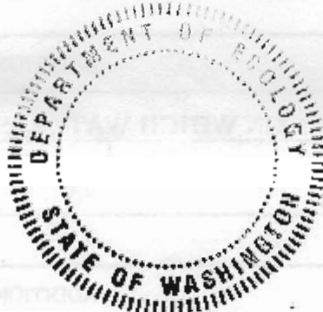
An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of diversion including units, monthly meter readings including units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), well tag number and period of use. 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

(continued on page 3)

Given under my hand and the seal of this office at Olympia, Washington,
this 17th day of November, 2005.



Jay Manning, Director
Department of Ecology

By Thomas Loranger
Thomas Loranger, Section Manager

DATA OK JW

Legal Description and Provisions Continued

Provisions Continued

information reporting. It also allows a water user to petition Ecology for modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

"Water System Planning and Conservation - Issuance of this approval is subject to implementation of all required conservation and planning standards. The Department of Health (DOH), Office of Drinking Water is directed by the legislature to adopt water use efficiency rules. These new rules (Chapter 246-290 WAC) are a requirement of the Municipal Water Supply - Efficiency Requirements Act, Chapter 5, Laws of 2003, First Special Session. The water right holder is specifically required to address Water Use Efficiency Planning Requirements, Distribution Leakage Standards, and Water Use Efficiency Goal Setting and Performance Reporting."

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Tribes under treaty or settlement.

200512130049 3 PGS
 12-13-2005 08:50am \$34.00
 PIERCE COUNTY, WASHINGTON

Mountain View Edgewood Water Company
 11610 - 32nd Street East
 Edgewood, Washington 98372



**STATE OF WASHINGTON
 CERTIFICATE OF WATER RIGHT
 SUPERSEDING**

Document Title: Certificate of Water Right

Agency: Department of Ecology
 Southwest Regional Office
 P.O. Box 47775
 Olympia, WA 98504-7775

Applicant: Mt View Edgewood Water Co
 11610 - 32nd Street East
 Edgewood, Washington 98372

Reference Number:

PRIORITY DATE August 31, 1962	APPLICATION NUMBER 6454	PERMIT NUMBER 6085	CERTIFICATE NUMBER 5043
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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 WATERS TO BE APPROPRIATED

SOURCE Well 3 (ACV 516)	TRIBUTARY OF (IF SURFACE WATERS)		
MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE	MAX. ACRE-Feet PER YEAR	
	350	560	

QUANTITY/TYPE OF USE/PERIOD OF USE

560 Acre-feet per year Municipal supply Year-round, as needed

LEGAL DESCRIPTION OF LOCATION OF DIVERSION/WITHDRAWAL

1/4 1/4 SW 1/4 SW 1/4	SECTION 10	TOWNSHIP N. 20	RANGE (E. OR W.) W.M. 4E	W.R.I.A. 10	COUNTY Pierce
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PARCEL # 3625000371

ADDITIONAL LEGAL IS ON PAGE 2

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

1/4 1/4 N/A	SECTION N/A	TOWNSHIP N. N/A	RANGE (E. OR W.) W.M. N/A	W.R.I.A. 10	COUNTY Pierce
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PARCEL # N/A

ADDITIONAL LEGAL IS ON PAGE 2

1181.42 feet North and 351 feet East of the Southwest corner of Section 10.

CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

1181.42 feet North and 351 feet East of the Southwest corner of Section 10.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Mt. View-Edgewood Water Company. The place of use of this water right is the service area described in the March 2005 Water System Plan approved by the Washington State Department of Health. RCW 90.03.386 may have the effect of revising the place of use of this water right if the criteria in section RCW 90.03.386(2) are met.

PROVISIONS

The certificate, when issued, supersedes that of same number issued on January 29, 1965, and is subject to the following provisions.

Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year. Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.

An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of diversion including units, monthly meter readings including units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), well tag number and period of use. 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 modifications to some of the

(continued on page 3)

Given under my hand and the seal of this office at Olympia, Washington,
this 17th day of November, 2005.



Jay Manning, Director
Department of Ecology

By Thomas Loranger
Thomas Loranger, Section Manager

DATA OK SW

Legal Description and Provisions Continued

Provisions Continued

requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

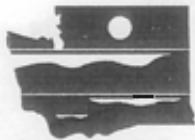
"Water System Planning and Conservation - Issuance of this approval is subject to implementation of all required conservation and planning standards. The Department of Health (DOH), Office of Drinking Water is directed by the legislature to adopt water use efficiency rules. These new rules (Chapter 246-290 WAC) are a requirement of the Municipal Water Supply – Efficiency Requirements Act, Chapter 5, Laws of 2003, First Special Session. The water right holder is specifically required to address Water Use Efficiency Planning Requirements, Distribution Leakage Standards, and Water Use Efficiency Goal Setting and Performance Reporting."

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Tribes under treaty or settlement.



200512130045 3 PGS
 12-13-2005 08:50am \$34.00
 PIERCE COUNTY, WASHINGTON

Mountain View Edgewood Water Company
 11610 - 32nd Street East
 Edgewood, Washington 98372



STATE OF WASHINGTON
CERTIFICATE OF WATER RIGHT
 SUPERSEDING

Document Title: Certificate of Water Right

Agency: Department of Ecology
 Southwest Regional Office
 P.O. Box 47775
 Olympia, WA 98504-7775

Applicant: Mt View Edgewood Water Co
 11610 - 32nd Street East
 Edgewood, Washington 98372

Reference Number:

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
February 24, 1969	10034	7414	7414

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 WATERS TO BE APPROPRIATED

SOURCE	TRIBUTARY OF (IF SURFACE WATERS)	
Well 5 (ACN 735)		
MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE	MAX. ACRE-FEET PER YEAR
	390	570 (non-additive)

QUANTITY/TYPE OF USE/PERIOD OF USE

570 Acre-feet per year (non-additive) Municipal supply Year-round, as needed

LEGAL DESCRIPTION OF LOCATION OF DIVERSION/WITHDRAWAL

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
SW 1/4 NE 1/4	16	20	4E	10	Pierce

PARCEL # 04-20-16-1-088

ADDITIONAL LEGAL IS ON PAGE 2

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
N/A	N/A	N/A	N/A	10	Pierce

PARCEL # N/A

ADDITIONAL LEGAL IS ON PAGE 2

CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

430 feet North and 100 feet East of the center of Section 16.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Mt. View-Edgewood Water Company. The place of use of this water right is the service area described in the March 2005 Water System Plan approved by the Washington State Department of Health. RCW 90.03.386 may have the effect of revising the place of use of this water right if the criteria in section RCW 90.03.386(2) are met.

PROVISIONS

This certificate supersedes that of same number issued on October 15, 1971, and is subject to the following provisions.

Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year. Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.

An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of diversion including units, monthly meter readings including units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), well tag number and period of use. 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 modifications to some of the

(continued on page 3)

Given under my hand and the seal of this office at Olympia, Washington,
this 17th day of November, 2005.



Jay Manning, Director
Department of Ecology

By Thomas Loranger
Thomas Loranger, Section Manager

DATA OK W

Legal Description and Provisions Continued

Provisions Continued

requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

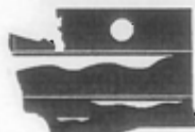
"Water System Planning and Conservation - Issuance of this approval is subject to implementation of all required conservation and planning standards. The Department of Health (DOH), Office of Drinking Water is directed by the legislature to adopt water use efficiency rules. These new rules (Chapter 246-290 WAC) are a requirement of the Municipal Water Supply - Efficiency Requirements Act, Chapter 5, Laws of 2003, First Special Session. The water right holder is specifically required to address Water Use Efficiency Planning Requirements, Distribution Leakage Standards, and Water Use Efficiency Goal Setting and Performance Reporting."

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Tribes under treaty or settlement.



200512130046 3 PGS
 12-13-2005 08:50am \$34.00
 PIERCE COUNTY, WASHINGTON

Mt. View Edgewood Water Company
 11610 - 32nd Street East
 Edgewood, Washington 98372



**STATE OF WASHINGTON
 CERTIFICATE OF WATER RIGHT
 SUPERSEDING**

WASHINGTON STATE
 DEPARTMENT OF
 ECOLOGY

Document Title: Certificate of Water Right

Agency: Department of Ecology
 Southwest Regional Office
 P.O. Box 47775
 Olympia, WA 98504-7775

Applicant: Mt. View Edgewood Water Co
 11610 - 32nd Street East
 Edgewood, Washington 98372

Reference Number:

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
October 19, 1976	G2-24329	G2-24329	G2-24329

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.

PUBLIC WATERS TO BE APPROPRIATED

SOURCE	TRIBUTARY OF (IF SURFACE WATERS)		
Well 6 (AEA 472)			
MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE	MAX. ACRE-FEET PER YEAR	
	250	375	

QUANTITY/TYPE OF USE/PERIOD OF USE

375 Acre-feet per year Municipal supply Year-round, as needed

LEGAL DESCRIPTION OF LOCATION OF DIVERSION/WITHDRAWAL

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
NW 1/4 SW 1/4	10	20	4E	10	Pierce

PARCEL # 04-20-10-3-151

ADDITIONAL LEGAL IS ON PAGE 2

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
N/A	N/A	N/A	N/A	10	Pierce

PARCEL # N/A

ADDITIONAL LEGAL IS ON PAGE 2

CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

1050 feet East and 400 feet South from the West quarter corner of Section 10.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Mt. View-Edgewood Water Company. 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 March 2005. RCW 90.03.386 may have the effect of revising the place of use of this water right if the criteria in section RCW 90.03.386(2) are met.

PROVISIONS

This certificate supersedes that of same number issued on September 10, 1978, and is subject to the following provisions.

Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year. Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.

An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of diversion including units, monthly meter readings including units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), well tag number and period of use. 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.

(continued on page 3)

Given under my hand and the seal of this office at Olympia, Washington,
this 17th day of November, 2005.



Jay Manning, Director
Department of Ecology

By Thomas Loranger
Thomas Loranger, Section Manager

DATA OK JW

Legal Description and Provisions Continued

Provisions Continued

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 modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

"Water System Planning and Conservation - Issuance of this approval is subject to implementation of all required conservation and planning standards. The Department of Health (DOH), Office of Drinking Water is directed by the legislature to adopt water use efficiency rules. These new rules (Chapter 246-290 WAC) are a requirement of the Municipal Water Supply – Efficiency Requirements Act, Chapter 5, Laws of 2003, First Special Session. The water right holder is specifically required to address Water Use Efficiency Planning Requirements, Distribution Leakage Standards, and Water Use Efficiency Goal Setting and Performance Reporting."

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Tribes under treaty or settlement.



200512130047 3 PGS
 12-13-2005 08:50am \$34.00
 PIERCE COUNTY, WASHINGTON

Mountain View Edgewood Water Company
 11610 - 32nd Street East
 Edgewood, Washington 98372



**STATE OF WASHINGTON
 CERTIFICATE OF WATER RIGHT**

SUPERSEDING

Document Title: Certificate of Water Right

Agency: Department of Ecology
 Southwest Regional Office
 P.O. Box 47775
 Olympia, WA 98504-7775

Applicant: Mt View Edgewood Water Co
 11610 - 32nd Street East
 Edgewood, Washington 98372

Reference Number:

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
February 26, 1982	G2-26097	G2-26097	G2-26097

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 WATERS TO BE APPROPRIATED

SOURCE	TRIBUTARY OF (IF SURFACE WATERS)	
Wells 7 and 9		
MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE	MAX. ACRE-FEET PER YEAR
	1200	1776*

QUANTITY/TYPE OF USE/PERIOD OF USE

432 Acre-feet per year additive Municipal supply Year-round, as needed

1344 Acre-feet per year non-additive

*right is partially additive

LEGAL DESCRIPTION OF LOCATION OF DIVERSION/WITHDRAWAL

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
Well 7: SW¼ SW¼ (Sec. 10) Well 9: NE¼ NW¼ (Sec. 16)	10 and 16	20	4E	10	Pierce

PARCEL # 0420153014 and 0420161088

ADDITIONAL LEGAL IS ON PAGE 2

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

1/4 1/4	SECTION	TOWNSHIP N.	RANGE (E. OR W.) W.M.	W.R.I.A.	COUNTY
N/A	N/A	N/A	N/A	10	Pierce

PARCEL # N/A

ADDITIONAL LEGAL IS ON PAGE 2

CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

Well 7: 1200 feet North and 325 feet East of the Southwest corner of Section 10. Well 9: 1100 feet North and 1100 feet West of the center of Section 16.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Mt. View-Edgewood Water Company. The place of use of this water right is the service area described in the March 2005 Water System Plan approved by the Washington State Department of Health. RCW 90.03.386 may have the effect of revising the place of use of this water right if the criteria in section RCW 90.03.386(2) are met.

PROVISIONS

The certificate, when issued, supersedes that of same number issued on December 30, 1982, and is subject to the following provisions.

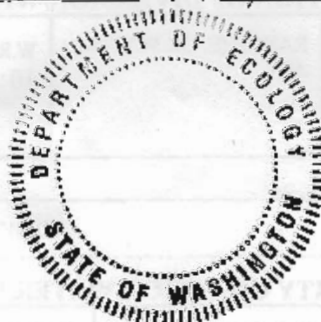
Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year. Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.

An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of diversion including units, monthly meter readings including units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), well tag number and period of use. In the future, Ecology may require additional parameters to be reported or more frequent reporting. Ecology prefers web

(continued on page 3)

Given under my hand and the seal of this office at Olympia, Washington, this 17th day of November, 2005.



Jay Manning, Director
Department of Ecology

By Thomas Loranger
Thomas Loranger, Section Manager

DATA OK SW

Legal Description and Provisions Continued

Provisions Continued

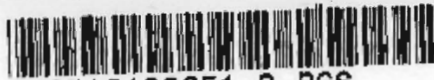
based data entry, but does accept hard copies. Ecology will provide forms and electronic data entry information.

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 modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

"Water System Planning and Conservation - Issuance of this approval is subject to implementation of all required conservation and planning standards. The Department of Health (DOH), Office of Drinking Water is directed by the legislature to adopt water use efficiency rules. These new rules (Chapter 246-290 WAC) are a requirement of the Municipal Water Supply – Efficiency Requirements Act, Chapter 5, Laws of 2003, First Special Session. The water right holder is specifically required to address Water Use Efficiency Planning Requirements, Distribution Leakage Standards, and Water Use Efficiency Goal Setting and Performance Reporting."

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Tribes under treaty or settlement.



200512130051 3 PGS
 12-13-2005 08:50am \$34.00
 PIERCE COUNTY, WASHINGTON

Mountain View Edgewood Water Company
 11610 - 32nd Street East
 Edgewood, Washington 98372



**STATE OF WASHINGTON
 CERTIFICATE OF WATER RIGHT**

SUPERSEDING

Document Title: Certificate of Water Right

Agency: Department of Ecology
 Southwest Regional Office
 P.O. Box 47775
 Olympia, WA 98504-7775

Applicant: Mt View Edgewood Water Co
 11610 - 32nd Street East
 Edgewood, Washington 98372

Reference Number:

PRIORITY DATE June 2, 1982	APPLICATION NUMBER G2-26160	PERMIT NUMBER G2-26160	CERTIFICATE NUMBER G2-26160
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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 WATERS TO BE APPROPRIATED

SOURCE Wells 8 and i-R		TRIBUTARY OF (IF SURFACE WATERS)	
MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE 750	MAX. ACRE-FEET PER YEAR 554 (non-additive)	

QUANTITY/TYPE OF USE/PERIOD OF USE

554 Acre-feet per year (non-additive) Municipal supply Year-round, as needed

LEGAL DESCRIPTION OF LOCATION OF DIVERSION/WITHDRAWAL

1/4 1/4 SW 1/4 SW 1/4	SECTION 15	TOWNSHIP N. 20	RANGE (E. OR W.) W.M. 4E	W.R.I.A. 10	COUNTY Pierce
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PARCEL # 04-20-15-3-014

ADDITIONAL LEGAL IS ON PAGE 2

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

1/4 1/4 N/A	SECTION N/A	TOWNSHIP N. N/A	RANGE (E. OR W.) W.M. N/A	W.R.I.A. 10	COUNTY Pierce
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PARCEL # N/A

ADDITIONAL LEGAL IS ON PAGE 2

PLATON COUNTY, WASHINGTON
12-13-2005 08:50am 234 00
80812180051 3 P03

CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

Boti Wells - 80 feet North and 80 feet East of the Southwest corner of Section 15.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

Area served by the Mt. View-Edgewood Water Company. The place of use of this water right is the service area described in the March 2005 Water System Plan approved by the Washington State Department of Health. RCW 90.03.386 may have the effect of revising the place of use of this water right if the criteria in section RCW 90.03.386(2) are met.

PROVISIONS

This certificate supersedes that of same number issued on December 30, 1982, and is subject to the following provisions.

"Withdrawals from Production Wells 1-R and 8 under certificates G2-26160 and 1749-A amount to 1,250 gpm, and 1,226 acre-feet per year"

Water use data shall be recorded daily. The maximum monthly rate of diversion/withdrawal and the monthly total volume shall be submitted to Ecology by January 31st of each calendar year. Ecology is requiring submittal of daily meter readings to collect seasonal information for water resource planning, management and compliance.

An approved measuring device shall be installed and maintained for each of the sources identified by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC.

The following information shall be included with each submittal of water use data: owner, contact name if different, mailing address, daytime phone number, WRIA, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of diversion including units, monthly meter readings including units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), well tag number and period of use. 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.

(continued on page)

Given under my hand and the seal of this office at Olympia, Washington,
this 17th day of November, 2005.



Jay Manning, Director
Department of Ecology

By Thomas Loranger
Thomas Loranger, Section Manager

DATA OK JW

Legal Description and Provisions Continued

Provisions Continued

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 modifications to some of the requirements. Installation, operation and maintenance requirements are enclosed as a document entitled "Water Measurement Device Installation and Operation Requirements".

Department of Ecology personnel, upon presentation of proper credentials, shall have access at reasonable times, to the records of water use that are kept to meet the above conditions, and to inspect at reasonable times any measuring device used to meet the above conditions.

"Water System Planning and Conservation - Issuance of this approval is subject to implementation of all required conservation and planning standards. The Department of Health (DOH), Office of Drinking Water is directed by the legislature to adopt water use efficiency rules. These new rules (Chapter 246-290 WAC) are a requirement of the Municipal Water Supply – Efficiency Requirements Act, Chapter 5, Laws of 2003, First Special Session. The water right holder is specifically required to address Water Use Efficiency Planning Requirements, Distribution Leakage Standards, and Water Use Efficiency Goal Setting and Performance Reporting."

This authorization to make use of public waters of the state is subject to existing rights, including any existing rights held by the United States for the benefit of Tribes under treaty or settlement.

Appendix D

Service Area Agreements

**STANDARD SERVICE AGREEMENT
ESTABLISHING WATER UTILITY
SERVICE AREA BOUNDARIES**

PREAMBLE

THIS AGREEMENT establishing water utility service area boundaries is entered into this day for purposes of identifying the external boundaries of the service area for which this water purveyor has assumed water service responsibility.

WHEREAS, service area agreements are required by WAC 246-293-250 to help assure that water reserved for public water supply purposes within Pierce County will be utilized in the future in an efficient and planned manner; and

WHEREAS, the designation of retail water service area and future service planning areas, together with the cooperation of other utilities, will help assure efficient planning to accommodate growth, avoid duplication of service, and facilitate the best use of resources; and

WHEREAS, The responsibilities applicable to water purveyors are outlined in the Pierce County Coordinated Water System Plan (CWSP) and by the adopted rules and regulations of the Washington State Department of Health (DOH); and

WHEREAS, It is not the intent of this Agreement to give new authority or responsibilities to the water purveyor or to the County or State regulatory agencies, in addition to those requirements imposed by law; and

NOW, THEREFORE, the undersigned party, having entered into this Agreement by its signature, concurs with and will abide by the following provisions:

Section 1. The terms used within the contract shall be as defined in the implementing regulations of Chapter 70.116 RCW, except as identified below.

- A. Lead Agency shall mean the department or organization within Pierce County that has been designated by the Pierce County Executive as being administratively responsible for the coordination and filing of the Pierce County Water Service Area map, Standard Service Agreement Establishing Water Utility Service Area Boundaries, Agreements for Retail Service Areas, Utility Service Policies, and other administrative documents necessary for the implementation of the Pierce County CWSP.
- B. Pierce County Coordinated Water System Plan (CWSP) shall mean the plan adopted by the Pierce County Council for public water systems within critical water supply service areas within Pierce County which identifies the present and future needs of the systems and sets forth means for meeting those needs in the most efficient manner possible.
- C. Pierce County Water Service Area Map shall mean the map referenced in this Agreement for the retail service area signed by the water purveyor, except as amended in accordance with the CWSP procedures and with the concurrence of the affected water purveyors.

- D. Retail Service Area shall mean the designated geographical area within Pierce County in which the undersigned water purveyor assumes full responsibility for providing water service to individual customers.
- E. Utility Service Policies shall mean those policies and conditions of service that are attached to the provision of water service for individual customers. The identified policies and conditions of service are those conditions incorporated within the water purveyor's water system improvement and expansion plans required under the provisions of the Public Water Systems Coordination Act and DOH.

Section 2. Lead Agency. The lead agency for administering the Pierce County Water Utility service area agreements shall be the Pierce County Department of Public Works and Utilities unless otherwise established by the Pierce County Executive. The lead agency shall function only as a coordination center. The lead agency will maintain the original documents and will be responsible for updating the water system map and agreements as provided for in the CWSP.

Section 3. Authority. The authority for this Agreement is granted by the Public Water Systems Coordination Act of 1977, Chapter 70.116 RCW.

Section 4. Service Area Boundaries. The undersigned Water Purveyor acknowledges that the Pierce County Water Service Area Maps identifying its retail service area boundaries, dated 5.24.2011 and included as Attachment A to this Agreement, identify the Water purveyor's present and future service area. The undersigned further acknowledges that there are no service area conflicts with an adjacent water utility or purveyor, or, if such a conflict exists, agrees that no new water service will be extended within disputed areas except as stipulated in an adjudication by DOH.

This agreement shall apply to service areas existing as of August, 1994, and to the service area boundaries identified in the above referenced maps, or as shown on current revisions thereof, provided that no revisions of service areas shown on these maps shall be made without prior written concurrence of the water utilities/purveyors involved and such written concurrence is filed with the Lead Agency. Revisions may also require an amendment to the purveyor's or utility's service plans.

Section 5. Boundary Adjustments. If, at some time in the future it is in the best interest of the undersigned parties to make service area boundary adjustments, such modifications must be by written concurrence of all involved utilities and the proper legislative authority(ies), and must be noted and filed with the designated Pierce County lead agency and DOH. It is understood by the undersigned utility that it may decline to provide service within its designated service area boundary, but in that case, an applicant may be referred to other adjacent purveyors or utilities or a new utility may be created and the original service area boundary will be adjusted accordingly.

Section 6. System Extension Policies. The undersigned utility agrees that in order to expand its existing water service area, (other than by addition of retail customers to existing water mains), or to serve in the capacity of a pre-qualified satellite system management agency (SSMA), it shall have adopted design standards and Utility Service extension policies. The

design standards shall meet or exceed the Pierce County Water System Minimum Standards and Specifications.

A water utility anticipating expansion of retail service in unincorporated areas of Pierce County, or intending to operate as an SSMA, shall identify utility service policies in its updated water system plan. The undersigned utility agrees to identify, for information, its utility service policies or provide a copy of the updated water system plan to the Lead Agency prior to application for extension of its existing water system into new service areas within the unincorporated areas of Pierce County.

Municipalities further agree that if they identify a service area outside of their existing municipal corporate boundaries, the municipality will assume full responsibility for providing water service equivalent to the level of service provided for their customers inside the city limits with similar service requirements, and must also meet or exceed Pierce County's minimum design standards.

Section 7. Special Working Agreements. Special working agreements, if they exist and are relevant, between this water purveyor and any adjacent water purveyor shall be attached to this Agreement as Attachment B and incorporated herein by this reference.

Section 8. Compliance with the CWSP. Nothing in this Agreement shall waive any requirement of the state, federal or local government regarding the provision of water service. This Agreement shall comply with the interlocal agreement requirement of the CWSP.

IN WITNESS WHEREOF, the undersigned party has executed this Agreement as of

May 10, 2011
Date

Mt. View - Edgewood Water Co.
Water Purveyor

Marc Marcantonio
Representative

General Manager
Title

Receipt Acknowledged:

Kathleen Brooke
Pierce County Public Works and Utilities Department

7-29-11
Date

**STANDARD SERVICE AGREEMENT
ATTACHMENT B**

Utility shall include copies of separate agreements, relating to common service areas, transfer arrangements, special working agreements, and/or retail service agreements with adjacent utilities. These agreements will be included by reference in this Interlocal Agreement.

This agreement made and entered into this 12 day of March 1991, by and between the City of Fife, Washington, a municipal corporation for and in behalf of its Water Utility and the Mountain View-Edgewood Water Company, witnesseth, that;

WHEREAS, the City of Fife and the Mountain View-Edgewood Water Company, are both in the business of providing water service to customers within their respective service areas or/as authorized by the Pierce County Coordinate Water System Plan, and:

The authority for this Agreement is granted by the Public Water System Coordination Act of 1977, Chapter 70.116 RCW.

WHEREAS, Such an Agreement is required in WAC 248-56-730, Service Area Agreements-Requirement, of the Public Water System Coordination Act; and,

WHEREAS, Designation of retail water service area, together with the cooperation of utilities, will help assure that time, effort, and money are best used by avoiding unnecessary duplication of service; and,

WHEREAS, Definite future service areas will facilitate efficient planning for, and provision of, water system improvements within Pierce County as growth occurs; and,

WHEREAS, Definite retail and wholesale utility planning areas will help assure that water reserved for public water supply purposes within Pierce County will be utilized in the future in an efficiently planned manner,

NOW THEREFORE, in consideration of the mutual benefits to be derived,

The undersigned utilities acknowledge that the maps identifying their service area boundaries, dated December 4, 1990, and included as Attachment A to this Agreement, identify the water system's future service area.

It is understood that utilities may initially continue existing water service within the boundaries of neighboring utilities, service area boundary hereof. Such common service areas, if they exist, are described in Attachment B to this Agreement. The undersigned parties agree that any water line for retail service extending outside of the retail service area boundary, shall ultimately be phased out and service transferred to the designated adjacent utility on an economic basis or by mutual agreement. The terms of the transfer of a common service area shall be established in a separate agreement.

If, at some time in the future it is in the best interest of the undersigned parties to make service area boundary adjustments, such modifications must be by written concurrence of all involved utilities and the proper legislative authority(ies), and must be noted and filed with the designated Pierce County lead agency and the Washington State Department of Health.

IT IS FURTHER AGREED that both the City of Fife and the Mountain View-Edgewood Water Company have or will have, water system facilities near or adjacent to the above described boundary. The facilities, if compatible, may be interconnected so as to be mutually beneficial to both parties of this Agreement. The City of Fife agrees that after the completion of such interconnection, if the Mountain View-Edgewood Water Company needs additional water in the Mountain View-Edgewood Water Company service area that can be supplied by the Fife system, the City of Fife will make water available to the Mountain View-Edgewood Water Company. The Mountain View-Edgewood Water Company agrees that after the completion of such interconnection, if the City of Fife needs additional water in the Fife service area that can be supplied by the Mountain View-Edgewood Water Company system, the Mountain View-Edgewood Water Company will make water available to the City of Fife.

IT IS FURTHER AGREED that if either the Mountain View-Edgewood Water Company or the City of Fife requests water from the other Water Purveyor, water will be made available only to the extent that water is available and at rates to be established at the time of connection. It is understood that only excess water from either system will be available to the other Water Purveyor and only for emergency conditions. Neither the City of Fife, nor the Mountain View-Edgewood Water Company will be liable to the other for the failure to supply water pursuant to this agreement at any point in time.

IT IS FURTHER AGREED that each party in this agreement shall prepare, at its own cost, or by the costs established in a separate agreement, the facilities necessary to provide the interconnection, but the interconnection shall not be made operative until each party agrees to the final operating procedures. This agreement shall remain in full force and effect until terminated by either party upon not less than one year advance written notice to the other party.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date and year first herein stated.

MOUNTAIN VIEW-EDGEWOOD WATER CO.

by James P. Wiles
Title President

Attest:
Edward L. Bertha
Title Vice President

Approved:
Bevuly # Shoddy
Title Secretary

Approved:
Robert S. Taylor
Manager

CITY OF FIFE

by Art Buckley
Mayor

Shirley [unclear] 3/13/91
City Clerk

[Signature]
Director - Public Works -
Community Development

Approved as to form & legality
[Signature]
City Attorney

City of Fife



www.cityoffife.org

FAX COVER SHEET

Mayor
Mike Kelley SR

Council
Richard Goodwin
Barry Johnson
Kory Edwards
Rob Cerqui
Mardene Patton
Kim Roscoe

William Malinen
City Manager

Loren Cornitt
City Attorney

Steve Worthington
Community Development
Director

Michael Lafreniere
Parks, Recreation & Community
Services Director

Marilyn Campbell
Clerk/Treasurer & Finance
Director

Robert DeGroot
Police Chief

Russ Blount P.E.
Public Works Director & City
Engineer

Public Work Department
3725 Pacific Hwy E
Fife, WA 98424-1135
(253) 922-9315
Fax:(253) 922-9688

Criminal Justice Center
3737 Pacific Hwy. E.
Fife, WA 98424-1135
(253) 922-6633

Fife Community Center
2111-54th Ave. E.
Fife, WA 98424-2061
(253) 922-0900

Fife Swim Center
5410-20th St. E.
Fife, WA 98424-2061
(253) 922-7665

Fife City Hall
541 (23rd St. E.
Fife, WA. 98424-2061
(253) 922-2489
Fax:253) 922-5255

PUBLIC WORKS DEPARTMENT
3725 Pacific Highway East
Fife WA 98424
Ph 253.922.9315 Fax 253.922.9688

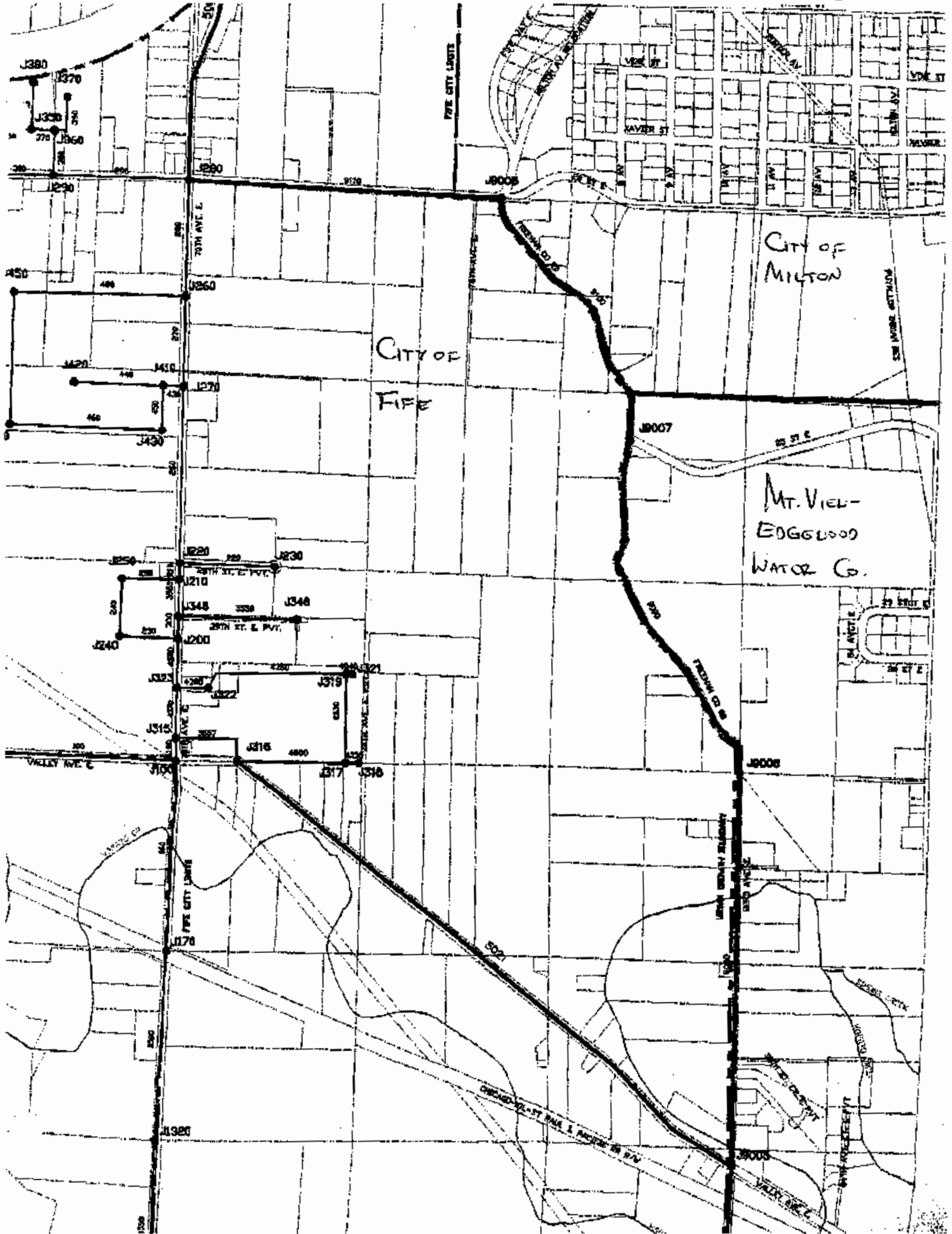
This is a transmission of 2 pages, including transmittal sheet

Date: 2-15-05

To: Mike

From: Art Gregg

Subject: Water Service Area Boundary
Along Freeman Rd. And 82nd Ave. E.



SERVICE AREA AGREEMENT

(Supplemental to the Pierce County Coordinated Water System Plan boundary agreement)

This agreement, dated January 6, 2010, is made by and between the City of Milton, Department of Public Utilities, Water Division (dba Milton Water) a municipal corporation located in Pierce and King County (hereafter "Milton") and Mt. View-Edgewood Water Company, a municipal corporation in Pierce County, (hereafter "MTVE"), or collectively referred to as "the parties".

Milton is engaged in the business of providing water service to the public located in Pierce County and certain areas of King County in the State of Washington. MTVE is engaged in the business of providing water service to the public located in Pierce County in the State of Washington.


The parties desire to enter into a formal service area agreement to so establish a boundary between their contiguous service areas in Pierce County in order to avoid any duplication or overlap of water service and to provide the most efficient service to their respective customers.

Milton and MTVE therefore agree as follows:

1. This agreement is entered pursuant to the Pierce County Coordinated Water System Plan and the City of Milton's Comprehensive Water System Plan update.
2. The contiguous water service boundary between MTVE and Milton is agreed upon by both parties as shown on the attached map(s) dated December 21, 2009, which by this reference is incorporated herein.
3. MTVE and Milton may by mutual written amendment(s) to this Agreement make such adjustments to the service boundary as they may mutually agree upon from time to time so that water service to new service locations in close proximity to the service boundary may be provided in an efficient, effective and economical manner. Any such adjustments shall be documented by modifying the attached map which when so modified and agreed to by the parties shall constitute amendments to this Agreement. Minor adjustments consisting of ten acres or less may be authorized by the Manager or Superintendent of each party.
4. It is understood that the parties may continue to serve existing water service customers who are located within the boundaries of the other party's service area. However, a customer may be transferred to the other party's system upon mutual written agreement between the parties setting out the specific terms of such transfer.

IN WITNESS WHEREOF, the following parties have duly executed this agreement on the date written above:

City of Milton
Department of Public Utilities
Water Division

By: 
Title: PUBLIC WORKS DIRECTOR

Mt. View-Edgewood Water Company

By: 
Title: General Manager

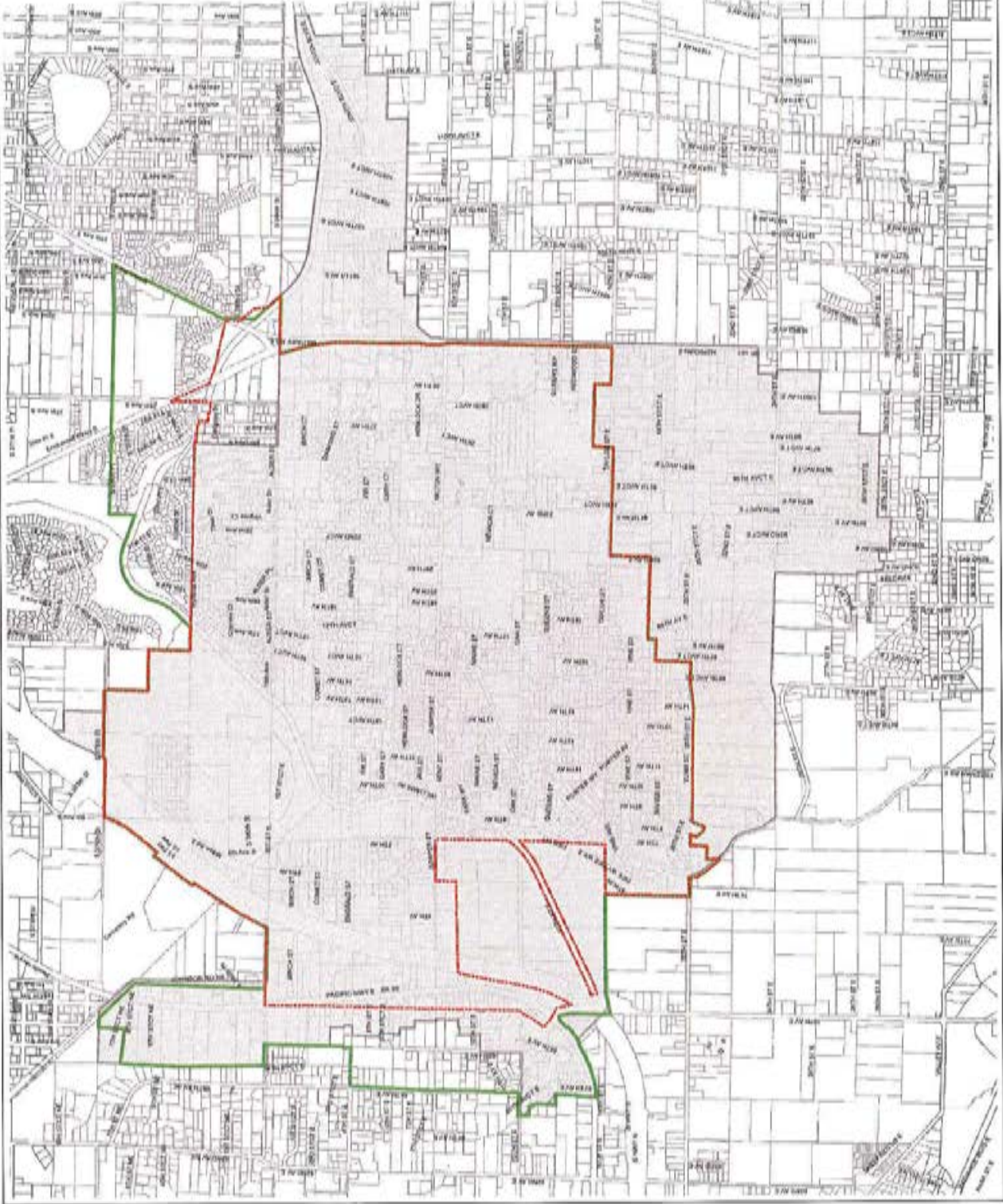


- LEGEND:**
- ▬ MILTON CITY LIMITS
 - ▬ URBAN GROWTH AREA
 - ▬ RETAIL SERVICE AREA
 - PARCELS

CITY OF MILTON
 WATER SYSTEM PLAN
 CITY LIMITS, RETAIL SERVICE AREA
 AND URBAN GROWTH AREA
 FIGURE 1-2



Gray & Osborne, Inc.
 CONSULTING ENGINEERS



DATE: 08/15/2011 10:28:52 AM

Water Service Area Boundary Agreement; Attachment to Boundary Map
Mt. View-Edgewood Water Company
Town of Milton

July 13, 1988

It is hereby acknowledged by the Town of Milton, that The Mt. View-Edgewood Water Company has the following service connections within the service area boundry of the Town of Milton, with the full knowledge and consent of the Town of Milton.

1. Windmill Tavern
2324 Meridian East
Puyallup, Wa. 98371
2. Edgewood Grange
1806 Meridian East
Puyallup, Wa. 98371
3. Edgewood Community Church
1720 Meridian East
Puyallup, Wa. 98371
4. Pierce County Fire District #8
10105 24th St East
Puyallup, Wa. 98371
5. Timberland Federal Savings and Loan
2418 Meridian East
Puyallup, Wa. 98371


Dale Jones
Director of Public Works
Town of Milton

**CITY OF SUMNER AND MOUNTAIN VIEW – EDGEWOOD WATER COMPANY
WATER SERVICE AREA AGREEMENT**

This agreement made and entered into this 5TH day of MARCH, 2009, by and between the City of Sumner, Washington, a municipal corporation for and in behalf of its Water Utility and the Mountain View-Edgewood Water Company, witnesseth, that;

WHEREAS, the City of Sumner and the Mountain View-Edgewood Water Company are both in the business of providing water service to customers within their respective service areas or/as authorized by the Pierce County Coordinate Water System Plan, and:

The authority for this Agreement is granted by the Public Water System Coordination Act of 1977, Chapter 70.116 RCW.

WHEREAS, such an Agreement is required in WAC 246-293-250, Service Area Agreements-Requirement, of the Public Water System Coordination Act; and,

WHEREAS, designation of retail water service area, together with the cooperation of utilities, will help assure that time, effort, and money are best used by avoiding unnecessary duplication of service; and,

WHEREAS, definite future service areas will facilitate efficient planning for, and provision of, water system improvements within Pierce County as growth occurs; and,

WHEREAS, definite retail and wholesale utility planning areas will help assure that water reserved for public water supply purposes within Pierce County will be utilized in the future in an efficiently planned manner,

NOW THEREFORE, in consideration of the mutual benefits to be derived,

The undersigned utilities acknowledge that the map(s) identifying their service area boundaries, dated MARCH 4TH, 2009, and included as Attachment A to this Agreement, identify the water system's future service area.

IT IS FURTHER UNDERSTOOD that both the City of Sumner and the Mountain View-Edgewood Water Company have or will have, water system facilities near or adjacent to the boundary shown in Attachment A. The facilities, if compatible, may be interconnected so as to be mutually beneficial to both parties of this Agreement. The City of Sumner agrees that after the completion of such interconnection, if the Mountain View-Edgewood Water Company needs additional water in the Mountain View-Edgewood Water Company service area that can be supplied by the Sumner system, the City of Sumner will make water available to the Mountain View-Edgewood Water Company. The Mountain View-Edgewood Water Company agrees that after the completion of such interconnection, if the City of Sumner needs additional water in the Sumner service area that can be supplied by the Mountain View-Edgewood Water Company system, the Mountain View-Edgewood Water Company will make water available to the City of Sumner.

IT IS FURTHER AGREED that if either the Mountain View-Edgewood Water Company or the City of Sumner requests water from the other Water Purveyor, water will be made available only to the extent that water is available and at rates to be established at the time of connection. It is understood that only excess water from either system will be available to the other Water Purveyor and only for emergency conditions. Neither the City of Sumner, nor the Mountain View-Edgewood Water Company will be liable to the other for the failure to supply water pursuant to this agreement at any point in time.

IT IS FURTHER AGREED that each party in this agreement shall construct, at its own cost, or by the costs established in a separate agreement, the facilities necessary to provide the interconnection, but the interconnection shall not be made operative until each party agrees to the final operating procedures. This agreement shall remain in full force and in effect until terminated by either party upon not less than one year advance written notice to the other party.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date and year first herein stated.

MOUNTAIN VIEW-EDGEWOOD WATER CO.

CITY OF SUMNER

by: Marc Marcantonio
Title GENERAL MANAGER

By: David L. Emb
Mayor

Attest:

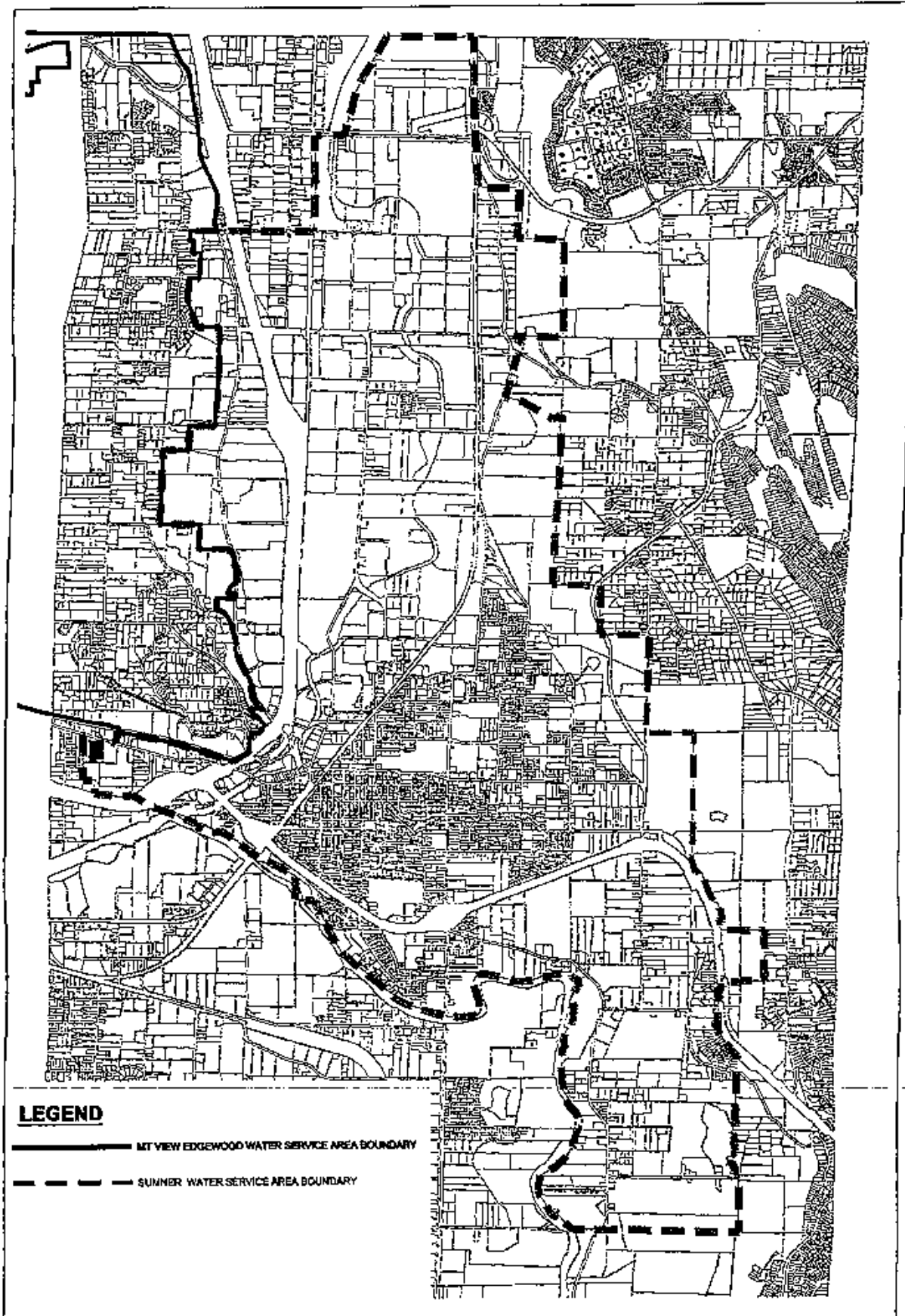
M. King
Title FIELD MANAGER

Terri Berry
City Clerk

William H. Long
Director, Public Works

Approved as to form and legality:

brw
City Attorney



LEGEND

————— MT VIEW EDGEWOOD WATER SERVICE AREA BOUNDARY

- - - - - SUNNER WATER SERVICE AREA BOUNDARY

Parametrix DATE: 08/08/2018 FILE: 0000101.dwg



Figure 1
City of Sumner - Mt. View Edgewood Water Co.
Common Water Service Area Boundary

Mt. View-Edgewood Water Company

11610 - 32nd Street E.
Puyallup, Washington 98372
(206) 863-7348


RESOLUTION NO 87-1

A RESOLUTION OF THE BOARD OF DIRECTORS OF
THE MT. VIEW-EDGEWOOD WATER COMPANY, AUTHOR-
IZING THE PRESIDENT OF THE COMPANY TO ENTER
INTO AN AGREEMENT WITH THE CITY OF PUYALLUP
FOR A WATER SERVICE AREA AGREEMENT.


BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE MT. VIEW-EDGEWOOD
WATER COMPANY INC.:

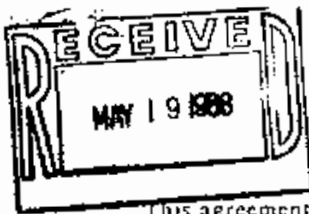
Section 1: The Board of Directors of the Mt. View-Edgewood Water
Company inc. hereby authorize the President of the
Company to enter into an agreement with the city of
Puyallup for a "Water Service Area Agreement" as
attached.

PASSED AND APPROVED at the regularly scheduled meeting of the
Board of Directors, October 13, 1987.


Dale Mitchell, President
Mt. View-Edgewood Water Company

ATTEST:


Cheryl Hastings, Office Manager



WATER SERVICE AREA AGREEMENT

GRAY & OSBORNE, INC., P.C.
6500 LEATLE
JCG #

15 1987

This agreement made and entered into this 13 day of May, 1987, by and between the City of Puyallup, Washington, a municipal corporation for and in behalf of its Water Utility and the Mountainview Edgewood Water Company, witnesseth, that:

WHEREAS, the City of Puyallup and the Mountainview Edgewood Water Company, are both in the business of providing water service to customers within their respective service areas or/as authorized by the Pierce County Coordinate Water System Plan, and;

The authority for this Agreement is granted by the Public Water System Coordination Act of 1977, Chapter 70.116 RCW.

WHEREAS, Such an Agreement is required in WAC 248-56-730, Service Area Agreements-Requirement, of the Public Water System Coordination Act; and,

WHEREAS, Designation of retail water service area, together with the cooperation of utilities, will help assure that time, effort, and money are best used by avoiding unnecessary duplication of service; and,

WHEREAS, Definite future service areas will facilitate efficient planning for, and provision of, water system improvements within Pierce County as growth occurs; and,

WHEREAS, Definite retail and wholesale utility planning areas will help assure that water reserved for public water supply purposes within Pierce County will be utilized in the future in an efficiently planned manner,

NOW THEREFORE, in consideration of the mutual benefits to be derived,

The undersigned utilities acknowledge that the maps identifying their retail service area boundaries, dated June 25, 1987, and included as Attachment A to this Agreement, identify the water system's future service area.

It is understood that utilities may initially continue existing water service within the boundaries of neighboring utilities, service area boundary hercof. Such common service areas, if they exist, are described in Attachment B to this agreement. The undersigned parties agree that any water line for retail service extending outside of the retail service area boundary, shall ultimately be phased out and service transferred to the designated adjacent utility on an economic basis or by mutual agreement. The terms of the transfer of a common service area shall be established in a separate agreement.

If, at some time in the future it is in the best interest of the undersigned parties to make service area boundary adjustments, such modifications must be by written concurrence of all involved utilities and the proper legislative authority(ies), and must be noted and filed with the designated Pierce County lead agency and D.S.H.S.

IT IS FURTHER AGREED that both the City of Puyallup and the Mountainview Edgewood Water Company have or will have, water system facilities near or adjacent to the above described boundary. The facilities, if compatible, may be interconnected so as to be mutually beneficial to both parties of this agreement. The City of Puyallup agrees that after the completion of such interconnection, if the Mountainview Edgewood Water Company needs additional water in the Mountainview Edgewood Water Company service area that can be supplied by the Puyallup system, the City of Puyallup will make water available to the Mountainview Edgewood Water Company. The Mountainview Edgewood Water Company agrees that after the completion of such interconnection, if the City of Puyallup needs additional water in the Puyallup service area that can be supplied by the Mountainview Edgewood Water Company system, the Mountainview Edgewood Water Company will make water available to the City of Puyallup.

IT IS FURTHER AGREED that if either the Mountainview Edgewood Water Company or the City of Puyallup requests water from the other Water Purveyor, water will be made available only to the extent that water is available and at rates to be established at the time of the connection. It is understood that only excess water from either system will be available to the other Water Purveyor and only for emergency conditions. Neither the City of Puyallup, nor the Mountainview Edgewood Water Company will be liable to the other for failure to supply water pursuant to this agreement at any point in time.

IT IS FURTHER AGREED that each party in this agreement shall prepare, at its own cost, or by costs established in a separate agreement, the facilities necessary to provide the interconnection, but the interconnection shall not be made operative until each party agrees to the final operating procedures. This agreement shall remain in full force and effect until terminated by either Party upon not less than one year advance written notice to the other party.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the date and year first herein stated.

MOUNTAINVIEW EDGEWOOD WATER CO.

CITY OF PUYALLUP

by _____
Title

by R. S. Crowe
Mayor

Attest: [Signature]
Title

[Signature]
City Clerk

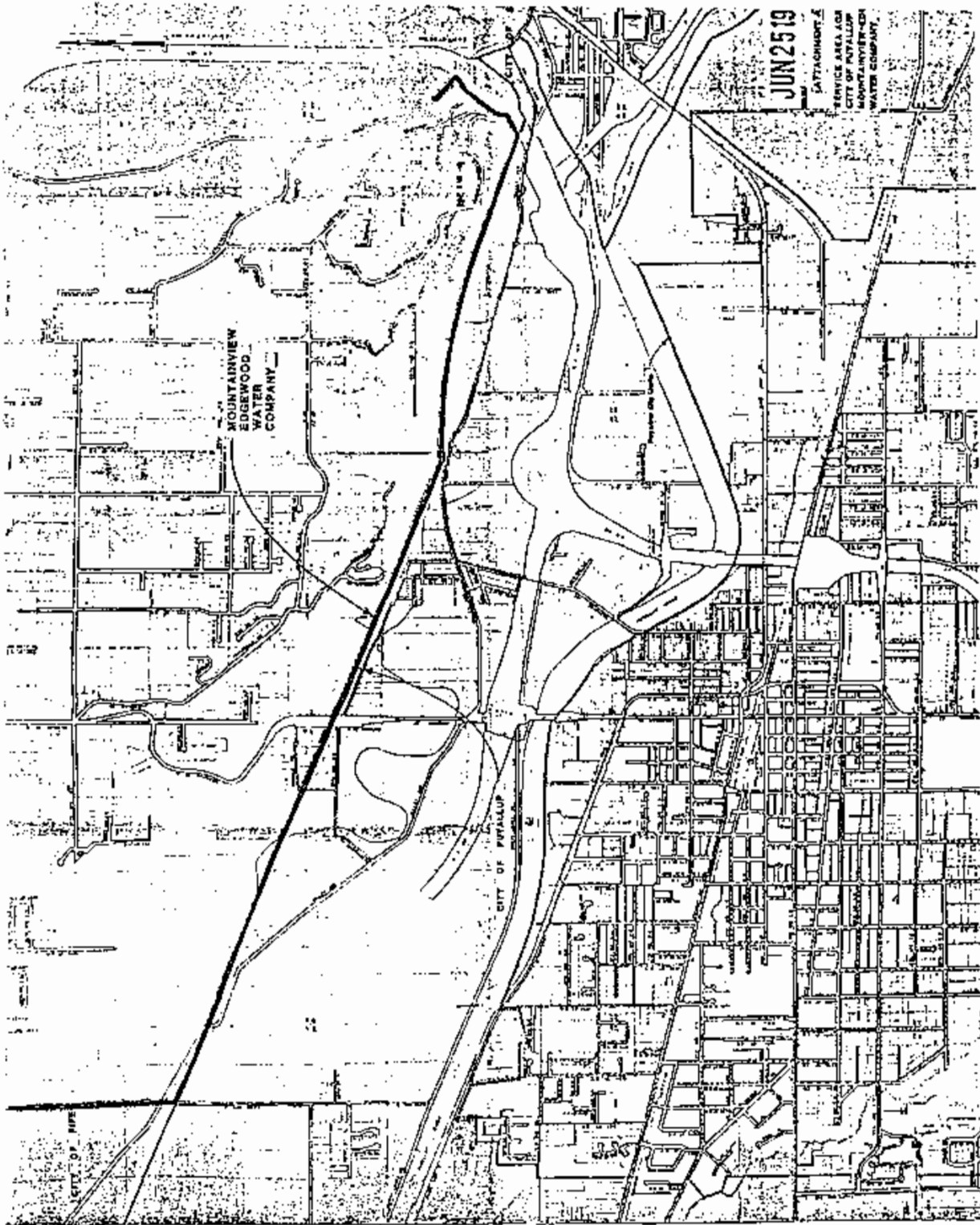
Approved: [Signature]
Title President

[Signature]
Director of Public Works

Approved: [Signature]
Manager

Approved as to form & legality:
[Signature]
City Attorney

Approved by Puyallup City Council
April 18, 1988



JUN 25 19

ATTACHMENT A
SERVICE AREA FOR
CITY OF PUYALLUP
MOUNTAINVIEW-EDG
WATER COMPANY

MOUNTAINVIEW
EDGEWOOD
WATER
COMPANY

CITY OF PUYALLUP

CITY OF PUYALLUP

VERSION A

ORDINANCE NO. 16-0485

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, GRANTING UNTO MT. VIEW-EDGEWOOD WATER COMPANY, A NONPROFIT CORPORATION OF THE STATE OF WASHINGTON, ITS SUCCESSORS AND ASSIGNS, THE RIGHT, PRIVILEGE, AUTHORITY AND NONEXCLUSIVE FRANCHISE, TO CONSTRUCT, MAINTAIN, OPERATE, REPLACE AND REPAIR WATER SYSTEM INFRASTRUCTURE, IN, ACROSS, OVER, ALONG, UNDER, THROUGH AND BELOW THE PUBLIC RIGHTS-OF-WAY OF THE CITY OF EDGEWOOD, WASHINGTON FOR FIVE YEARS; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE

WHEREAS, Mt. View-Edgewood Water Company, Inc., (hereinafter referred to as "MTVE") has requested that the City Council grant it a nonexclusive franchise; and

WHEREAS, MTVE has authority to contract with municipal corporations, and to construct, add to, maintain and supply water works; and

WHEREAS, the City Council has the authority to grant franchises for the use of its streets and other public properties pursuant to RCW 35A.47.040; and

WHEREAS, MTVE provides public drinking water to portions of citizens within the City of Edgewood, as a privately owned nonprofit municipal water corporation regulated by the Washington State Department of Health; and

WHEREAS, MTVE's public water system infrastructure and facilities are identified as critical infrastructure and its staff is classified as first responders by the Federal Government.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, DO ORDAIN AS FOLLOWS:

Section 1. Franchise Granted; Term. Pursuant to RCW 35A.47.040, the City of Edgewood, a Washington municipal corporation (hereinafter the "City"), hereby grants to MTVE, a non-profit public utility owned by City taxpayers and organized under the laws of the state of Washington, its heirs, successors, legal representatives and assigns, subject to the terms and conditions hereinafter set forth and all applicable City codes and regulations, a nonexclusive franchise beginning on the effective date set forth in Section 23 herein. The term of the franchise shall be five (5) years.

This franchise shall grant MTVE the right, privilege and authority to construct, operate, maintain, replace, and repair all necessary facilities for water delivery, in, under, on, across, over, through, along or below the public rights-of-way located in the City of Edgewood ("the Franchise Area"), as approved under City permits issued pursuant to this franchise. "Rights-of-way" as used herein

means all public streets, roads, alleys and highways of the City as now or hereafter laid out, platted, dedicated or improved.

Section 2. Non-Exclusive Franchise Grant. This franchise is granted upon the express condition that it shall not in any manner prevent the City from granting other or further franchises in, along, over, through, under, below or across any of said rights-of-way. Such franchise shall in no way prevent or prohibit the City and/or the public from using any of said roads, streets or other public properties or affect its jurisdiction over them or any part of them, and the City shall retain power to make all necessary changes, relocations, repairs, maintenance, establishment, improvement, dedication of same as the City may deem fit, including the dedication, vacation, establishment, maintenance, and improvement of all new rights-of-way, thoroughfares and other public properties of every type and description.

Section 3. Relocation of Water System Facilities.

3.1 MTVE agrees and covenants to, at MTVE's sole expense, protect, support, temporarily disconnect, relocate or remove from any rights-of-way any of MTVE's facilities when so required by the City by reason of traffic conditions, public safety, dedications of new rights-of-way and the establishment and improvement thereof, widening and improvement of existing rights-of-way, street vacations, road and walkway construction, change or establishment of street grade, and/or the construction of any public improvement or structure by any governmental agency acting in a governmental capacity (a "governmental project").

3.2 Any condition or requirement imposed by the City upon any person or entity (including without limitation any condition or requirement imposed pursuant to any contract or in conjunction with approvals for permit for zoning, land use, construction or development) which reasonably necessitates the relocation of MTVE's Facilities within the franchise area shall be a required relocation for purposes of subsection 3.1 above.

3.3 If the City determines that a government project or other event or condition, as defined in subsections 3.1 and 3.2, necessitates the relocation of MTVE's Facilities, the City shall, to the extent reasonably practicable:

- A. Notify MTVE during the planning phase to ensure collaborative effort is made to reduce project expense (to the City and MTVE), allow budgeting for the project and facilitate joint applications for grants and low-interest funding by the parties. The City will provide written notification requiring relocation of MTVE's Facilities at least ninety (90) days or additional days, approved by the Mayor or his/her designee prior to the commencement of the government project or other event or condition necessitating the relocation.
- B. Provide MTVE with copies of pertinent portions of the plans and specifications for such project and where possible propose an alternative location for MTVE's Facilities so that MTVE may relocate its facilities within the current right-of-way or to other rights-of-way.
- C. After receipt of such notice and such plans and specifications, MTVE shall complete relocation of its facilities at least ten (10) days prior to commencement of the project at no charge or expense to the City. Relocation shall be accomplished in such a manner as to accommodate the project, event or condition necessitating the

relocation.

3.4 Without limitation of the foregoing, MTVE shall specifically indemnify the City, its officers, employees, agents and representatives, for any damages, claims, additional costs or expenses assessed against, or payable by, the City related to, arising out of, or resulting, directly or indirectly, from MTVE's failure to timely remove, adjust or relocate any of its facilities in accordance with any requirement hereunder. The provisions of this subsection shall survive the expiration or termination of this franchise.

3.5 MTVE may, after receipt of written notice requesting relocation of its facilities, submit to the City written alternatives to such relocation. The City shall evaluate such alternatives in good faith and advise MTVE in writing if one or more of the alternatives are suitable to accommodate the work which would otherwise necessitate relocation of MTVE's Facilities. If so requested by the City, MTVE shall submit additional information to assist the City in making such evaluation. The City shall give each alternative proposed by MTVE full and fair consideration. In the event the City in its sole discretion ultimately determines that there is no other reasonable or feasible alternative, MTVE shall relocate its facilities as otherwise provided in this Section.

3.6 The provisions of this Section shall in no manner preclude or restrict MTVE from making any arrangements it may deem appropriate when responding to a request for relocation of its facilities by any person or entity other than the City or another governmental entity, where the facilities to be constructed by said person or entity are not or will not become governmentally-owned, operated or maintained facilities, provided that such arrangements do not unduly delay a governmental project.

Section 4. Maps and Records. After construction of any new facilities in the City rights-of-way, and as a condition of this franchise, MTVE shall make available to the City upon request and at no cost, a copy of all as-built plans, maps and records revealing the final location and condition of MTVE's facilities within the public rights-of-way. Said plans will be maintained at MTVE per Department of Homeland Security measures.

Section 5. Excavations. All construction work performed by MTVE or its contractors under or in relation to this franchise, specifically including without limitation any relocation, construction or maintenance of MTVE's facilities, shall be accomplished in a safe and workmanlike manner, so to minimize interference with the free passage of traffic and the free use of adjoining property, whether public or private, and shall comply with all applicable laws and regulations. MTVE shall at all times post and maintain proper barricades and comply with all applicable safety regulations during such period of construction as required by the ordinances of the City or the laws of the state of Washington, including RCW 39.04.180 for the construction of trench safety systems.

Excavation in City-owned rights-of-way shall be governed by the provisions of the Edgewood Municipal Code (EMC) Chapter 12.06 - "Right-of-Way Franchises and Permits for Public and Private Utilities". MTVE, at its own expense, shall secure any applicable permits required for excavating in any public right-of-way and shall give the City at least five (5) working days notice of its intent to commence work in the public right-of-way. In no case shall any work commence

on City-owned and maintained public road surfaces, without the required permit(s).

If either the City or MTVE shall at any time plan to make excavations in any area covered by this franchise and as described in this Section, the party planning such excavation shall afford the other, upon receipt of a written request to do so, a reasonable opportunity to share such excavation, PROVIDED THAT:

- A. Such joint use shall not unreasonably delay the work of the party causing the excavation to be made; and
- B. Such joint use shall be arranged and accomplished on terms and conditions satisfactory to both parties; and
- C. Either party may deny such request for safety reasons. The provisions of this Section shall survive the expiration or termination of this franchise.

Section 6. Restoration after Construction. MTVE shall, after abandonment, installation, construction, relocation, maintenance or repair of its facilities within the Franchise Area, restore the surface of the right-of-way to at least the same condition in which the property existed immediately prior to any such installation, construction, relocation, maintenance or repair. The City's Public Works Director shall have final approval of the condition of such rights-of-way after restoration. All concrete encased monuments which have been disturbed or displaced by such work shall be restored pursuant to all federal, state and local standards and specifications. MTVE agrees to promptly complete all such restoration work and to promptly repair any damage caused by such work at its sole cost and expense. The provisions of this Section shall survive the expiration, revocation or termination by other means of this franchise.

Section 7. WSDOT Standards. The parties expressly acknowledge that some rights-of-way within the franchise area, specifically including without limitation the Meridian Avenue / State Route 161 corridor, are part of the state highway system ("State Highways") and are governed by the provisions of Chapter 47.24 RCW and applicable Washington State Department of Transportation (WSDOT) requirements in addition to local ordinances and other regulations. Without limitation of any other provision of this franchise, MTVE agrees that:

- (1) any pavement trenching and restoration performed by MTVE within State Highways shall meet or exceed applicable WSDOT requirements;
- (2) any portion of a State Highway damaged or injured by MTVE shall be restored, repaired and/or replaced by MTVE to a condition that meets or exceeds applicable WSDOT requirements; and
- (3) without prejudice to any right or privilege of the City, WSDOT is authorized to enforce in an action brought in the name of the State of Washington any condition of this franchise with respect to any portion of a State Highway.

Section 8. Emergency Work. Permit Waiver. In the event of any emergency in which any of MTVE's Facilities located in or under any right-of-way breaks, becomes damaged, or if MTVE's construction area is otherwise in such a condition as to immediately endanger the property, life, health or safety of any individual, MTVE shall immediately take the proper emergency measures to repair its facilities, and to cure or remedy the dangerous condition(s) for the protection of property, life, health or safety of individuals without first applying for and obtaining a permit as required by this franchise. However, this shall not relieve MTVE from the

requirement of obtaining any permits necessary for this purpose, and MTVE shall apply for all such permits not later than the next succeeding day during which the Edgewood City Hall is open for business.

Section 9. Dangerous Conditions. Authority for City to Abate. Whenever the construction, installation or excavation of facilities authorized by this franchise has caused or contributed to a condition that appears to substantially impair the lateral support of the adjoining street or public place, or otherwise endangers the public, an adjoining public place, street utilities or City property, the Mayor may direct MTVE, at MTVE's own expense, to take actions to protect the public, adjacent public places, City property or street utilities, and such action may include compliance within a prescribed time.

In the event that MTVE fails or refuses to promptly take the actions directed by the City, or fails to fully comply with such directions, or if emergency conditions exist which require immediate action, before the City can timely contact MTVE to request MTVE affect the immediate repair, the City may enter upon the property and take such actions as are necessary to protect the public, the adjacent streets, or street utilities, or to maintain the lateral support thereof, or actions regarded as necessary safety precautions. The provisions of this Section shall survive the expiration, revocation or termination of this franchise.

Section 10. Indemnification. MTVE hereby releases, covenants not to bring suit and agrees to indemnify, defend and hold harmless the City, its officers, employees, agents and representatives from any and all claims, costs, judgments, awards or liability to any person, including attorneys' fees and including claims by MTVE's own employees for which MTVE might otherwise be immune under Title 51 RCW, for injury or death of any person or damage to property caused by or arising, in whole or in part, out of the acts or omissions of MTVE, its agents, contractors, subcontractors, servants, officers or employees in the performance of this franchise, and any rights granted hereunder. The above waiver of immunity under Title 51 RCW has been mutually negotiated by the parties.

Inspection or acceptance by the City of any work performed by MTVE at the time of completion of construction shall not be grounds for avoidance by MTVE of any of its obligations under this Section. Said indemnification obligations shall extend to claims which are not reduced to a suit and any claims which may be compromised prior to the culmination of any litigation or the institution of any litigation.

In the event of liability for damages arising out of bodily injury to persons or damages to property caused by or resulting from the concurrent negligence of MTVE and the City, MTVE's liability hereunder shall be only to the extent of MTVE's negligence. The provisions of this Section shall survive the expiration or termination of this franchise.

Section 11. Insurance. MTVE shall procure and maintain for the duration of the franchise the following liability insurance policies, insuring both MTVE and naming the City, and its elected and appointed officers, officials, agents, representatives, and employees as additional insureds:

- A. Comprehensive general liability insurance with limits not less than:
 1. \$2,000,000 for bodily injury or death to each person;

2. \$2,000,000 for property damage resulting per occurrence; and
 3. \$2,000,000 for all other types of liability.
- B. Automobile liability for owned, non-owned and hired vehicles with a limit of \$1,000,000 for each person and \$3,000,000 for each accident.
- C. Worker's compensation within statutory limits and employer's liability insurance with limits of not less than \$1,000,000.
- D. Comprehensive form premises-operations, explosions and collapse hazard, underground hazard and products completed operation hazard policies with limits of not less than \$2,000,000.
- E. The liability insurance policies required by this Section shall be maintained at all times by the MTVE. Each such insurance policy shall contain the following endorsement:

"It is hereby understood and agreed that this policy may not be canceled nor the intention not to renew be stated until 90 days after receipt by the City, by registered mail, of a written notice addressed to the City Risk Manager of such intent to cancel or not to renew."

MTVE may satisfy the requirements of this section by a self-insurance program or membership in an insurance pool providing substantially the same coverage as set forth above and approved by the City.

Section 12. Restoration Bond. In lieu of a restoration bond pursuant to EMC 12.06.218, MTVE hereby warrants all work performed under this franchise and further specifically represents and warrants that all required restoration of the right-of-way shall be performed timely, in a workmanlike manner, and in full compliance with all applicable regulatory standards.

Section 13. Modification. The City and MTVE hereby reserve the right to mutually alter, amend or modify the terms and conditions of this franchise upon written agreement of both parties to such alteration, amendment or modification. No such alteration, amendment or modification shall be effective without a writing signed by both parties.

Section 14. Forfeiture and Revocation. If MTVE willfully violates or fails to comply with any of the provisions of this franchise, or through willful misconduct or negligence fails to heed or comply with any notice given by the City under the provisions of this franchise, then MTVE shall forfeit all rights conferred hereunder and this franchise may be revoked or annulled by the Edgewood City Council after a hearing held upon notice to MTVE.

Section 15. Remedies to Enforce Compliance. The City may elect, in lieu of revocation and without any prejudice to any of its other legal rights and remedies, to obtain an order from the superior court having jurisdiction compelling MTVE to comply with the provisions of this franchise. In addition to any other remedy provided herein, the City reserves the right to pursue any remedy to compel or force MTVE and/or its successors and assigns to comply with the terms hereof, and the pursuit of any right or remedy by the City shall not prevent the City from thereafter declaring a forfeiture or revocation for breach of the conditions herein.

Section 16. Legal Compliance. City Ordinances and Regulations. MTVE shall comply

with applicable federal, state and local laws, rules and regulations, unless otherwise modified as part of this franchise, at all times relevant to this franchise. Nothing herein shall be deemed to restrict the City's ability to adopt and enforce all necessary and appropriate ordinances regulating the performance of the conditions of this franchise, including any valid ordinance made in the exercise of its police powers in the interest of public safety and for the welfare of the public. In the event of a conflict between the provisions of this franchise and any other ordinance(s) enacted under the City's police power authority, such other ordinance(s) shall take precedence over the provisions set forth herein.

Section 17. Planning Coordination.

17.1 **Growth Management.** The parties agree, as follows, to participate in the development of, and reasonable updates to, the each other's planning documents:

17.1.1 For MTVE's service within the City limits, MTVE will participate in a cooperative effort with the City of Edgewood to develop a Comprehensive Plan Utilities Element that meets the requirements described in RCW 36.70A.070(4).

17.1.2 MTVE will participate in a cooperative effort with the City to ensure that the Utilities Element of Edgewood's Comprehensive plan is accurate as it relates to the MTVE's operations and is updated to ensure continued relevance at reasonable intervals.

17.1.3 MTVE shall submit information relates to the general location, proposed location, and capacity of all existing and proposed facilities within the City as requested by the Public Works Director within a reasonable time frame, not exceeding sixty (60) days from receipt of a written request for such information, provided that such information is in the MTVE's possession, or can be reasonably developed from the information in MTVE's possession.

17.1.4 MTVE will update information provided to the City under Section 17 – Planning Coordination, whenever there are major changes in MTVE's system plans for the City of Edgewood.

17.1.5 The City will provide information relevant to MTVE's operations within a reasonable period of written request to assist MTVE in the development or update of its Comprehensive Water System Plan, provided that such information is in the City's possession, or can be reasonably developed from the information in the City's possession.

17.2 **System Development Information.** MTVE and the City

will each assign a representative whose responsibility shall be to coordinate planning for CIP projects including those that involve undergrounding. At a minimum, such coordination shall include the following:

17.2.1 By February 1st of each year, MTVE shall provide the City with a schedule of its planned capital improvements, which may affect the right of way for that year.

17.2.2 By February 1st of each year, the City shall provide MTVE with a schedule of its planned capital improvements which may affect the right of way for that year including, but not limited to street overlays and repairs, storm drainage improvements and construction, and all other right of way activities that could affect MTVE's capital improvements and infrastructure.

17.2.3 MTVE shall meet with the City, other franchises and users of the right of way, as necessary, to schedule and coordinate construction activities.

17.2.4 MTVE shall ensure that all MTVE's construction locations, activities, and schedules shall be coordinated, to minimize public inconvenience, disruption, or damages.

17.3 Emergency Management. The City and MTVE agree to cooperate in emergency management planning, emergency operations response procedures, and recover activity strategies, including identifying potential hazards and risks in the MTVE's facilities so that they can be either mitigated or minimized. Provided, that nothing herein shall be construed as altering or otherwise reducing MTVE's obligations under this franchise, specifically including without limitation MTVE's obligations under Section 10.

Section 18. Acceptance. Within sixty (60) days after the passage and approval of this Ordinance, this franchise may be accepted by MTVE by its filing with the City Clerk an unconditional written acceptance thereof. Failure of MTVE to so accept this franchise within said period of time shall be deemed a rejection thereof by MTVE, and the rights and privileges herein granted shall be of no effect whatsoever, unless extended by Ordinance.

Section 19. Survival. All of the provisions, conditions and requirements of Sections 3 (Relocation of Water Facilities); Section 5 (Excavation); Section 6 (Restoration after Construction); Section 9 (Dangerous Conditions); and Section 10 (Indemnification); of this franchise shall be in addition to any and all other obligations and liabilities MTVE may have to the City at common law, by statute, or by contract, and shall survive the expiration or termination

of this franchise. All of the provisions, conditions, regulations and requirements contained in this franchise shall further be binding upon the heirs, successors, executors, administrators, legal representatives and assigns of MTVE and all privileges, as well as all obligations and liabilities of MTVE shall inure to its heirs, successors and assigns equally as if they were specifically mentioned wherever MTVE is named herein.

Section 20. Assignment. This franchise may not be assigned or transferred without the written approval of the City, except MTVE may freely assign this franchise in whole or in part to a parent, subsidiary, or affiliated corporation or as part of any corporate financing, reorganization or refinancing. In the case of transfer or assignment as security by mortgage or other security instrument in whole or in part to secure indebtedness, such consent shall not be required unless and until the secured party elects to realize upon the collateral. MTVE shall provide prompt, written notice to the City of any such assignment.

Section 21. Notice. Any notice or information required or permitted to be given to the parties under this franchise may be sent to the following addresses unless otherwise specified:

CITY OF EDGEWOOD
Mayor
2224 104th Avenue East
Edgewood, Washington 98372

MT. VIEW-EDGEWOOD WATER CO.
General Manager
11610 32nd Street East
Edgewood, Washington 98372

Section 22. Severability. If any section, sentence, clause or phrase of this ordinance should be held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not affect the validity or constitutionality of any other section, sentence, clause or phrase of this ordinance unless such invalidity or unconstitutionality materially alters the rights, privileges, duties, or obligations hereunder, in which event either party may request renegotiation of those remaining terms of this franchise materially affected by such court's ruling.

Section 23. Effective Date. This ordinance, being an exercise of a power specifically delegated to the City legislative body, is not subject to referendum, and shall take effect (5) days after passage and publication of an approved summary thereof consisting of the title. Provided, that the franchise granted by this ordinance shall not take effect until the City's receipt of MTVE's signed acceptance of the terms set forth herein in accordance with Section 18.

Section 24. Regulatory Authority Reserved; Water Utility Service. The parties mutually acknowledge that the City is a municipal corporation organized under the Optional Municipal Code of Title 35A RCW. Nothing herein shall be construed as a waiver, abridgement or other limitation of the City's regulatory authority and/or police power, which the City hereby expressly reserves in full. Without limitation of the forgoing, MTVE shall be required to apply for and obtain all applicable City permits, licenses and/or approvals and otherwise operate in full compliance with the requirements thereof. Any water utility service provided by MTVE to City-owned properties shall be governed by a separate contract between the parties.

Section 25. Nonwaiver of Breach. The failure of either party at any time to require performance by the other of any provision hereof shall in no way affect the right of the other party hereafter to enforce the same. Nor shall the waiver by either party of any breach of any

provision hereof be taken or held to be a waiver of any succeeding breach of such provision, or as a waiver of the provision itself or any other provision.

Section 26. Entire Agreement. This franchise represents the entire understanding and agreement between the parties hereto with respect to the subject matter hereof and shall supersede all prior oral negotiations and written agreements between the parties.

Section 27. No Third Party Beneficiary. This franchise has been negotiated and executed for the exclusive benefit of the signatory parties and is enforceable only by the same. Nothing herein shall be construed as creating any rights in or for any third parties.

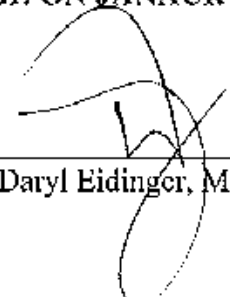
Section 28. Governing Law. Venue. This franchise shall be governed in all respects by the laws of the state of Washington. The exclusive venue for any dispute related to this franchise shall be the Pierce County Superior Court. The substantially prevailing party in any such dispute shall be entitled to an award of its reasonable attorney fees.

Section 29. Abandonment. If MTVE abandons any or all of its facilities during the franchise term, the City, at its option, may operate said facilities or designate another entity to operate the same temporarily until MTVE restores service under conditions acceptable to the City, or until the franchise is revoked and a new franchisee is selected by the City. If the City designates another entity to operate the water utility system, MTVE shall reimburse the City for all reasonable costs, expenses and damages incurred, including reasonable attorney fees, court expenses and attributed expenses for work conducted by the City's staff or agents.

Section 30. Taxes and Fees. Nothing contained in this franchise shall exempt MTVE from MTVE's obligation to pay any applicable utility tax, business tax, or ad valorem property tax, now or hereafter levied against real or personal property within the City, or against any local improvement assessment imposed on MTVE. Any fees, charges and/or fines provided for in the Edgewood Municipal Code or any other City ordinance, and any compensation charged and paid for the Public Rights-of-Way, whether pecuniary or in-kind, are separate from, and additional to, any and all federal, state, local, and City taxes as may be levied, imposed or due from MTVE.

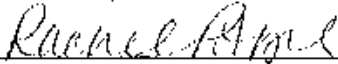
**Presented to Council for first reading on October 4th, 2016
Presented to Council for second reading on November 15th, 2016**

ADOPTED BY THE CITY COUNCIL ON JANUARY 10TH, 2017



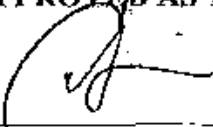
Daryl Eidinger, Mayor

ATTEST/AUTHENTICATED:



Rachel Pitzel, City Clerk

APPROVED AS TO FORM:



Carol Morris, City Attorney

Published: January 12, 2017
Effective: January 17, 2017

ACCEPTANCE OF FRANCHISE

The undersigned authorized representative of Mt.View-Edgewood Water Company hereby declares on behalf of Mt.View-Edgewood Water Company, the acceptance of the nonexclusive franchise to Mt. View-Edgewood Water Company approved by the Edgewood City Council on the 10th day of January 2017 by the adoption of Edgewood City Ordinance No. 16-0485.

Dated: JANUARY 11, 2017

MT. VIEW-EDGEWOOD WATER COMPANY

By: Jacki Moxton
Its: GENERAL MANAGER

CITY OF EDGEWOOD
2224 104th Avenue East, Edgewood, WA 98372
(253) 952-3299 Fax: (253) 952-3537

LEGAL NOTICE

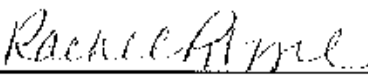
NOTICE OF ORDINANCE ADOPTED BY EDGEWOOD CITY COUNCIL

The following is a summary of an Ordinance adopted by the City of Edgewood City Council on the 10th day of January 2017, and shall take effect and be in full force on the 17th day of January 2017.

ORDINANCE NO. 16-0485

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF EDGEWOOD, WASHINGTON, GRANTING UNTO MT. VIEW-EDGEWOOD WATER COMPANY, A NONPROFIT CORPORATION OF THE STATE OF WASHINGTON, ITS SUCCESSORS AND ASSIGNS, THE RIGHT, PRIVILEGE, AUTHORITY AND NONEXCLUSIVE FRANCHISE, TO CONSTRUCT, MAINTAIN, OPERATE, REPLACE AND REPAIR WATER SYSTEM INFRASTRUCTURE, IN, ACROSS, OVER, ALONG, UNDER, THROUGH AND BELOW THE PUBLIC RIGHTS-OF-WAY OF THE CITY OF EDGEWOOD, WASHINGTON FOR FIVE YEARS; PROVIDING FOR SEVERABILITY; AND ESTABLISHING AN EFFECTIVE DATE

The full text of the Ordinance is available at the City Clerk's office, Edgewood City Hall, 2224 104th Avenue East, Edgewood, WA 98372 (253) 952-3299.



Rachel Pitzel, City Clerk

Appendix E

Development Standards

DEVELOPMENT STANDARDS

For Water Main Extensions

And

Fire Hydrants

Mt. View-Edgewood Water Company

The standards within are presented to inform the Developer/Contractor of the minimum requirements necessary in the construction and acceptance of water facilities within the Mt. View - Edgewood Water Company service area.

Mt. View – Edgewood Water Company does not assume responsibility for keeping this material current. The Water Company should be consulted in case of doubt on the applicability of any item(s) within. Some of the information contained within is based on governmental codes and ordinances, and industry standards and are subject to change in the event that such governing codes and ordinances are changed.

DEVELOPMENT STANDARDS

For Water Main Extensions

And

Fire Hydrants

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SECTION II	DEVELOPER'S AGREEMENT
SECTION III	GENERAL STANDARDS
SECTION IV	DEVELOPMENT DETAILS

SECTION I
GENERAL CONDITIONS

SECTION I GENERAL CONDITIONS

1. DEFINITIONS

To make clear the meaning and intent of the words: Water Company, Water Company's Engineers, Developer, Contractor, and Contract Documents, as used in these standards, the following definitions are given:

Water Company: Mt. View – Edgewood Water Company, Pierce County, Washington, a private corporation existing under and by virtue of the laws of the State of Washington.

Water Company's Engineers: Members of the licensed consulting organization which is retained by the Water Company.

Inspector: The person designated by the Water Company to inspect work.

Assignment of Account: A type of maintenance guarantee provided to the Water Company by the developer to correct defects in labor and/or materials for a period of two (2) years after final acceptance by the Water Company.

Developer: The person, persons, firm or corporation entering into agreement with Mt. View – Edgewood Water Company for the installation and/or extension of a water facility to serve a lot or plat development. The term also includes the Developer's agents and employees and Contractor.

Contractor: The person, persons, firm or corporation assigned by the developer to perform the work required by project plans and specifications to construct the water facility within the Water Company service area. The term also includes the Contractor's agents and employees.

Developer/Contractor: Use of either "Developer" or "Contractor" in this document shall be understood to be interchangeable, one for the other, wherein both are responsible for compliance, and the developer assumes full and final responsibility unless a division of responsibility through the use of a contract, performance bond, insurance, etc., is established.

Contract Documents: These shall consist of the following, and in case of conflicting provisions the text material shall have precedence:

- A. Developer's Agreement for Water Main Extensions
- B. Plans
- C. Standard Detail
- D. Specifications-Conditions and Standards of the Contract to include system testing

- E. Addenda
- F. Change Orders
- G. General Conditions
- H. "As Built" Documents
- I. Easements

2. STATUS OF ENGINEER AND INSPECTOR

The Water Company's Engineer or Inspector shall serve as an agent of the Water Company, and in conjunction with the Water Company's General Manager, have the authority to accept or reject the work performed by the Developer/Contractor for facilities within the Water Company service area.

3. INSPECTION OF WORK AND DEPOSIT

The Developer shall give the Water Company timely notice that the work, or any part thereof, which has been constructed within the Water Company's service area, is ready for inspection. In no event shall the work or any portion thereof, be covered or placed into operation until the Water Company's representative has completed an inspection and approved the same.

If any work should be covered without prior inspection and approval by the Water Company, it must, if required by the Water Company, be uncovered for examination at the Developer's expense.

A sum computed for each inspector day (8 hours), as estimated by the Water Company General Manager, shall be paid by the Developer prior to construction. The "Inspection Fee" hourly rate is determined utilizing the current fee schedule. An inspector day shall be each day or part thereof during which construction is in progress. If the actual number of inspection days so required exceeds the General Manager's estimate, the Developer shall pay the Water Company upon demand for each additional inspector day. The Water Company may stop the work until such payment is made. In addition to the number of inspection days, an additional amount will be collected at the same time to cover the expense of various fees such as, but not limited to, meetings, laboratory expenses, water purchases, engineering expenses, equipment rental, parts, and additional labor as needed. If the actual number of inspector days so required is less than the General Manager's estimate, or if the additional deposit amount exceeds actual costs, the Water Company will reconcile the deposit to the final costs, and refund the difference.

The Water Company and its representatives shall at all times have access to the work whenever it is in preparation or progress, and the Developer shall provide proper facilities for such access and for such inspection.

The Developer shall make such reasonable tests of the work, at the Developer's expense, as the Water Company shall request.

If the specifications, the Water Company's instructions, laws, ordinances, or any public authority shall require any work to be specially tested or approved, the Developer shall give the Water Company or its representative timely notice of its readiness for inspection and, if the inspection is by other authority than the Engineer, the date fixed for such inspection.

All inspections by the Water Company will be made with all reasonable promptness but, in no event, shall the lack of prompt inspections be construed to allow the Developer to cover the work or any portion without inspection.

4. FINAL INSPECTION AND ACCEPTANCE

All materials and completed work will, before acceptance by the Water Company, be subject to final inspection by the Water Company. The Water Company shall have the right to subject all machinery, equipment, and work to such tests as will, in their opinion, assist in determining whether the contract has been faithfully performed.

5. MATERIALS AND FACILITIES

Unless otherwise stipulated, all material utilized for water system construction within the Water Company shall be new, and both workmanship and materials shall be of good quality. The Developer shall, if required, furnish satisfactory evidence as to the type and quality of materials.

The Developer shall at all times enforce strict discipline and good order among the employees, and shall not employ any person not skilled in the work assigned.

6. ROYALTIES AND PATENTS

The Developer shall pay all royalties and license fees. The Developer shall defend all suits and claims for infringement of any patent rights and shall save the Water Company harmless from loss on account thereof.

7. SURVEYS, PERMITS, AND REGULATIONS

The Developer shall furnish and pay for all surveys, licenses, permits, easements, and right-of-way.

The Developer shall give all notices and comply with all laws, ordinances, rules, and regulations bearing on the conduct of the work.

8. POINTS AND INSTRUCTIONS

The Developer shall carefully preserve bench marks, reference points and stakes, and in the case of destruction shall be charged with the resulting expense for re-establishing such points, and shall be responsible for any mistakes that may be caused by their absence or disturbance.

9. PROTECTION OF WORK AND PROPERTY

The Developer shall continuously maintain adequate protection of all work from damage and shall protect the property of others from injury or loss arising in connection with the work. Developer shall make good any such damage, injuries, or loss. Developer shall adequately protect the adjacent property as provided by law and the Contract Documents. Developer shall provide and maintain all passage ways, guard fences, lights and other facilities for protection required by public authority or local conditions. Developer shall bear the risk of loss or damage for all finished or partially finished work until the entire project is completed and accepted by the Engineer.

10. EXISTING UTILITIES

The Contractor shall investigate and locate all buried utilities or obstructions in the construction area prior to construction of new water facilities. The contractor shall coordinate with the Water Company, power, telephone, fiber optics, gas companies and all other affected utilities for filed location of the respective existing facilities.

11. REPLACING IMPROVEMENTS

Whenever it is necessary in the course of construction to remove or disturb culverts, driveways, roadways, pipelines, or other existing improvements, they shall be replaced to a condition equal to that existing before they were so removed or disturbed. If it is necessary to trench through lawns, the sod shall be removed before trenching and replaced after backfilling.

12. ACCESS

Bridging shall be provided across private driveways and roadways, during the period that trenches must be open, in such a manner as not to constitute a hazard to the people who use them. All construction operations shall be conducted in such a manner as to interfere as little as possible with the normal procedure of traffic.

13. DEFECTS AND THEIR REMEDIES

If the work or any part thereof performed by the Developer/Contractor shall be deemed by the Water Company's representative as not in conformity with the Water Company's Standards, the Developer shall rebuild or otherwise remedy such defects prior to being accepted by the Water Company.

The Developer shall be responsible for correcting all defects in workmanship and material appearing within two years after completion and acceptance of the project. The Developer shall start work to remedy such defects within seven (7) days of notice of discovery thereof by the Water Company and shall complete such work within a reasonable time. In emergencies, where damage may result from delaying or where loss of service may result, such corrections may be made by the Water Company, in which case all costs shall be borne by the Developer. In the event the Developer does not accomplish correction at the time specified, the work shall be otherwise accomplished and the cost of same shall be paid by the Developer.

14. USE OF COMPLETED PORTIONS

The Water Company shall have the right to take possession of and use any completed or partially completed portions of the work, notwithstanding that the time may not have expired for completing the entire work or such portions, which will not interfere with the Contractor performing the remaining work. Such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents or Water Company Standards.

15. LIMITS OF LIABILITY, SUMMARY OF COVERAGE, AND INDEMNITY

The Contractor shall carry liability and property damage insurance covering all work during Project construction, including that done by subcontractors. The Water Company must be listed as Additional Insured and be a Certificate Holder. This insurance shall also protect the Water Company from any contingent liability prior to Project acceptance.

The minimum limits of liability for the below mentioned exposures will be \$1,000,000 property damage, \$1,000,000 Bodily Injury, and the amount of the Contract Price when direct property damage is involved.

The aforementioned general public liability insurance shall name the Owner as a beneficiary thereof and a certificate of such insurance shall be filed by the Contractor with the Owner prior to the commencement of construction. Such certificate(s) shall contain a clause requiring a minimum of ten (10) days notice to the Owner by the insurance company before the cancellation thereof.

A. Contractor's Liability and Property Damages

- (1) Workman's Compensation and Employer's Liability
- (2) Public Liability, Bodily Injury, and Property Damage
- (3) Automobile, Truck Public Liability, Bodily Injury & Property Damage
- (4) Comprehensive, Storm, Vandalism, etc.
- (5) Fire

B. Owner's Protective Liability and Property Damage

- (1) Contingent Liability
- (2) Bodily Injury
- (3) Fire
- (4) Comprehensive, Storm, Vandalism, etc.

C. Contractual Liability and Property Damage

- (1) Contractor's Agents and Subcontractors
- (2) Owner's Agents
- (3) Others not in the Employ of Contractor or Owner

The Developer shall indemnify and save harmless the Water Company from and against all losses and all claims, demands, payments, suits, actions, recoveries, and judgments of every nature and description brought or recovered against the water Company by reason of any act or omission of the Developer, and his/her agents or employees, in the execution of the work or in the guarding of it.

16. SAFETY

Contractor expressly agrees that it shall be solely responsible for supervising its employees, that it shall comply with all rules, regulations, orders, standards, and interpretations promulgated pursuant to the Occupational Safety and Health Act of 1970 {and to the Occupational and Safety Act of the State of Washington}, including, but not limited to, training, provision of personal protective equipment, adherence to all appropriate lock out/tag out procedures, and providing all notices, material safety data sheets, labels, etc. required by the right-to-know standard.

17. RIGHTS OF VARIOUS INTERESTS

Wherever work being done by the Water Company's employees or agents or by other developers is contiguous to work performed by the Developer, the respective rights of the various interests involved shall be established by those involved to secure the completion of the various portions of the work in general harmony.

18. SANITATION

Necessary sanitation conveniences for the use of workers on the job, properly secluded from public observation, shall be provided and maintained by the developer.

19. CLEAN-UP

The Developer shall keep the construction site reasonably clean during the progress of the work.

The Developer shall backfill the trenches, clean out ditches that may have been filled during the work, replace damaged surfacing, remove surplus materials and trash, dispose of brush, repair all damages, and otherwise leave the job in a neat and orderly condition.

20. CONSTRUCTION CONFORMANCE

In addition to meeting the standards and conditions of the Mt. View – Edgewood Water Company, all construction shall be in conformance with the requirements of the City of Edgewood, Department of Social and Health Services, Department of Ecology, Washington State Department of Transportation and the American Public Works Association.

SECTION II
DEVELOPER'S AGREEMENT

MT. VIEW – EDGEWOOD WATER COMPANY APPLICATION AND AGREEMENT TO INSTALL HYDRANTS AND/OR CONSTRUCT EXTENSION TO WATER COMPANY SYSTEM

The undersigned, “Developer” herein, hereby makes application to Mt. View – Edgewood Water Company, “Water Company” herein, for permission to install a hydrant and/or construct and connect a private “extension” to the Water Company’s existing system as herein provided. The term “Extension” shall apply herein wherever the Developer is extending the Water Company system. If this application is accepted, the undersigned, in consideration of the mutual promises and covenants herein contained, agrees to the terms and conditions of this Developer Extension Agreement as follows:

1. LOCATION OF EXTENSION

A. Water

The proposed water system extension will be installed in streets and other approved rights-of-way and/or easements and shall be for the use and benefit of the property hereinafter described, which property is owned by Developer and/or other owners for whom Developer is acting as agent. Any such owners have joined in this application and are designated on the signature page hereof.

B. Description

The legal description of the real property upon which the Extension will be installed is attached hereto as Exhibit A.

2. WARRANTY OF AUTHORITY

Developer and any additional owners warrant that they are the owners of the property described in this Agreement. Developer shall, upon request of Water Company, provide a title report to Water Company establishing that the parties executing this Agreement are the owners of all the real property described herein.

3. DESCRIPTION OF EXTENSION

A. Water

The Extension will consist of approximately _____ lineal feet of water pipe and appurtenances and shall be installed in accordance with this Agreement and with such Plans as Developer’s Engineer may prepare in conformity with Water Company specifications and approved by the Water Company.

4. PREPARATION OF PLANS BY DEVELOPER'S ENGINEER

- A. Developer shall have its own engineer prepare the Plans for the extension according to Water Company Specifications.
- B. Prior to preparation of the Plans, Developer must:
 - 1. Obtain official preliminary plat approval for Developer's project using a minimum scale of one (1) inch equals fifty (50) feet.
 - 2. File with the Water Company the road and storm sewer plans and profiles for the project; and
 - 3. File with the Water Company a contour map of the project with contour intervals of five (5) feet or less using a scale of one (1) inch equals fifty (50) feet. All data to be based on USCGS data.
- C. Upon completion of 4.B. above, a pre-design meeting shall be held with Water Company and with Developer and Developer's Engineer in attendance. It is expected that this meeting will occur approximately ten (10) working days after completion of B above. It is the obligation of Developer to arrange for the conference and the attendance of concerned parties.
- D. At the pre-design meeting, the Developer's Engineer shall submit to Water Company a conceptual plan for the utility development of the project.
- E. Upon preliminary review of the conceptual plan, Developer's Engineer shall prepare and submit to the Water Company a preliminary design and Plan for review and approval by the Water Company. **The Developer pays a Plan Review Fee per current Fee Schedule.** The Water Company shall have the right to require changes in the preliminary design and Plan as may be deemed necessary. All designs and plans prepared by Developer's Engineer shall be prepared in accordance with the Water Company Development Details.
- F. Upon approval of the preliminary design and Plan by the Water Company, Developer's Engineer shall prepare a proposed final Plan and submit three (3) copies of the proposed final Plan to the Water Company for review along with the prescribed Plan Review fee. Upon receipt of the proposed final Plan, Water Company shall have the right to require such changes to the proposed final Plan as may be deemed necessary.
- G. Upon completion of all required changes to the final Plan, the Water Company Board of Directors shall consider the final Plan for approval at a regularly scheduled Board meeting. The Water Company Board of

Mt. View-Edgewood Water Company

Directors shall have the right to approve, reject, or require changes to the final Plan as may be deemed necessary.

- H. Upon approval of the final Plan by the Water Company Board of Directors, the plans shall be dated and stamped approved. Plan approval is valid for one (1) year.
- I. The Developer shall be responsible for procuring all applicable permits. Should changes to the Plan be required in order to receive said permits and approvals, Developer's Engineer shall make all changes as required and resubmit the plans to the Water Company. **Additional plan review fees will apply.**
- J. The Developer's Engineer shall provide the Water Company with one (1) full size copy of the as-builts within 30 days after completion of project. Electronic survey data shall also be supplied. The electronic data shall include all water system components (valves, hydrants, PRVs, meters, air vacs, blow-offs, and any other components) and relevant structures. The survey location of the points shall be based on the Washington State Plane North coordinate system, NAD 83/91 horizontal datum and NAVD 88 vertical datum. The survey data can be included as point blocks in a digital ACAD file, release 14 or later. All points must be attributed to include the type of water system component (size, type, mfg, and year) and type of structure.

5. EASEMENTS

Upon approval of the final Plan by the Water Company Board of Directors, and prior to commencement of construction, the developer shall obtain all necessary easements without cost to the Water Company. The developer shall use the Water Company's standard easement form found at the end of this section. Wherever a main is to be laid other than in a public street, a permanent easement of not less than seven and one half (7-1/2) feet on each side of the centerline, shall be provided. The developer shall supply the Water Company with the supporting data necessary to verify the location of the easement(s). If legal services are required by the Water Company in connection with the easement(s), other than formal review, the cost of such services shall be reimbursed by the Developer to the Water Company on demand and before acceptance of the extension.

6. WARRANTIES OF DEVELOPER

The bill of sale to be provided by Developer to Water Company shall contain the following warranties with Water Company as beneficiary:

- A. Developer is the owner of the extension, the same is free and clear to all encumbrances and Developer has good right and authority to transfer title thereto to the Water Company and will defend the title of Water Company

against the claims of all third parties claiming to own the same or claiming any interest therein or encumbrance thereon; and

- B. That all bills and taxes relating to the construction and installation of the Extension have been paid in full and that there are no lawsuits pending involving this project. The undersigned further warrants that in the event any lawsuit is filed as a result of, or involving, this project the undersigned will undertake to defend the lawsuit and will accept responsibility for all costs of litigation, including costs on appeal, and will hold Water Company harmless on any judgment rendered against Water Company; and
- C. That all laws and ordinances respecting construction of this project have been complied with, and that the system extension is in proper working condition, order and repair, and is adequate and fit for its intended purpose and that it has been constructed in accordance with the conditions and standards of the Water Company; and
- D. For a period of two (2) years from the date of final acceptance of the extension by Water Company, the extension and all parts thereof shall remain in proper working condition, order and repair. Developer shall repair or replace, at its expense, any work or material which may prove to be defective during the period of the warranty.

In addition, Developer shall obtain warranties and guaranties from its subcontractor and/or suppliers where such warranties or guaranties are specifically required in the Agreement. When corrections of defects occurring within the warranty period are made, Developer shall further warrant corrected work for two (2) years after acceptance of the corrected work by Water Company.

7. CORRECTION OF DEFECTS OCCURRING WITH WARRANTY PERIOD

When defects in the extension are discovered within the warranty period, Developer shall start work to remedy any such defects within four (4) calendar days of notice by Water Company and shall complete such work within a reasonable time. In emergencies, where damages may result from delay and where loss of service may result, corrections may be made by Water Company upon discovery, in which case the cost thereof shall be borne by Developer. In the event Developer does not commence and/or accomplish corrections within the time specified, the work may be accomplished by Water Company at its option, and the cost thereof shall be paid by Developer.

Developer shall be responsible for any expenses incurred by the Water Company resulting from defects in Developer's work, including actual damages, costs of materials and labor expended by Water Company in making repairs and the cost of engineering, inspection and supervision by the Water Company.

8. PERFORMANCE GUARANTEE

Developer shall, if requested, furnish to Water Company prior to the preconstruction conference a performance guarantee of a type and in a form as determined by Water Company, in its sole discretion, in an amount equal to the engineer's estimated cost of the Extension or contractor bid price. The performance guarantee shall require completion of all work in accordance with the Agreement, the Plans and Specifications and other requirements of Water Company, within a period of twelve (12) months from the date of acceptance of the Plans by the Water Company. The Water Company in its sole discretion may also require a payment bond of a type and in a form as determined by the Water Company requiring the payment by Developer of all persons furnishing labor and materials in connection with the work performed under the Agreement, and shall hold Water Company harmless from any claims therefrom. Any payment bond required by Water Company shall be provided to Water Company prior to the preconstruction conference or following commencement of work as a condition of Water Company granting final acceptance of the work referenced herein. No third person or party shall have any rights under any performance guarantee that the Water Company may require from the Developer and such performance guarantee is provided entirely for the benefit of Water Company and Developer and their successors in interest.

9. ASSIGNMENT OF ACCOUNT

Acceptance by Water Company shall not relieve Developer of the obligation to correct defects in labor and/or materials as herein provided and/or the obligations set forth in applicable paragraphs hereof. Prior to acceptance of the extension by Water Company and the transfer of title to such extension(s) as set forth herein, Developer shall furnish to the Water Company an Assignment of Account which shall continue in force from the date of acceptance of said extension for a period of two (2) years from the date of acceptance of the system and transfer of title. The Assignment of Account shall be in an amount equal to ten (10) percent of the cost of said extension, including tax, but not less than two thousand dollars (\$2,000.00). The Water Company shall review the submitted construction costs and determine the amount of the maintenance bond. An Assignment of Account is a two (2) year Certificate of Deposit held at Columbia Bank, Edgewood, WA in the names of the Water Company and the Developer; which allows the Water Company access to the funds if necessary to correct defects (Developer will first be given an opportunity to correct defects in a timely manner). At the end of the two (2) year period and after final inspection and release, the Developer recovers remaining funds plus accrued interest.

10. LIMITATION OF PERIOD OF ACCEPTANCE

The extension shall be completed and accepted within twelve (12) months of the date of acceptance of the Plans by the Water Company. If the extension is not completed and

Mt. View-Edgewood Water Company

accepted within the twelve (12) month period, then this Agreement and all of Developer's rights herein shall terminate and cease. No extension of the time for completion of the Agreement shall be allowed. In the event the Agreement terminates, Developer shall be required to make a new pre-application and new application for extension agreement to Water Company. Any such new agreement entered into between Water Company and Developer pursuant to a new application shall be subject to any new or amended resolutions, policies, or standards and specifications which have taken effect since the execution of the terminated agreement.

If Developer abandons the extension project during twelve (12) months or shall fail to complete the extension within that period, Developer may be deemed, at Water Company's sole option and election to have transferred and conveyed to Water Company any portion of the extension which has been completed.

11. FINAL ACCEPTANCE – CONDITIONS PRECEDENT

Compliance with all terms and conditions of this Agreement, the Plans and Specifications prepared hereunder and other Water Company requirements shall be a condition precedent to Water Company's obligation to allow connection to the Water Company's system, to accept the bill of sale to the extension, and to Water Company's agreement to maintain and operate the extension and to provide service to the real property that is described in this Agreement.

Water Company shall not be required to allow any connection to Water Company's system for any portion of the real property described in this Agreement if there are any fees or costs unpaid to Water Company under this Agreement or there are other fees arising under other Water Company requirements which are unpaid.

Water Company shall not be obligated to provide service to the property described in this Agreement if construction by third parties of facilities to be deeded to Water Company has not been completed and title accepted by Water Company if such third party facilities are necessary to provide service to the property described in this Agreement.

Water Company shall not be obligated to allow service connections to its system until all membership fees and other charges in effect on the date of application for service have been paid.

Water Company will accept title to the extension at such time as all work which may, in any way, affect the lines constituting the extension has been completed, and any damage to said extension which may exist has been repaired, and Water Company has made final inspection and given its approval to the extension as having been completed in accordance with the Agreement, the Plans and Specifications and other requirements of Water Company.

12. PROCEDURE FOR ACCEPTANCE

Acceptance of title to the extension will be made by motion of the Board of Directors of Water Company. Prior to such acceptance, an executed Bill of Sale (Appendix F) containing the warranties required by this Agreement shall be executed by Developer and any additional owners and delivered to Water Company. There will be no conditional acceptance or acceptance for use and operation.

13. EFFECT OF ACCEPTANCE

Acceptance by Water Company shall cause the extension to be a public system subject to the control, use and operation of Water Company and all regulations, conditions of service, and service charges the Water Company determines to be reasonable and proper, and subject to the laws of the State of Washington.

14. RATES AND CHARGES

The property described in this Agreement shall be subject to all rates and charges established by the Water Company.

15. SUBCONTRACTING

Developer is fully responsible for the acts and omissions of subcontractors and persons employed, directly or indirectly, by subcontractors, as well as the acts and omissions of persons directly employed by Developer.

16. NO ASSIGNMENT WITHOUT WATER COMPANY APPROVAL

Developer's rights and responsibilities arising out of this Agreement are not assignable unless Water Company's prior consent is obtained. Written documents, as required by Water Company, of any Water Company approved assignment shall be filed with Water Company by the Developer at the time of any assignment.

17. GENERAL PROVISIONS, TECHNICAL DETAILS, AND SPECIFICATIONS

The Water Company Development Standards, Sections I, II, III and IV, as currently adopted or hereafter amended, are incorporated herein by this reference.

18. REMEDIES AVAILABLE TO THE WATER COMPANY

In the event Developer fails to pay any of the extension fees and charges and fines referenced herein when due as determined by Water Company, the charge or fine shall then be delinquent and shall accrue interest at the highest legal rate per annum until paid. In addition to any other remedies available to Water Company, Water Company shall be entitled to file a lien against the real property referenced herein in the event of nonpayment and to foreclose such lien pursuant to RCW 56.16.100-110 and RCW 57.08.080-090, as revised or amended.

19. NOTICE

Any notice required by this Agreement to be given by Water Company to Developer shall be given as follows:

Name: _____ Phone: _____

Address: _____

20. COMPLETE AGREEMENT

This Agreement, and the Plan(s) approved by Water Company constitutes the entire Agreement between Developer and Water Company with respect to the rights and responsibilities of both parties in regard to project referred to herein. For purposes of identification, this Agreement shall be assigned a number by the Water Company, which number shall be endorsed on the first page of the Agreement. This Agreement may be changed in writing only upon mutual agreement of the Directors of the Water Company and Developer.

ACCEPTANCE OF THIS APPLICATION BY THE WATER COMPANY CONSTITUTES A CONTRACT WITH THE APPLICANT, THE TERMS OF WHICH ARE EACH PARAGRAPH OF THIS AGREEMENT, THE WATER COMPANY DEVELOPMENT STANDARDS, AND THE EXTENSION DESIGN DRAWINGS APPROVED BY THE WATER COMPANY.

Dated this _____ day of _____, 20_____

By _____
Owner

Development Name & Parcel # _____

STATE OF WASHINGTON }
 } ss
COUNTY OF _____ }

I certify that I know or have satisfactory evidence that _____
signed this instrument and acknowledge it to be _____ free and voluntary act for
the uses and purposes mentioned in the instrument.

Dated: _____

NOTARY PUBLIC in and for the
State of Washington

My Commission Expires: _____

Mt. View-Edgewood Water Company

THE FOREGOING APPLICATION OF _____

Accepted this _____ day of _____, 20_____

MT-VIEW EDGEWOOD WATER COMPANY

BY _____
It's General Manager

STATE OF WASHINGTON }
 } ss
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 signed this instrument, on oath stated that he was authorized to execute said instrument and acknowledged it as the General Manager of Mt. View – Edgewood Water Company, a private corporation, to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

DATED: _____

NOTARY PUBLIC in and for the
State of Washington

My Commission Expires: _____

BILL OF SALE

THE UNDERSIGNED hereby conveys and transfers to MT. VIEW-EDGEWOOD WATER COMPANY, INC; the following described property:

Parcel Number(s):

This conveyance is made in consideration of the Company's agreement to provide routine maintenance of said property and to provide water services pursuant to the Company's regulations, which may be amended from time to time.

The undersigned and its successors and assigns covenants and agrees to and with the Company, its successors and assigns, that the undersigned is the owner of said property and had good right and authority to sell the same and that it will, and does, hereby warrant and agree to defend the sale of said property to the Company, its successors and assigns, against all and every person or persons whomsoever lawfully claiming or to claim the same.

The undersigned further guarantees that the property is fit for purposes intended, i.e., as for use as a water distribution system including distribution and supply lines adequate for the service intended and has been constructed in accordance with the conditions and standards of the Company.

The undersigned covenants and agrees with the Company to replace, repair and correct any defect in work or materials in respect to the personal property subject to this Bill of Sale arising during a period of two (2) years from date hereof, without cost to the Company.

DEVELOPER: _____
Company Name

Owner

Title

Date

ACCEPTED: _____
General Manager Date

MT. VIEW – EDGEWOOD WATER COMPANY ASSIGNMENT OF ACCOUNT

I/We hereby establish our Assignment of Account in favor of the Mt. View-Edgewood Water Company in the amount of \$_____. This Assignment of Account is issued in connection with construction of the project known as _____ located at _____ to guarantee correction of defects in labor and/or materials and perform maintenance.

It is understood that the nature and extent of the water system improvements are defined by the approved plans, and conditions contained in the Mt. View-Edgewood Water Company Development Standards for Water Main Extensions and/or Development Standards for Fire Hydrants.

If, in the determination of the General Manager the above-referenced improvements are not free from defect or does not perform as required by the approved plans, conditions, and applicable standards at the above location for two (2) years from the date of acceptance of the system and transfer of title, no later than **two years**, Columbia Bank agrees to pay to the Mt. View-Edgewood Water Company the sum of \$_____, or such amount as required by the Mt. View-Edgewood Water Company to complete or repair said project in accordance with approved plans, conditions, and applicable standards. Payment shall be made within five (5) days of receipt of written request from the Mt. View-Edgewood Water Company.

This Assignment of Account shall not expire until released in writing by the Mt. View-Edgewood Water Company, which release shall be provided upon request when the required improvements have been completed as provided above.

_____ Date	By: _____ (to be signed by authorized representative of lending institution)
_____ Bank Name	_____ Name (Please Print)
<u>Milton-Edgewood</u> Bank Branch	_____ Title
_____ Account Number	_____ Address
_____ Account Depositor	_____ City, State, Zip

Mt. View - Edgewood Water Company

DEVELOPER EXTENSION CHECKLIST

Name of Project _____ Project # _____

Developer/Owner _____

Contact Person _____ Phone _____

Engineer _____ Phone _____

Contractor _____ Phone _____

Location _____

Residential Multi-Family Commercial Mixed Use

A. Water Availability Certificate:

Date Issued _____

B. Developer Extension Agreement (DEA): (Included within the “Mt.View-Edgewood Water Company Development Standards for Water Main Extension” manual).

1. Submit Full Size Plat or Site Map 1”+50’ With Contours - Date _____

2. Calculate Inspection/Sampling Fee Deposit \$ _____

3. Submit Inspection/Sampling Fee Deposit - Date _____ \$ _____

4. Submit Developer Extension Agreement - Date _____

5. Off-Site Requirements _____

6. Execute Developer Extension Agreement - Date _____

C. Design /Design Review:

1. Pre-Design Meeting to Discuss Requirements - Date _____
2. Submit Plan Review Fee - Date _____ Amount \$ _____
3. Submit Scale Map 1”+50’ of Final Lot Layout - Date _____
4. Submit Contour Map with 5’ or Less Intervals - Date _____
5. Submit Two Copies of Preliminary Plan - Date _____
6. Submit Three Copies of Final Plan for Approval - Date _____
7. Plan Approval; Return One Stamped Copy - Date _____
8. Approval of Submittals - Date _____

D. Required Prior to Pre-Construction Meeting:

1. Insurance Certificate Submitted - Date _____
2. Contractor’s State of WA License and Registration Submitted - Date _____
3. Right-of-Way Permit Issued - Date _____
4. All Easements Executed, Recorded and Delivered - Date _____
5. Approval of Plans by Fire Marshal - Date _____

E. Required Prior to Construction:

1. Sections A, B, C, & D Completed - Date _____
2. Pre-Construction Meeting Held - Date _____
3. Notify Water Company One Week Prior to Start of Construction - Date _____
4. Construction Stakes in Place - Date _____

F. Required Prior to Acceptance of Project:

1. Pressure Test Completed/Passed - Date _____
2. Water Quality Samples Passed - Date _____
3. Final Construction Punch List Completed - Date _____
4. Submit Construction Costs to Water Company - Date _____
5. Prepare Bill of Sale - Date _____
6. Executed Bill of Sale Submitted to Water Company - Date _____
7. Submit Copy of Recorded Plat - Date _____
8. Submit Final Construction As-Built Drawings and CAD File - Date _____
9. Post Two (2) Year Assignment of Account - Date _____
10. Reconcile Fee Deposit to Final Costs - Date _____
11. Final Bill Paid - Amount \$ _____ - Date _____
12. Approval and Acceptance of Construction/Project - Date _____

G. Required Prior to Release of Assignment of Account:

1. Final Inspection Two Years from Project Acceptance - Date _____
2. Contractor Notified of Necessary Repairs and/or Restoration - Date _____
3. Completion of Repairs/Restoration - Date _____
4. Release of Assignment of Account - Date _____

Mt. View-Edgewood Water Company

When recorded please return to:

MT. VIEW-EDGEWOOD WATER COMPANY
11610 32ND STREET EAST
EDGEWOOD, WA 98372

EASEMENT FOR WATER MAIN

Grantor: Legal Owner Name(s)

Address: Site Address

Grantee: Mt. View-Edgewood Water Company

Description of easement as shown in Exhibit A attached hereto and by this reference made a part hereof. Parcel # (INSERT) located in the XX 1/4 of the XX 1/4 of Section XX, Township 20 North, Range 4 East, in Pierce County, Washington.

Legal Owner Name(s) (Grantor), for itself, its successors and assigns, for a valuable consideration the receipt and sufficiency whereof is hereby acknowledged, hereby dedicates, conveys and grants unto the Mt. View-Edgewood Water Company, Inc (Grantee), its successors and assigns, a personal Easement for ingress, egress and utilities under, through and across the property described above.

That said GRANTEE shall have the right without prior institution of any suit or proceeding at law, at times as may be necessary, to enter upon said property and adjoining successors to install, construct, renew, operate and maintain mains and necessary facilities and other equipment for the purposes of serving the property and other properties with water and other utilities service.

Also, the GRANTOR grants to the GRANTEE and to those acting under and for the GRANTEE the use of such additional area immediately adjacent to the above easement as shall be required for the construction of this water pipeline or the lines in the easement. Such additional area is to be held to a minimum necessary for that purpose. Immediately after the completion of the construction and installation or any subsequent entry upon the easement, the GRANTEE shall restore the premises as near as may be to the condition immediately before such construction or entry.

The GRANTOR covenants that access shall not be blocked, that the grade shall not be changed, that no permanent structure shall be erected and no large trees or shrubs shall be planted in the

Mt. View-Edgewood Water Company

area of ground for which the easement in favor of the MT. VIEW-EDGEWOOD WATER COMPANY, INC. has been provided herein.

The GRANTOR hereby agrees to replace at the GRANTOR'S cost, any paving, curbing, concrete, retaining walls, railing, fencing, landscaping or other objects placed in the easement should any repair and/or maintenance be necessary of existing water main and necessary facilities and other equipment owned by Mt. View-Edgewood Water Company, Inc. and/or its successors or heirs.

This easement and the covenants herein shall be covenants running with the land and shall be binding on the successors, heirs and assigns of both parties hereto.

GRANTOR warrants that the GRANTOR has good title to the above property and warrants the GRANTEE title to the easement conveyed herein.

GRANTOR (S): **Name**

Name

(Name)

(Name)

STATE OF WASHINGTON

COUNTY OF PIERCE

On this _____ day of _____, 20XX, before me the undersigned, a Notary Public in and for the State of Washington, duly commissioned and sworn, personally appeared:

Legal Owner Name(s), to be known to be the individual or individuals described in and who executed the within and foregoing instrument, and acknowledge he (she or they) signed the same as is his (her or their) free and voluntary act and deed, for the uses and purposes therein mentioned.

WITNESS my hand and official seal the day and year first above written.

NOTARY PUBLIC in and for the State of
Washington, residing at,

My Commission expires: _____

SECTION III
GENERAL STANDARDS
FOR
WATER MAIN EXTENSIONS
AND
FIRE HYDRANTS

1. OBJECTIVE

Section III – General Standards for Water Main Extensions and Fire Hydrants is intended to present information and provide the minimum standards required by Mt. View – Edgewood Water Company (MTVE) for constructed water main extensions and other improvements which are to be acquired and operated by the Water Company.

2. GENERAL NOTES

Detailed plans shall be submitted for MTVE's review that delineates the locations, size, and type of the proposed water system development and points of connection.

Project plans must have a horizontal scale of not more than fifty (50) feet to the inch and a vertical scale of not more than five (5) feet to the inch. Plan views must be drawn to a corresponding horizontal scale. Plans must show:

- A. Locations of streets, right-of-ways, existing utilities and water system facilities.
- B. Ground surface, pipe type and size, and water valves and hydrants stationing.
- C. All known existing structures, both above and below ground, which might interfere with the proposed construction, particularly sewer lines, gas lines, storm drains, overhead and underground power lines, telephone lines, and fiber optics.

Computations and other data used for design of the water system shall be submitted to MTVE for approval.

The water system facilities shall be constructed in conformance with the 2012 Standard Specifications for Road, Bridge, and Municipal Construction (M41-10) and current amendments thereto, State of Washington, revised as to form to make reference to Local Governments and as directed by MTVE's requirements and Development Standards.

Material and installation specifications shall contain appropriate requirements that have been established by the industry in its technical publications, such as ASTM, AWWA, WPCF, and APWA standards. Requirements shall be set forth in the specifications for the pipe and methods of bedding and backfilling so as not to damage the pipe or its joints.

The location of the water mains, valves, hydrants, and principal fittings including modifications will be staked out by the Developer. Pipes shall be laid closely to within 0.5 feet of specified grade and alignment. No deviation shall be made from the required line or grade. The developer shall verify and protect all underground and surface utilities encountered during the progress of this work.

Except as otherwise noted herein, all work shall be accomplished as recommended in applicable American Water Works Association (AWWA) Specifications, and according to the recommendations of the manufacturer of the material or equipment concerned.

The method of making joints and the materials used shall be included in the project specifications. Joint specifications shall meet the requirements that have been established by appropriate technical organizations such as ASTM, AWWA, WPCF, and APWA.

Before acceptance of the water system by MTVE, all pipes, assemblies, and other appurtenances shall be cleaned of all debris and foreign material. A 2 lb. per cu/ft foam “swab” shall be used after completed assembly to clean the entire pipe, and to ensure the water main is free of obstructions. After all other work 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 for a new roadway consistent with the original section.

Prior to final inspection, all pipelines shall be “swabbed”, disinfected, pressure tested, flushed, and pass water quality tests as described below. In addition, the Developer Extension Checklist must be completed.

The Developer shall be required upon completion of the work and prior to acceptance by the MTVE, to furnish MTVE with an acceptable guarantee in the form of an Assignment of Account held at MTVE’s bank covering all material and workmanship for a period of two (2) years after the date of final acceptance and shall make all necessary repairs during that period at his own expense, if such repairs are necessitated as the result of furnishing poor materials and/or workmanship. The Developer shall obtain warranties from the contractors, subcontractors and suppliers of material or equipment where such warranties are required and shall deliver copies to MTVE upon completion of the work.

3. GENERAL REQUIREMENTS

- A. All work and materials shall be in complete accordance with the standards and conditions of MTVE, City of Edgewood, Washington State Department of Health, AWWA, and the American Public Works Association.
- B. Developer shall notify MTVE and receive approval prior to any water shut-off or turn-on affecting the water system a minimum of **48 hours** in advance. **Developer shall not operate any system valves.** Shut-offs are not allowed on Fridays, Federal Holidays, or the day prior to Federal Holidays.
- C. Developer shall investigate and locate all buried utilities or obstructions in the construction area prior to construction of the water main extension. Developer shall coordinate with MTVE, Gas Company, Telephone Company, Power Company, Fiber Optics, City of Edgewood Public Works, and all other affected utilities for field location of the respective existing facilities.

- D. Developer shall call Utilities Underground Location Center, two (2) business days prior to construction for aid in locating any existing underground utilities, as applicable.
- E. All water services shall end within road right-of-way or easements unless otherwise detailed on the approved plans.
- F. Provide thrust blocking at all fittings and bends in accordance with MTVE standards and conditions.
- G. Provide anchor blocking at all up-thrust vertical bends in accordance with MTVE standards and conditions.
- H. Provide bends in field to suit construction and in accordance with pipe manufacturer's recommendations so as not to exceed 50% of the allowable deflection at pipe joints.
- I. All valve marker posts shall be painted blue and marked with the number of valves being referenced.
- J. The constructed water system will not be accepted unless the Plans have been approved by MTVE and until proof of satisfactory installation, hydrostatic pressure test, and disinfection report are received by MTVE. The Developer Checklist shall also be completed prior to acceptance.
- K. Prior to any work being performed, the Developer shall contact MTVE to set forth the proposed work schedule.
- L. Developer shall receive approval from MTVE for materials to be used prior to ordering the materials.**
- M. Cut-in connections shall not be made on Fridays, Federal Holidays, the day prior to Federal Holidays, or weekends. A minimum of 48 hours notice to MTVE and affected customers is required prior to any cut-in connection. Tapping tees, tapping saddles, and tapping valves (if allowed) shall be pressure tested prior to making tap to existing mains.
- N. Prior to construction Developer shall notify MTVE for a pre-construction meeting.
- O. Road restoration shall be per City of Edgewood standards. Developer shall become familiar with all conditions of required permits, and shall adhere to all conditions and requirements. The use of equipment with rubber tires or tracks is recommended on any paved or concrete surface. **Damage to the road surface**

- (public or private) will require rebuilding or replacement from logical seam to logical seam.** The Cities inspector will determine the extent of replacement.
- P. All water mains shall be no more than 4’-0” from finished grade to the bottom of the main.
- Q. Fire hydrants shall be spaced per East Pierce Fire and Rescue and City of Edgewood standards.
- R. All materials shall be new, clean, and undamaged.
- S. Work shall be done only by developers experienced in laying water mains.
- T. Mains shall be laid only in dedicated right of ways or in easements which have been granted to MTVE. A street right of way is normally not considered dedicated until the plat which created it has been filed with the County Auditor.
- U. Meter Setters shall be installed as noted on the approved plan set.
- V. All new construction shall comply with MTVE’s Cross Connection Control Program.
- W. All existing and new utilities, storm, etc. shall maintain a minimum clearance of 2’-0” over, 1’-0” below, and 5’-0” on the sides the water main.

4. MATERIALS

A. Ductile Iron Water Mains and Fittings.

Water mains to be installed shall be Class 52 Ductile iron pipe manufactured by **Pacific States Pipe** or **U.S. Pipe** for all sizes. All pipes shall be capped at the factory with plastic caps and shipped to the job site with the caps intact. The contractor shall be held responsible to maintain the pipe caps until the pipe is placed in the ditch.

Any dirty pipe or pipe shipped without caps should be refused by the Developer/Contractor or at a minimum be pressure washed, “swabbed” with chlorine, and re-inspected. A passing HPC test (count less than 20) is required prior to acceptance of the project by MTVE. Dirty or dusty pipe will fail HPC tests.

The ductile iron pipe shall conform to ANSI Specification A21.51-1976, or AWWA Specification C151-76, and current amendments thereto. Grade of iron shall be a minimum of 60-42-10. The pipe shall be cement lined in accordance with AWWA C104 and the exterior shall be coated with coal tar varnish. Each length shall be plainly marked with the manufacturer’s identification, year case, thickness, class of pipe and weight.

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All pipes shall be carefully checked on delivery, as well as before placing in the trench. Pipe shall be carefully bedded per Standard Detail IV-1, joined and protected.

A 2 lb. per cu/ft foam “swab” complete with rear polyurethane drive seal shall be inserted into the first pipe section and remain until construction is complete. This “swab” shall be used to clean the entire pipeline as described later on in this section.

Type of joint shall be mechanical joint or push-on type, employing a single gasket, such as “Tyton,” except where otherwise calling for flanged ends. Bolts furnished for mechanical joint pipe and fittings shall be high strength cast iron, with a minimum tensile strength of 50,000 psi.

All pipes shall be joined by the manufacturer’s standard coupling, be all of one manufacturer, and be carefully installed in complete compliance with the manufacturer’s recommendation.

Joints shall be “made up” in accordance with the manufacturer’s recommendations. Standard joint materials, including rubber ring gaskets, shall be furnished with the pipe. Material shall be suitable for the specified pipe size and pressures.

The pipe and fittings shall be inspected by the Developer/Contractor for defects before installation. All lumps, blisters and excess coal tar coating shall be removed from the bell and spigot end of each pipe, and the outside of the spigot and the inside of the bell shall be wire-brushed and wiped clean and dry, and free from oil and grease before the pipe is laid.

Every precaution shall be taken to prevent foreign material from entering the pipe while it is being placed in the line. After placing a length of pipe in the trench, the spigot end shall be centered in the bell and pipe, forced home and brought to correct line and grade. The pipe shall be secured in place with select backfill tamped under it. Precaution shall be taken to prevent dirt from entering the joint space. At times when pipe installation is not in progress, the open ends of pipe shall be closed by a water-tight plug. If water is in the trench when work resumes, the seal shall remain in place until the trench is pumped completely dry. No pipe shall be laid in water or when trench conditions are unsuitable.

The new pipe shall be installed as close as possible to the tie-in point to the existing water line and not exceed ten (10) feet.

The cutting of pipe for inserting fittings or closure pieces shall be done in a neat and workmanlike manner, without damage to the pipe or cement lining, and so as to leave a smooth end at right angles to the axis of the pipe. All cuttings shall be removed from the pipe prior to installation. Pipe shall be laid with bell ends facing in the direction of the laying, unless directed otherwise by MTVE. Wherever it is necessary to deflect pipe from a straight line, the amount of deflection allowed shall not exceed pipe manufacturer’s recommendations for mechanical and “Tyton” joints.

For connection of “Tyton” joints, the joint make-up shall be done according to manufacturer’s recommendations, with special care used in cleaning gasket seats to prevent any dirt or sand from getting between the gasket and pipe. Lubricant to be used on the gasket shall be NSF approved, non-toxic, and free from contamination. When a pipe length is cut, the outer edge of the cut shall be beveled to the manufacturer’s specification to prevent damage to the gasket during joining. All cuttings shall be removed from the pipe prior to installation.

All fittings shall be cement-lined ductile iron and conform to the latest version of AWWA C104 or AWWA C153. Flange faces shall be machined to a flat surface with a serrated finish in accordance with AWWA C207.

Bolt kits, M.J. kits, and restraining kits shall be manufactured in the U.S.A.; **import is not allowed**. All bolted connections shall be tightened to the manufacturer’s specification using a **torque wrench**.

Ductile Iron MJ Sleeves shall be the only method of joining two plain end pipes together.

Valves, fittings, plugs and caps shall be set and jointed to pipe in the manner as required.

Fittings shall be adequately “blocked” with poured-in-place concrete, or concrete block at the discretion of MTVE, 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 “swabbing” and applying the pressure test. The concrete thrust blocks must be in place before beginning the “swabbing” and 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.

All of the new piping, valves and blocking shall have been installed, “swabbed”, disinfected, and tested up to the point of tying into existing lines before the tie-in is made. All required tie-in parts shall be in full readiness as described in section 6 below prior to starting the tie-in.

HDPE Water Mains and Fittings.

High density polyethylene (HDPE) pipe and fittings shall be manufactured in accordance with the following standards

ASTM D3035 – ½ in through 24-in pipe

ASTM F714 – 3-in through 54-in pipe

AWWA C901 – 1/2 In. (130mm) through 3 In. (76 mm) pipe and tubing

AWWA C906 – 4 In. (100 mm) through 65 In (1,600 mm) pipe and fabricated fittings

ASTM D3261 – butt fusion fittings, saddles and flange adapters

ASTM F1055 – electrofusion couplings and saddles.

ASTM F2206 – fabricated fittings

FUSION TECHNICIAN REQUIREMENTS

Each Fusion Technician shall be separately qualified to make each type and size of fusion joint in accordance with ASTM F1290 and/or F2620. Fusion joint types are butt fusion, saddle fusion and electrofusion. Qualification to make one type or size of fusion joint shall not qualify a Fusion Technician to make a different type or size of fusion joint.

Pipe and fitting suppliers shall provide a two (2) year warranty covering defects in product material and workmanship. A successful pressure test or pressure leak test prior to the expiration of the warranty period shall not relieve the supplier of warranty responsibility for the full warranty term.

Fusion providers shall provide a two (2) year warranty from the date of installation acceptance covering defects in fusion joining workmanship that shall provide for remaking defective butt fusion, saddle fusion or electrofusion joints. A successful pressure test or pressure leak test prior to the expiration of the warranty period shall not relieve the installer of warranty responsibility for the full warranty term.

SUBMITTALS

The following information shall be submitted by pipe and fitting suppliers:

- a. Name of the pipe manufacturer and a list of the piping and quantities to be provided by manufacturer.
- b. Name(s) of fitting manufacturer(s) and lists of fittings and quantities to be provided by manufacturer.
- c. Pipe and fitting product data indicating conformance with this specification, applicable standards, and warranty provisions, including written documentation regarding any intended variance from this specification and applicable standards.
- d. At the time of shipment, the supplier shall provide certified documentation of pipe and fitting conformance with this specification and applicable pipe and fitting standards specified herein.

The following information shall be submitted by Fusion providers.

- a. Documentation that each Fusion Technician has met requirements for joining proficiency for each type of fusion joint performed by the Fusion Technician under this specification.
- b. Documentation of conformance with this specification and applicable standards, including written documentation regarding any intended variance from this specification and applicable standards. This will include fusion joint warranty information and recommended project specific fusion parameters, including criteria logged and recorded by data logger.
- c. The following AS-RECORDED DATA is required from the Contractor and/or Fusion Provider:

- 1) Fusion reports for each fusion joint performed on the project, including joints that were rejected. Submittals of the Fusion Technician's joint reports are required as requested by the Owner or Engineer. Specific requirements of the Fusion Technician's joint report shall include:
 - (a) Pipe or fitting size and DR or pressure class rating
 - (b) Fusion equipment size and identification
 - (c) Fusion Technician Identification
 - (d) Job Identification Number
 - (e) Fusion Number
 - (f) Fusion joining parameters
 - (g) Ambient Temperature

PIPE AND FITTINGS

PE4710 material (compound) shall conform to material requirements specified in AWWA C901 or AWWA C906 as applicable for the pipe or fitting. PE4710 material shall meet the requirements of ASTM D3350 and shall meet or exceed a cell classification of 445574 per ASTM D3350.

PE4710 material compound shall have a hydrostatic design stress (HDS) rating for water at 73°F (23°C) of not less than 1000 psi that shall be listed in PPI TR-4 in the name of the pipe manufacturer.

PE4710 material compound shall have a hydrostatic design basis (HDB) rating at 140°F (60°C) of not less than 1000 psi that shall be listed in PPI TR-4 in the name of the pipe manufacturer.

PE4710 pipe and fitting material compound in PE4710 pipe and fittings shall contain color and ultraviolet (UV) stabilizer meeting the requirements of Code C or E per ASTM D3350. Code C material shall contain 2 to 3 percent carbon black to provide indefinite protection against UV degradation when material from the pipe is tested in accordance with ASTM D1603 or ASTM D4218. Code E material used for coextruded OD color stripes or a coextruded ID color layer shall contain sufficient UV stabilizer to protect the pipe against UV degradation for at least 24 months of unprotected outdoor exposure. Coextruded color PE compound material shall be PE4710 pipe material compound, varying only by color and UV stabilizer.

Qualification for potable water service. PE4710 compounds shall be tested and certified as suitable for use with potable water in accordance with requirements that are no less restrictive than the applicable requirements in NSF/ANSI 61.

PE4710 pipe

Nominal straight lengths of 3 inch and larger pipe shall be 40 ft. or 50 ft.

Nominal coil lengths of 4-inch and smaller pipe shall be 500 ft. Longer or shorter coils such as 800 feet for 4-inch pipe, 1000 feet for 3-inch pipe, or 2000 feet for 2 inch or smaller pipe shall be acceptable.

Pipe shall be black. Coextruded OD blue stripes shall be an acceptable option.

Pipe shall be permanently marked using heated indent printing including:

- a. Nominal size and sizing system, e.g., IPS or DIPS
- b. DR or SDR
- c. Standard Designation, AWWA C901 or AWWA C906, material designation, and pressure rating or pressure class for water at 73°F.
 - 1) Marking the Standard Designation on the pipe shall serve as the manufacturer's certification that the pipe has been manufactured, sampled and tested and has been found to comply with the requirements of the standard.
 - 2) The AWWA C901 or C906 pipe pressure class for water at 73°F shall be "PE4710 PCXXX" where XXX = pressure class in psi.
- d. NSF-61 or NSFpw mark certifying suitability for potable water service
- e. Extrusion production-record code

PE4710 fittings

PE4710 butt fusion, saddle fusion, electrofusion and fabricated fittings shall be manufactured from PE4710 material (compound) in accordance with this specification.

PE4710 fittings shall comply with ASTM D3261 for molded butt fusion and saddle fusion fittings, flange adapters and MJ adapters, or shall comply with AWWA C906 for fabricated butt fusion fittings, or shall comply with ASTM F1055 for electrofusion fittings.

PE4710 fittings shall comply with the marking requirements of ASTM D3261 for molded butt and saddle fusion fittings, flange adapters and MJ adapters or shall comply with the marking requirements of AWWA C906 for fabricated butt fusion fittings, or shall comply with the marking requirements of ASTM F1055 for electrofusion fittings.

- a. Marking shall include the NSF-61 or NSFpw mark verifying suitability for potable water service.

PE4710 fittings shall have pressure class ratings not less than the pressure class rating of the pipe to which they are joined.

FUSION JOINTS

Unless otherwise specified, PE4710 pipe and fittings shall be assembled in the field with butt fusion, saddle fusion or electrofusion joints. ASTM F2620 and the pipe manufacturer's recommended procedure shall be observed for butt fusion and saddle fusion joints. ASTM F1290 and the electrofusion fitting manufacturer's recommended joining procedure shall be observed for electrofusion joints.

Field butt fusion, saddle fusion and electrofusion joints shall be made by Fusion Technicians that are qualified in accordance with this specification to make the specific fusion joint type.

Field fusion joints shall be recorded and documented in accordance with this specification.

MECHANICAL FITTINGS

Acceptable mechanical fittings for use with PE4710 pipe and fittings shall be mechanical fittings that are qualified by the mechanical fitting manufacturer for use with HDPE pipe and fittings.

Mechanical fittings for use with HDPE pipe shall provide restraint against longitudinal separation that is inherent to the design of the joint. Mechanical joints that do not provide restraint against pull-out or push-off are prohibited.

Mechanical connections to non-HDPE devices and appurtenances shall be by bolted flange adapter or MJ adapter. Flange adapter and MJ adapter connections shall be assembled, installed and tightened in accordance with flange adapter or MJ adapter manufacturer's instructions. Flange bolt tightening shall be in accordance with PPI TN-38.

GASKETED, PUSH-ON FITTINGS

Gasketed push-on fittings shall be fitted with external mechanical restraints that span across the joint and are assembled in accordance with restraint manufacturer's instructions.

- a. Thrust blocking does not provide acceptable restraint and is prohibited.
- b. Where plain-end PE4710 pipe is assembled with push-on fittings, the PE4710 pipe end shall be fitted with electrofusion restraints so that external mechanical restraint may be secured to the PE4710 pipe.

Where PE4710 pipe is connected to gasketed mechanical joint fittings or appurtenances, the connection shall be made by butt fusing a PE4710 MJ Adapter to the PE4710 pipe and connecting the PE4710 MJ Adapter to the mechanical joint fitting or appurtenance.

SLEEVE-TYPE COUPLINGS

Sleeve-type mechanical couplings shall be manufactured for use with HDPE pipe, and shall be restrained as indicated in these specifications. Unrestrained sleeve-type couplings are prohibited.

EXPANSION AND FLEXIBLE COUPLINGS

Expansion-type mechanical couplings are prohibited.

CONNECTION HARDWARE

Bolts and nuts for buried service shall be made of non-corrosive, high-strength, low-alloy steel having the characteristics specified in ANSI/AWWA C111/A21.11, regardless of any other protective coating.

DELIVERY AND OFF-LOADING

All piping shall be bundled or packaged for transportation to the site.

Before off-loading, pipe shall be inspected for damage. Any pipe damaged in shipment shall be assessed and either accepted or rejected as directed by MTVE or Engineer, and the pipe supplier shall be notified of rejected pipe within 7 days of delivery at the site. Rejected pipe shall be quarantined for disposition. Each pipe shipment shall be checked for quantity and proper pipe size, color and type.

Pipe shall be off-loaded and handled in accordance with the pipe manufacturer's instructions and AWWA M55.

HANDLING AND STORAGE

Pipe lengths should be placed and stored on level ground. Pipe should be stored at the job site in the unit packaging provided by the manufacturer. The interior of the pipe, as well as all end surfaces, should be kept free from dirt and foreign matter.

Pipe shall be handled and supported with the use of woven fiber pipe slings or approved equal. Care shall be exercised when handling the pipe to not cut, gouge, scratch or otherwise abrade the piping in any way. Use of hooks, chains, wire rope or any other handling device which creates the opportunity to damage the surface of the pipe is strictly prohibited.

Covering or shading of PE4710 pipe and fittings against exposure to ultraviolet light from sunlight is not required.

FUSION PROCESS

Butt and saddle fusion of PE4710 pipe and fittings shall be in accordance with ASTM F2620 and the manufacturer's recommended joining procedure.

Electrofusion of PE4710 pipe and fittings shall be performed in accordance with ASTM F1290 and the electrofusion fitting manufacturer's recommended procedure.

PE4710 pipe and fittings shall be fused by qualified fusion technicians, as documented by the fusion provider. Training records for qualified fusion technicians shall be available to MTVE upon request.

As each fusion joint is constructed, pressure, time and temperature parameters shall be recorded and logged by an electronic monitoring device (data logger) affixed to the fusion machine. Joint data shall be submitted as part of the As-Recorded information, in accordance with this specification.

Butt fusion machines shall incorporate the following properties, including the following elements:

- a. HEAT PLATE – Heat plates and the non-stick coatings on heating surfaces shall be in good condition without heating surface gouges or scratches. The non-stick coating shall be intact, clean and free of any contamination. Heater controls and temperature indicators shall function properly, and electrical cords and connections shall be in good condition.

The heat plate shall maintain a uniform and consistent temperature on all areas of the heating surfaces on both sides of the heat plate.

- b. CARRIAGE – Carriage shall travel smoothly with no binding at less than 50 psi for hydraulic fusion machines. Clamps shall be in good condition with proper inserts for the pipe size being fused.
- c. GENERAL MACHINE – Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
- d. DATA LOGGER – The current version of the pipe supplier’s recommended and compatible software shall be used. Protective case shall be utilized for the hand held wireless portion of the unit. Data logger operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 120V power source shall be available to extend battery life.

Other equipment specifically required for fusion processes shall include the following:

- e. Pipe rollers shall be used to support pipe to either side of the butt fusion machine and provide for vertical and lateral pipe alignment straight through the butt fusion machine.
- f. A protective enclosure that provides for full machine motion of the clamps, heat plate, fusion assembly and carriage shall be provided for fusion in inclement and/or windy weather. Pipe ends shall be covered or blocked where open pipe ends could allow prevailing winds to blow through the pipe.
- g. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.

JOINT RECORDING

Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine that shall register and/or record the parameters required by the manufacturer and these specifications. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician’s joint report.

Fusion reports for each fusion joint performed on the project, including joints that were rejected. Submittals of the Fusion Technician’s joint reports are required as requested by MTVE and the Engineer. Specific requirements of the Fusion Technician’s joint report shall include:

- (a) Pipe or fitting size and DR or pressure class rating
- (b) Fusion equipment size and identification
- (c) Fusion Technician Identification
- (d) Job Identification Number
- (e) Fusion Number
- (f) Fusion joining parameters

(g) Ambient Temperature

INSTALLATION

The PE4710 pipe and fittings shall be installed such that PE4710 pipe curvature is not less than the minimum bending radius recommended by the pipe manufacturer.

Direct burial installation of PE4710 pressure pipe shall be in accordance with ASTM D2774 and the pipe manufacturer's recommendations.

Installation of PE4710 pipe by horizontal directional drilling shall be in accordance with ASTM F1962 or PPI TR-46 and the pipe manufacturer's recommendations.

Installation of PE4710 pipe by sliplining or insertion within a casing or host pipe shall be in accordance with ASTM F585 and the pipe manufacturer's recommendations.

Tracer Wire – All PE4710 piping shall be installed with a continuous, insulated TW, THW, THWN, or HMWPE insulated copper, 10 gauge or thicker wire for pipeline location purposes by means of an electronic line tracer.

- a. The wires shall be installed along the entire length of the pipe.
- b. Sections of wire shall be spliced together using approved splice caps and waterproof seals. Twisting the wires together is not acceptable.

MAKING CONNECTIONS TO NON-PE4710 PIPING SYSTEMS

Approximate locations for non-PE4710 piping systems are shown on the drawings or detailed in the specifications. Prior to making connections into existing piping systems, the Contractor shall:

- a. Verify the actual field location, size, piping material and service of non-PE4710 piping systems.
- b. Obtain all required non-PE4710 piping manufacturer(s) approved fittings (i.e., saddles, sleeve type couplings, flanges, tees, etc., as shown).
- c. Have on hand pipe stoppers, blind flanges or other devices to seal a valve or appurtenance that fails to seal properly. When applied to pressure rated valves or appurtenances, all such devices shall be pressure rated equal to or greater than the pressure rating of the valve or appurtenance to which they are attached.

Where PE4710 pipe connects in-line to unrestrained gasketed push-on piping, the end of the PE4710 pipe shall be anchored in-line within 10 feet of the connection to restrict longitudinal movement of the PE4710 pipe.

- a. The PE4710 pipe shall be fitted with a PE4710 wall anchor or electrofusion flex restraints.
- b. The PE4710 wall anchor or electrofusion flex restraints shall be encased in reinforced concrete that is sufficient to withstand Poisson effect longitudinal loads in accordance with AWWA M55 In-Line Anchoring.

Unless otherwise approved by MTVE, new piping systems shall be completely assembled and successfully tested prior to making connections to non-PE4710 piping systems.

PIPE SYSTEM CONNECTIONS

Pipe connections shall be installed per applicable standards and regulations, as well as per the connection manufacturer's recommendations and as indicated on the drawings. Pipe connections to structures shall be installed per applicable standards and regulations, as well as per the connection manufacturer's recommendations.

TRACER WIRE TESTING

Upon completion of installation by direct burial, sliplining, directional boring or pipe bursting, the Contractor shall demonstrate that the tracer wire is continuous and unbroken through the entire run of the pipe.

- a. Demonstration shall include full signal conductivity (including splices) when energizing for the entire run in the presence of MTVE inspector.
- b. If the wire is broken, the Contractor shall repair or replace it. Pipeline installation will not be accepted until the tracer wire passes a continuity test.

TAPPING

Tapping shall be performed using standard saddle fusion fittings, electrofusion saddle fittings, or mechanical tapping saddles or sleeves designed for use on HDPE piping. Tapping by threading directly into the PE4710 pipe wall is prohibited.

Branching connections requiring a larger diameter shall be made with saddle fusion branch saddle fittings or mechanical branch connection fittings as specified and indicated on the drawings.

Equipment used for tapping shall be made specifically for tapping HDPE pipe:

- a. Tapping bits shall be slotted "shell" style cutters, specifically made for HDPE pipe. 'Hole saws' made for cutting wood, steel, ductile iron, or other materials are strictly prohibited.
- b. Manually operated or power operated drilling machines may be used.

Taps may be performed while the pipeline is filled with water and under pressure, or when the pipeline is not filled with water and not under pressure.

TESTING

Testing shall comply with most current AWWA and DOH standards.

Segments of the pipe may be tested separately in accordance with most current AWWA and DOH standards.

HYDROSTATIC LEAKAGE TESTING

- a. Hydrostatic leakage testing shall comply with ASTM F2164. Joint leakage and any defective materials and/or workmanship shall be repaired or replaced by the Contractor at no additional cost to the Owner.
- b. Pneumatic (compressed air) leakage testing of PE4710 pressure piping is prohibited.

B. Valves.

All valves larger than twelve (12) inches shall be butterfly valves. All valves twelve (12) inches and smaller shall be gate valves.

(1) Gate Valves

Gate valves shall be Resilient Wedge in accordance with AWWA C509, or C515. The valve shall open to the left (counter clockwise looking at the operating nut) and be equipped with a two (2) inch square operating nut. The valves shall be set with stems vertical. The gate valves shall be manufactured by **Mueller, Clow, Kennedy, U.S. Pipe, or M&H.**

(2) Butterfly Valves

Butterfly valves shall be of the tight-closing rubber seat type with rubber seat either bonded to the body or mechanically retained in the body with no fasteners or retaining hardware in the flowstream. The valves may have rubber seats mechanically affixed to the valve vane. Where threaded fasteners are used, the fasteners shall be retained with a locking wire or equivalent provision to prevent loosening. Rubber seats attached to the valve vane shall be equipped with stainless steel seat ring integral with the body, and the body internal surfaces shall be coated with a two-coat epoxy system to prevent tuberculation buildup which might damage the disc-mounted rubber seat.

No metal-to-metal sealing surfaces shall be permitted. The valves shall be bubble-tight at rated pressures with flow in either direction, and shall be satisfactory for applications involving valve operations after long periods of inactivity. Valve discs shall rotate ninety (90) degrees from the full open position to the right shut position. The valves shall meet the full requirements of AWWA Specification C-504, Class 150B. The valve shall be manufactured by **Mueller, Clow, Kennedy, U.S. Pipe, or M&H.**

(3) Tapping Sleeves and Tapping Valves

The tapping sleeves shall be **Mueller H-615 Mechanical Joint**, furnished complete with joint accessories. Tapping sleeves shall be constructed in two sections for ease of installation and shall be assembled around the main without interrupting service.

Tapping valves shall be **Mueller T-2360** provided with a standard mechanical joint outlet for use with ductile iron pipe and shall have oversized seat rings to permit entry of the tapping machine cutters. In all other respects, the tapping valves shall conform to the gate valves herein specified with regards to operation and materials.

(4) All Valves

All valves with operating nuts located more than 3'-0" below finished grade shall be equipped with extension stems to bring the operating nut to within 3'-0" of the finished grade.

At the top of the extension stem, there shall be a two (2) inch standard operating nut, complete with a centering flange that closely fits the five (5) inch soil pipe encasement of the extension stem. The valve box shall be set in a telescoping fashion around the five (5) inch soil pipe cut to the correct length so no valve box parts are "bottomed out".

All valves shall have an **Adapter Inc Valve Box Adapter II** installed prior to placing the valve box lower section.

Each valve shall be provided with a "940" style adjustable two-piece cast iron valve box of five (5) inches minimum inside diameter. The top section shall be eighteen (18) inches long and have a three (3) inch tall lid. The lower section shall be twenty four (24) inches long and have an eight (8) inch opening on the bottom to fit the **Adapter Inc Valve Box Adapter II**.

Concrete marker posts shall have a three (3) inch minimum square section and a minimum length of thirty-six (36) inches, with beveled edges, and contain at least one (1) three-eighths (3/8) inch diameter bar of reinforcing steel. Markers shall be placed at the edge of the right-of-way opposite the valve, and set so as to leave twelve (12) inches of the post exposed above grade. The exposed portion of the marker posts shall be painted with two (2) coats of Preservative Brand International Blue enamel paint. Distance to referenced valve shall be to the nearest 0.5 foot, and shall be clearly stenciled in black numerals two (2) inches in height.

C. Fire Hydrants.

Standard five and one-quarter (5-1/4) inch MVO fire hydrants are required. Spacing shall conform to East Pierce Fire and Rescue and City of Edgewood regulations.

Pipes connecting hydrants to mains must be at least six (6) inches in diameter and not longer than three (3) feet.

The contractor shall place a sufficient amount of 1-1/4" washed drain rock around the hydrant base to ensure proper drainage of the hydrant barrel. Cover the drain rock with filter fabric prior to final backfill.

All fire hydrants shall be approved by the National Board of Fire Underwriters and conform to AWWA Specification C-502, break-away type, with holding spool, in which the valve will remain closed if the barrel is broken. The hydrant barrel shall have a diameter of not less than seven (7) inches, and the valve diameter shall be not less than five and one-quarter (5-1/4) inches. Each hydrant shall be equipped with two (2) two and

one-half (2-1/2) inch hose ports (National Standard Thread) with caps and chains, and one (1) four and one-half (4-1/2) inch pumper connection (National Standard Thread), with 5" Storz fitting and cap and cable. Each hydrant shall be equipped with a suitable positive acting drain valve and one and one-quarter (1-1/4) inch pentagonal operating nut (counter-clockwise opening). The fire hydrants shall be **Mueller Centurion**, or **Clow Medallion**.

The holding spools between the gate valve and fire hydrant shall be made from six (6) inch Class 52 ductile cast iron pipe. The hydrant and gate valve shall be anchored in place using M.J. Mega Lug kits (domestic manufacture only). Holding spools shall not be longer than three (3) feet.

Two hydrant guard posts (if required) shall be installed and painted for each hydrant assembly.

The hydrants and guard posts shall be painted with two (2) coats of Safety Yellow enamel paint.

An asphalt or concrete thrust pad, 7' x 7' x 6" thick, shall be centered on the hydrant. The top of the thrust pad shall be the same elevation as the Bury Line on the hydrant barrel. The pad shall extend to the roadway, sidewalk or as directed by the inspector and be 7' wide.

Between the time that the hydrant is installed and the completed facility is placed in operation, the hydrant shall at all times be wrapped or covered in a suitable manner to clearly indicate that the hydrant is not in service.

D. Blow-Offs and Air Relief Assemblies.

Dead-end lines are not permitted except where MTVE determines that it would be impractical to extend the line at a future date. Water mains on platted cul-de-sacs shall extend as determined by MTVE to the neighboring property(s) for a future connection. A two (2) inch **Kupferle** Model 78 blow-off assembly or **Automatic Flushing** blow-off must be provided per the detail at all water main ends.

One inch (1) or two (2) inch **APCO**, **Valmatic**, or **Crispin** air and vacuum release valves shall be installed at principal high points in the system per the detail.

The installation of these items shall include connection piping, gate valve, valve box, valve marker and all accessories. All fittings and parts shall be low lead and comply with NSF/ANSI 61, Annex G and NSF/ANSI 372 or the most current version in place at the time of installation.

E. Sample Stations

A minimum of one (1) **Kupferle** Model 88 Sample Station shall be installed for every Development, Water Main Extension or Fire Hydrant installation per the detail. Additionally, sample stations shall be placed every 500' or as MTVE requires. All fittings and parts shall be low lead and comply with NSF/ANSI 61, Annex G and NSF/ANSI 372 or the most current version in place at the time of installation.

F. Water Services

Water service lines shall be 1- inch or 2- inch **CTS Rehau Municipex**, one service per tap. All fittings shall be 110 CTS compression as manufactured by the **Mueller** Company. **Mueller** inserts shall be used. All other water service material shall be brass. All installations shall conform to the detail. All fittings and parts shall be low lead and comply with NSF/ANSI 61, Annex G and NSF/ANSI 372 or the most current version in place at the time of installation.

G. Premises Isolation and Fire Systems

The Premises Isolation Assembly for residential connections shall be a **Wilkins 950XLTUSH** Double Check Valve Assembly (DCVA) unless a hazard is present that is listed on Table 9 of WAC 246-290-490. If a hazard is present then the required Premises Isolation Assembly shall be a **Wilkins 975XL** Reduced Pressure Backflow Assembly (RPBA). All fittings and parts shall be low lead and comply with NSF/ANSI 61, Annex G and NSF/ANSI 372 or the most current version in place at the time of installation.

The Premises Isolation Assembly for non-residential connections (e.g. commercial, industrial, municipal, schools, care facilities, etc) shall be a **Wilkins 975XL** RPBA. The RPBA shall be installed in a Hot Box and be heated to prevent freezing. The property owner shall be responsible for supplying power to the Hot Box and for maintaining the heating equipment, and for damage to the assembly and box.

The Backflow Protection Assembly for a Fire System shall be an RPDA. The bypass meter shall be a Sensus SR11 TPRL reading in Cubic Feet and have a 520 RA MXU U.S. Alt Frequency installed. The RPDA shall be installed in a Hot Box and be heated to prevent freezing. The property owner shall be responsible for supplying power to the Hot Box and for maintaining the heating equipment, and for damage to the assembly and box.

Premises Isolation and Fire System Backflow Assemblies (DCVA, RPBA, and RPDA) shall be installed one (1) foot the customer side of the water meter and within the Right of Way (ROW) or Easement or as detailed on the plans. If space constraints make placement on the ROW impossible, then the assembly may be placed on private property as long as an easement is granted in favor of MTVE prior to installation. The current and all future owners of the property shall allow unlimited access. If access is denied, then water service to the property shall be terminated. No taps are allowed on the service line

between the water meter and the Premises Isolation Assembly. Taps are allowed on the service line four (4) feet beyond the Premises Isolation Assembly.

H. Control Valves and Vaults

The following specification is the minimum standard for Control Valves and Vaults. Refer to the approved plans for any additionally required items.

The valves shall be hydraulically operated globe or angle pattern and manufactured by **Cla-Val** or **Singer Valve**. The inner valve assembly shall be top and bottom guided by means of bearing bushings. The inner valve (diaphragm) assembly shall be the only moving part and shall be securely mounted on a 316 stainless steel stem. The stainless steel stem shall be provided with wrench flats on all valves up to 16-inch for ease of assembly and maintenance. All pressure containing components shall be constructed of ASTM A536-65/45/12 ductile iron. The flanges shall be ANSI Class 150 or as noted on the plans.

The valves shall have a blue protective fusion bonded epoxy coating internally and externally. The protective fusion bonded epoxy coating shall conform to the ANSI/AWWA C116/A21.16 (or most current version) specification.

All valve bonnets shall be accurately located to bodies utilizing locating pins or locating lips. Locating lips are allowed as long as provisions are made to prevent internal and external rust.

Valves 3" and larger shall have a 316 stainless steel seat, bolted or threaded in place. If special tools are required to remove and replace the seat, the Developer shall supply these tools for each valve size to MTVE at no additional cost.

All external fasteners shall be 18/8 stainless steel with 18/8 washers. All sensor and pilot control lines shall be stainless steel braided Teflon with a working pressure of 2500 P.S.I. with stainless steel crimp fittings.

Developer shall provide MTVE a copy of the warranty that specifies the following: the valves shall be covered by a minimum three year warranty against defects in materials and workmanship provided the valve is installed and used in accordance with all applicable instructions; electrical components shall have a one year warranty; the stainless steel seat ring shall be covered by a lifetime replacement warranty.

All vaults shall be a maximum of 48" from finished floor to final grade and be supplied with a 4" drain. The drain shall be plumbed to the nearest storm system. Double traffic-rated aluminum doors shall be included that open to at least 90 degrees from flat and include provisions for a pad lock. All ladders shall comply with the latest L&I and OSHA requirements and include a pull-up hand rail that extends at least 42" above the vault top. Vault walls and ceiling shall be painted white. Vaults shall be located in private easements only.

All vault piping 4-inch and larger shall be flanged Class 52 Ductile Iron with full face gaskets. Piping 2-inch and smaller shall be schedule 80 brass and include unions for easy removal. Ductile Iron piping and fittings shall have two coats of Blue two part **Tnemec** Epoxy applied. Epoxy shall be applied per manufacturer's guidelines.

P.R.V. installations shall include stainless steel 4-inch liquid filled gauges with 3/4" **Mueller** B-20045N shut-offs on the upstream and downstream piping. Also include a minimum 1-inch Inlet Air Release Valve and 1-inch Outlet Combination Valve with **Mueller** B-20045N isolation valves. On main extensions that will need two P.R.V. stations each station shall use a single control valve that has low flow stability (eliminating the need for a smaller, low flow, bypass control valve). Low flow rate shall be 0.5 GPM for 6-inch valves, 1.0 GPM for 8-inch valves, and 5 GPM for 10-inch valves. If an existing P.R.V. station will supply part of the new main extension area it shall be retrofitted to the low rates above and the smaller control valve removed.

All fittings and parts shall be low lead and comply with NSF/ANSI 61, Annex G and NSF/ANSI 372 or the most current version in place at the time of installation.

The Developer shall ensure, at no cost to MTVE, that a factory representative is on-site for start-up service and necessary adjustments.

5. WATER MAIN DISINFECTING, TESTING, AND SAMPLING

All pipelines shall be "swabbed", disinfected, pressure tested and sampled prior to being placed in service.

The Developer shall provide acceptable sample sites, as determined by MTVE, to ensure representative samples are taken throughout the new line. At a minimum the sample sites shall be located every 500 feet and at all pipe ends. Two (2) or more water sample failures shall require sample sited to be located every 200 feet or as directed by MTVE.

The pipeline shall be bedded and 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 "swabbing" and testing. Where permanent blocking is not required, the Developer shall furnish and install temporary blocking.

As soon as the pipeline is adequately secured against movement under pressure, it may be filled by an MTVE employee with water. **Developer shall not operate any system valves.** Satisfactory performance of air valves must be checked while the line is filling.

The Developer shall then clean and flush the pipeline using the 2 lb. per cu/ft foam "swab" complete with rear polyurethane drive seal that was inserted into the first pipe section. Cleaning and flushing shall be accomplished by propelling the "swab" down the pipeline to the exit point with potable water. Flushing shall continue until the water is completely clear. If the water is muddy or has debris in it the Developer may be required

to run additional “swabs” through the entire pipeline. If the cleaning and exit point is through a Fire Hydrant (8” pipeline or smaller) the Developer shall remove the hydrant internal valve assembly to allow passage of the “swab”.

Chlorine for disinfecting shall then be applied, by the Developer, by injecting a 12.5% hypochlorite solution through a corporation stop valve or other injection point at beginning of the main while it is being filled to insure a concentration in the pipe of fifty (50) mg/L. Filling of pipeline shall be at a rate of 100 GPM. **Developer shall not operate any system valves.**

After the desired chlorine concentration has been obtained through the entire section of line, the water in the line shall be left standing for at least forty-eight (48) hours or as directed by the MTVE inspector.

The water main shall be pressure tested per WSDOT/APWA Section 7.09.3(23). Test pressure shall be 150 psi above static pressure but not less than 225 psi and shall be held for one (1) hour. **Prior to testing, the developer must ensure that the curb stops to all sample stations, air releases, and other curb stops as directed by MTVE are closed.** All pumps, gauges, plugs, saddles, corporation stops, miscellaneous hose and piping, and measuring equipment necessary for performing the pressure test shall be furnished, disinfected, installed, and operated by the Developer. Feed water for the test pump shall be from a disinfected barrel or other container so that the actual amount of “makeup” water can be measured periodically during the test period. Feed water shall contain a chlorine dose of fifty (50) mg/L. All tests shall be made with the hydrant auxiliary gate valves open and pressure against the hydrant foot valve. Hydrostatic tests shall be performed on every complete section of water main between two valves, and each valve shall withstand the same test pressure as the pipe with no pressure active in the section of pipe beyond the closed valve.

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 “swabbing”, disinfection, and pressure test shall be re-run at the developer’s expense until a satisfactory test is obtained.

Following the successful pressure test, the line shall be thoroughly flushed and allowed to stand for twenty four (24) hours before the first set of water samples are collected. Twenty four (24) hours later a second set of water samples shall be collected. Flushing is not allowed during these periods.

At the Developers expense, MTVE personal shall collect water samples. Samples shall only be collected Monday through Thursday (excluding Federal holidays and up to two days prior to Federal holidays) so the Developer must plan flushing accordingly. The Developer shall be responsible for supplying all flushing equipment and flushing the new water mains prior to water samples being taken. **Developer shall not operate any system valves.** Disposal of the water shall be the Developer’s responsibility and shall conform to any special requirements and permits mandated by the Department of

Ecology, Department of Health, The City of Edgewood and/or Pierce County Public Works.

Samples must pass Coliform, E coli, fecal coli (Bact-T) tests using the Membrane Filter (MF) test technique and have an HPC count below 20. If the first test fails, the line shall be injected again with chlorine and retested as above. If the line fails a second time the contractor may be directed again to “swab” the line, inject chlorine and test as above.

If, after a second round of testing either the MF or HPC fail, subsequent rounds of testing shall include an additional set of MF and HPC samples 7 days after a passing 48 hour test. Water used after the first test for testing and flushing shall be billed to the Developer at the current rate shown on the MTVE Fee Schedule. The line must not be placed in service until a satisfactory bacteriological report has been received.

If, third, fourth, fifth or sixth sets of testing are required the samples shall be taken at 24 hours, 48 hours, and 7 days intervals. The sample locations shall be reduced to 200 foot intervals.

If, at the end of the sixth round of testing, the pipeline fails the Bact-T and/or HPC requirements, further testing of the pipeline will be terminated and the contractor shall remove the pipeline and all appurtenances from the ground and re-lay a new pipeline using new pipe and appurtenances. All testing shall start over.

Chlorine injection port shall be abandoned after satisfactory water quality results.

6. FINAL CONNECTIONS TO EXISTING WATER MAINS

All pipe, fittings, and other material that will be used for tie-in's shall be “swabbed” and disinfected. Immerse the parts in water containing 50 mg/l chlorine and let stand for forty-eight (48) hours. A chlorine residual of not less than 25 mg/l shall remain in the water after standing 48 hours or the procedure shall be repeated.

Any pipe requiring further cutting, including the existing water main, shall have all cuttings removed and be “swabbed” with chlorine prior to assembly.

7. ACCESS AND CLEARANCES AROUND WATER APPURTENANCES

All new facilities and related appurtenances (Hydrants, Blow-offs, Meters, Valves, Sample Stations, PRV Stations, etc.) shall be accessible from the roadway and not blocked by fencing or any other barrier. Utility pedestals (phone, power, communication, etc.) shall not block the road side of the facility and shall be located a minimum of 36” away from the sides and rear of the facility. All landscaping shall be designed and placed so the mature plant drip line remains at least 24” from the sides and rear of all facilities. No plantings are allowed between the facility and the roadway.

SECTION IV
DEVELOPMENT DETAILS

SECTION IV DEVELOPMENT DETAILS

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FINISHED GRADE
OR SUBGRADE

COMPACTED BACKFILL CONSISTING
OF 5/8" CRUSHED GRAVEL
OR C.D.F. AS DIRECTED

SPECIAL PRECAUTIONS TO
PROTECT PIPE TO THIS LEVEL

HAND-PLACED, COMPACTED
5/8" CRUSHED BACKFILL

WATER MAIN

5/8" CRUSHED
GRAVEL AS NEEDED

UNDISTURBED
EARTH

TRENCH WIDTH

4'-0" MAXIMUM

12"

PIPE O.D.

6" PIPE	=	1'-6"
8" PIPE	=	2'-0"
10" PIPE	=	2'-6"
12" PIPE	=	2'-6"
16" PIPE	=	3'-0"

* TRENCH DAMS TO BE INSTALLED
AS DESIGNED BY ENGINEER.

MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV -1

WATER MAIN
TRENCH SECTION

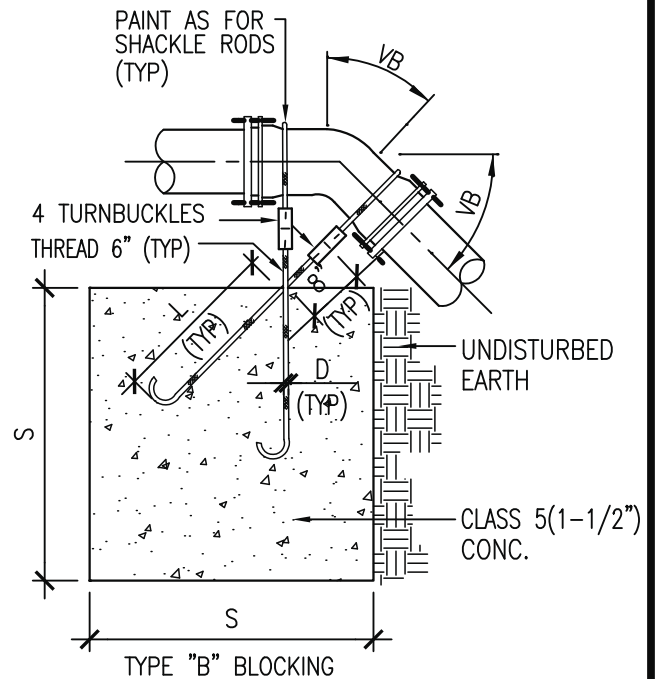
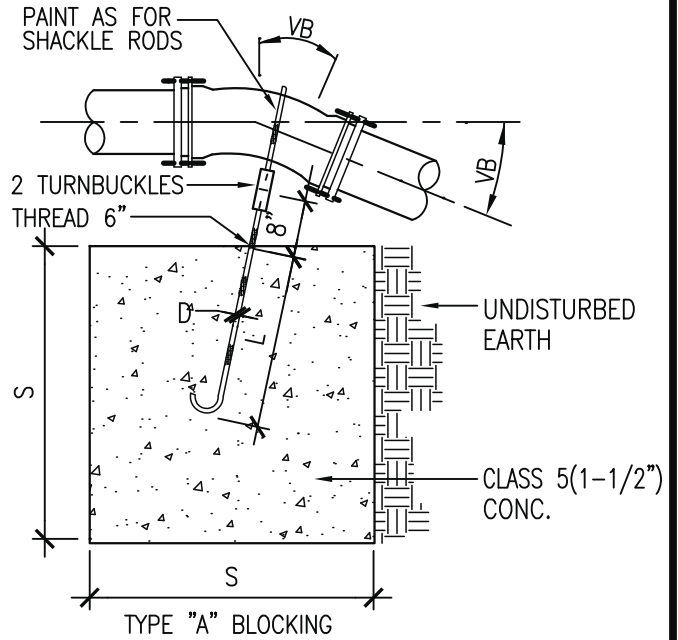
2010\2010928-MVE-WSP-STANDARDS\IV-2\VERTBLK 1=1 3-23-11 RLD

TYPE "A" BLOCKING
FOR 11 1/4°-22 1/2° VERTICAL BENDS

PIPE SIZE NOMINAL DIAMETER - INCHES	TEST PRESSURE PSI	VB VERTICAL BEND DEGREES	NO. OF CU. FT. OF CONC. BLOCKING	S SIDE OF CUBE LIN. FT.	D DIAM. OF SHACKLE RODS (2) INCHES	L DEPTH OF RODS IN CONCRETE LIN. FT.
4"	300	11-1/4	8	2	5/8"	1.5
		22-1/2	11	2.2		2.0
		30	17	2.6		
6"	300	11-1/4	11	2.2	5/8"	2.0
		22-1/2	25	2.9		
		30	41	3.5		
8"	300	11-1/4	16	2.5	5/8"	2.0
		22-1/2	47	3.6		
		30	70	4.1	3/4"	2.5
12"	250	11-1/4	32	3.2	5/8"	2.0
		22-1/2	88	4.5		
		30	132	5.1	7/8"	3.0
16"	225	11-1/4	70	4.1	7/8"	3.0
		22-1/2	184	5.7	1-1/8"	4.0
		30	275	6.5	1-1/4"	
20"	200	11-1/4	91	4.5	7/8"	3.0
		22-1/2	225	6.1	1-1/4"	4.0
		30	330	6.9	1-3/8"	4.5
24"	200	11-1/4	128	5.0	1"	3.5
		22-1/2	320	6.8	1-3/8"	4.5
		30	480	7.9	1-7/8"	5.5

TYPE "B" BLOCKING
FOR - 45° VERTICAL BENDS

		VB		S	D	L
4"	300	45	30	3.1	5/8"	2.0
6"			68	4.1		
8"			123	5.0		
12"	250		232	6.1	3/4"	2.5
16"	225		478	7.8	1-1/8"	4.0
20"	200		560	8.2	1-1/4"	
24"			820	9.4	1-3/8"	4.5



**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV -2**

**VERTICAL
ANCHOR BLOCKING**



THRUST LOADS					
THRUST AT FITTINGS IN POUNDS AT 200 POUNDS PER SQUARE INCH OF WATER					
PIPE DIAMETER	90° BEND	45° BEND	22-1/2° BEND	11-1/4° BEND	DEAD END OR TEE
4"	3,600	2,000	1,000	500	2,600
6"	8,000	4,400	2,300	1,200	5,700
8"	14,300	7,700	4,000	2,000	10,100
10"	22,300	12,100	6,200	3,100	15,800
12"	32,000	17,400	8,900	4,500	22,700
14"	43,600	23,600	12,100	6,100	30,800
16"	57,000	30,800	15,700	7,900	40,300

NOTES:

- ① BLOCKING SHALL BE COMMERCIAL CONCRETE POURED IN PLACE AGAINST UNDISTURBED EARTH. FITTING SHALL BE ISOLATED FROM CONCRETE THRUST BLOCK WITH PLASTIC OR SIMILAR MATERIAL.
- ② TO DETERMINE THE BEARING AREA OF THE THRUST BLOCK IN SQUARE FEET (SF):
 EXAMPLE: 12" - 90° BEND IN SAND AND GRAVEL
 $32,000 \text{ LBS} / 3000 \text{ LB} / \text{S.F.} = 10.7 \text{ S.F. OF AREA}$
- ③ AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZE, PRESSURES AND SOIL CONDITIONS.
- ④ BLOCKING SHALL BE ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATING PRESSURE UNDER ALL CONDITIONS OF SERVICE.

SAFE SOIL BEARING LOADS

FOR HORIZONTAL THRUSTS WHEN THE DEPTH OF COVER OVER THE PIPE EXCEEDS TWO (2) FEET.

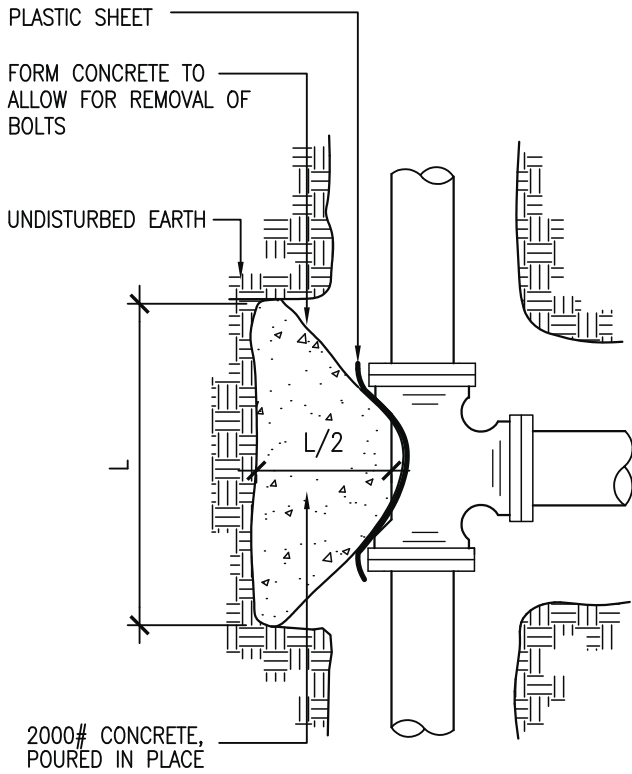
SOIL TYPE	POUNDS PER SQUARE INCH
MUCK, PEAT, ETC.	0
SOFT CLAY	1,000
SAND	2,000
SAND AND GRAVEL	3,000
SAND AND GRAVEL CEMENTED WITH CLAY	4,000
HARD SHALE	10,000

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV-3**

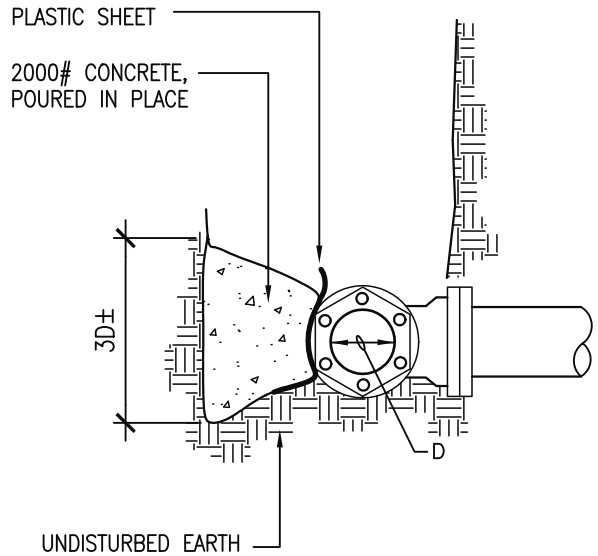
THRUST LOADS



2010\2010928-MVE-WSP-STANDARDS\IV-4THRSTBLK 1=1 3-23-11 RLD



PLAN



ELEVATION

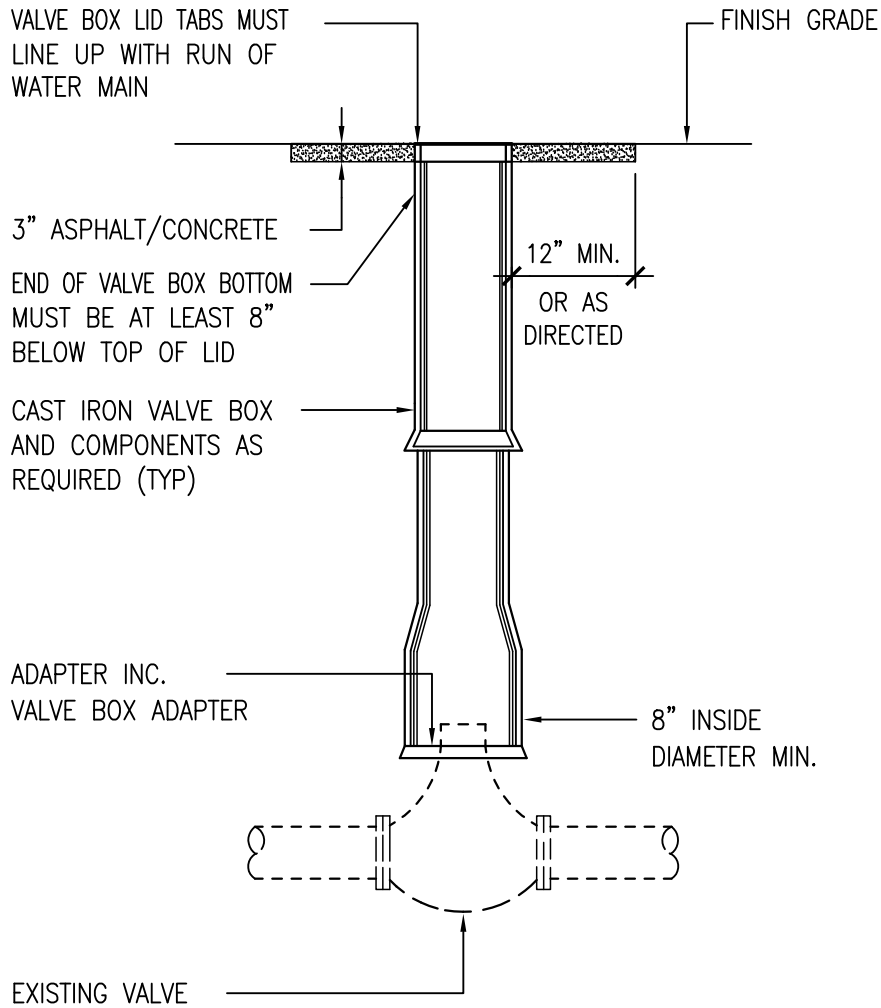
NOTES:

1. BEARING AREA TABLE BASED ON 250 PSI PRESSURE AND 2000 PSF SOIL BEARING. IF PRESSURE IS GREATER OR SOIL BEARING IS LESS, THE THRUST BLOCK SIZE SHALL BE INCREASED.
2. THIS TABLE REPRESENTS THE "MINIMUM" CONSTRUCTION STANDARDS. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE APPROPRIATE SIZE OF ALL THRUST BLOCKS BASED ON EXISTING AND LOCAL CONDITIONS.

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV-4**

**THRUST BLOCKS
PLAN AND ELEVATION**





NOTES:

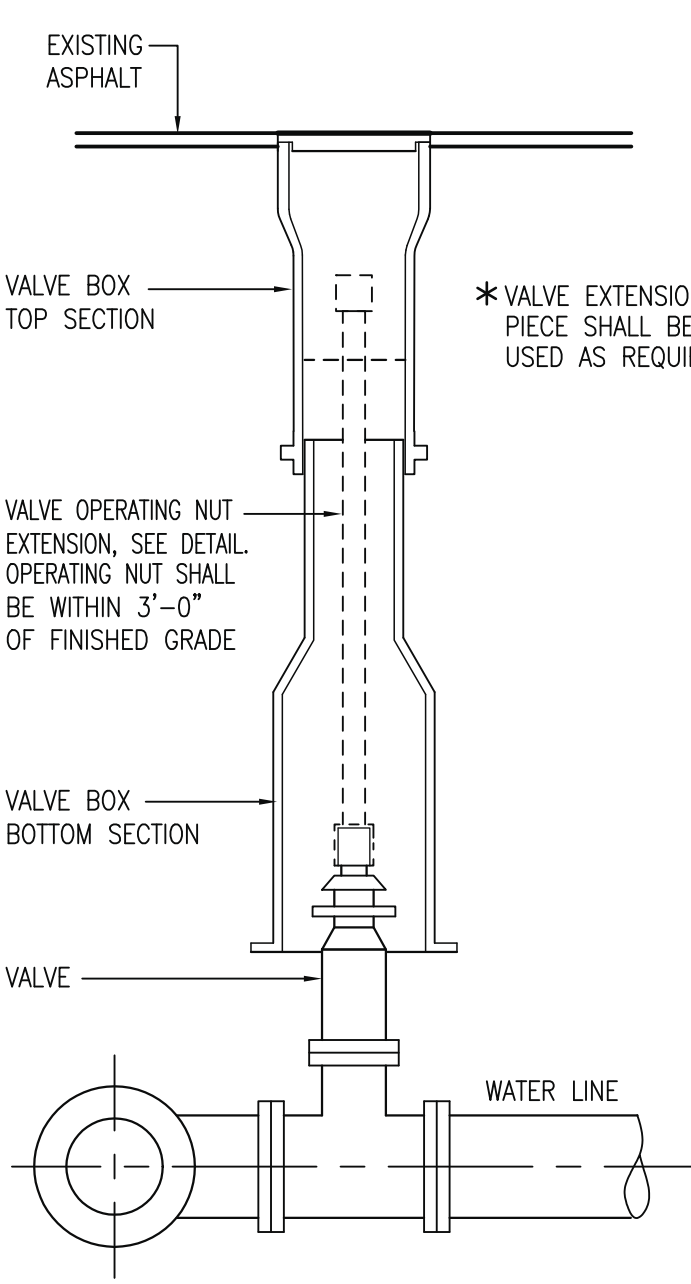
- ① VALVE BOXES SHALL BE TWO PIECE ADJUSTABLE CAST IRON WITH EXTENSION PIPE (IF NEEDED). "WATER" SHALL BE CAST IN RELIEF ON THE VALVE BOX TOP. VALVE BOX BOTTOM MUST FIT VALVE ADAPTER.
- ② ALL EXISTING CAST IRON VALVE BOXES SHALL BE ADJUSTED TO GRADE WITH CAST IRON COMPONENTS.
- ③ ALIGNMENT OF THE VALVE BOX SHALL BE THE CONTRACTORS RESPONSIBILITY AND CARE SHALL BE TAKEN TO ENSURE THAT THE VALVE MAY BE OPERATED.
- ④ VALVES DEEPER THAN 4' REQUIRE SOIL PIPE EXTENSIONS.

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV-5**

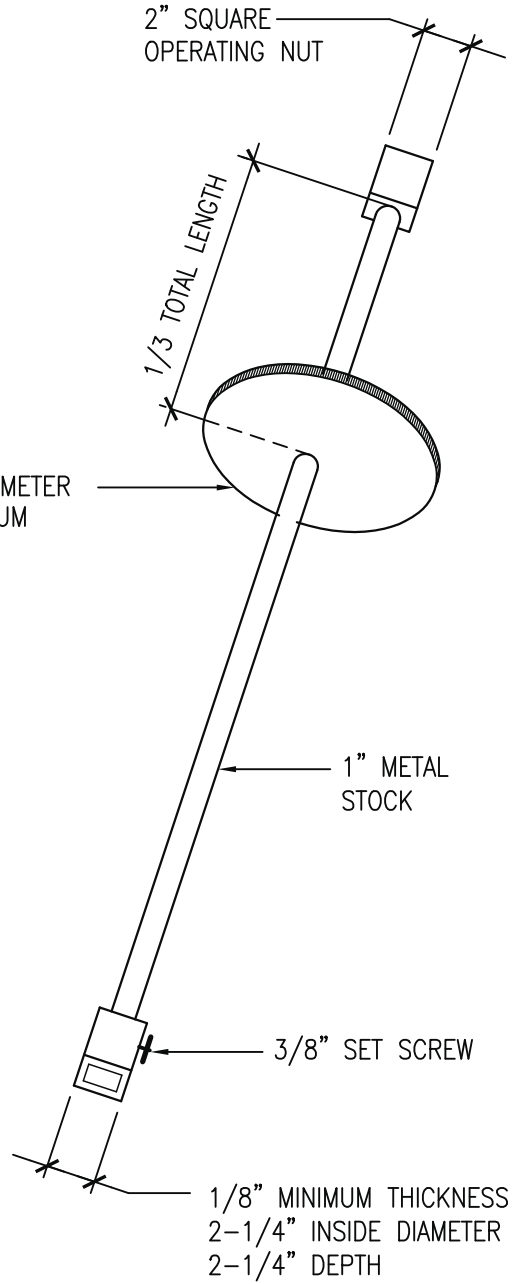
**VALVE BOX
ADJUSTMENT**



2010\2010928-MVE-WSP-STANDARDS\1V-6VLVOPRNUTEXT 1=1 3-23-11 RLD



* VALVE EXTENSION PIECE SHALL BE USED AS REQUIRED.



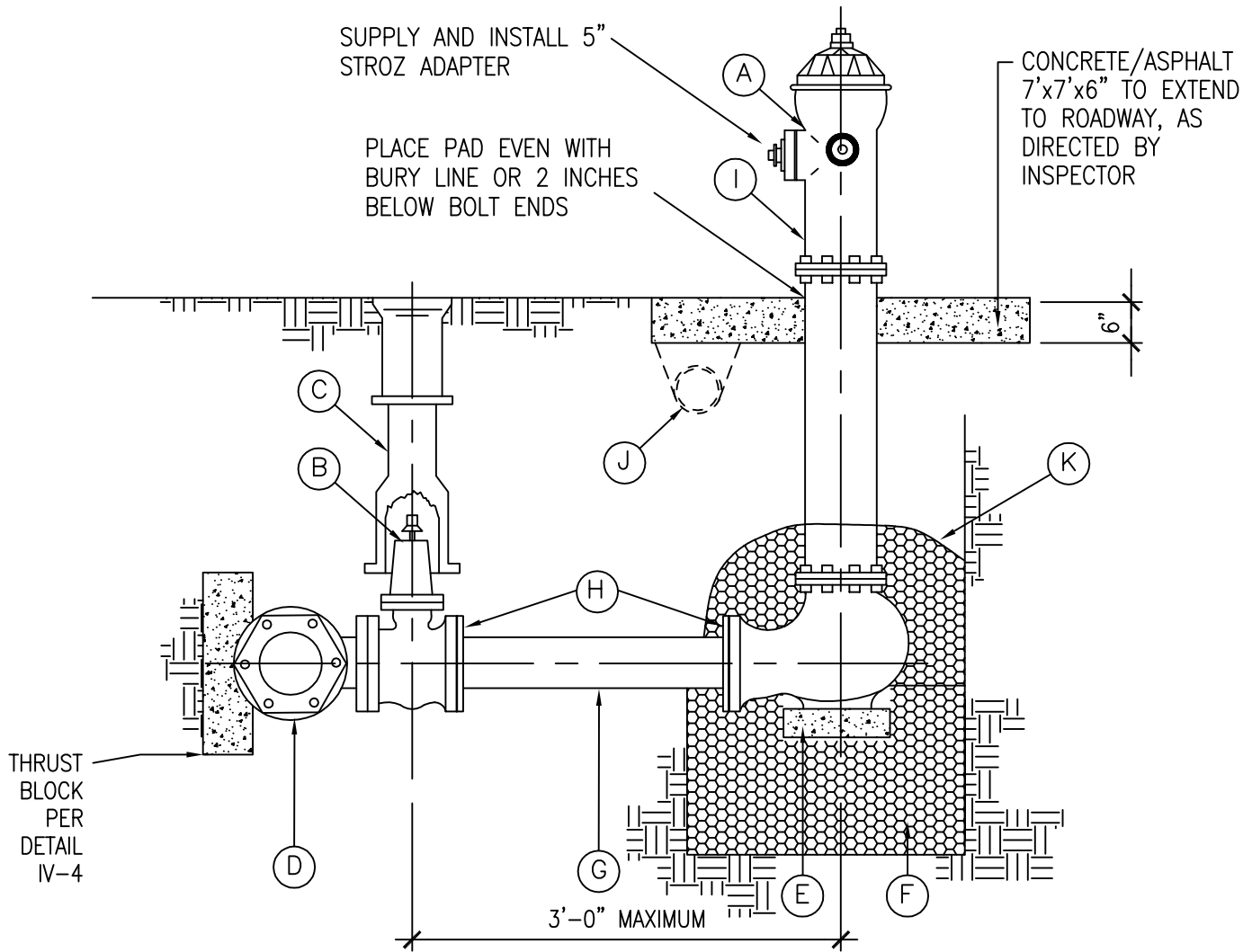
NOTES:

- ① VALVE OPERATING NUT EXTENSION IS 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.
- ② ALL VALVE OPERATING NUT EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND PAINTED WITH TWO (2) COATS OF ENAMEL PAINT.

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV-6**

**VALVE OPERATING
NUT EXTENSION**





CALL OUT	QUANTITY	ITEM DESCRIPTION
A	1	FIRE HYDRANT: MUELLER "CENTURIAN" OR CLOW "MEDALLION"
B	1	AUXILIARY GATE VALVE: 6" PER STANDARD MJ X FL
C	1	VALVE BOX: PER DETAIL IV-5 AND DETAIL IV-6
D	1	TEE: 6" FLANGED OUTLET
E	1	CONCRETE BRICK 8" X 16" X 4"
F	1/4 CY	WASHED ROCK 1-1/4" MINUS
G	2' MAX.	6" DUCTILE IRON PIPE: CEMENT LINED, CLASS 52
H	2	MEGA-LUGS
I		HYDRANTS SHALL BE PAINTED WITH TWO COATS OF SAFETY YELLOW
J		IN LOCATION WHERE HYDRANT LINE CROSSES DITCH INSTALL 10 FEET OF CULVERT AND FILL AREA OVER CULVERT, CULVERT SIZE TO BE DETERMINED BY CITY OF EDGEWOOD PUBLIC WORKS.
K		COVER WASHED ROCK WITH FILTER FABRIC

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV-7**

FIRE HYDRANT ASSEMBLY

2010\2010928-MVE-WSP-STANDARDS\1V-8ACREPAIR 1=1 3-23-11 RLD

*3" MINIMUM ASPHALT CLASS "B" THICKNESS TO BE 1" GREATER THAN EXISTING - TO A MAXIMUM OF 6".

ALL EDGES TO BE CUT IN SMOOTH STRAIGHT LINES PRIOR TO PAVEMENT REPAIR, THE LIMITS OF PAVING WILL BE DETERMINED BY THE CITY OF EDGEWOOD INSPECTOR. CALL PRIOR TO MAKING FINAL CUT.

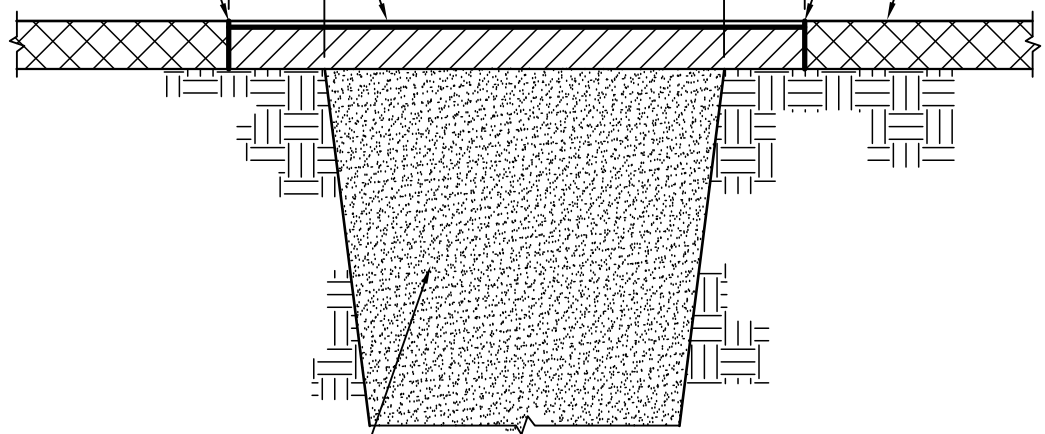
DAMAGED SECTION PAVEMENT LIMIT
6'-0"

12"
MIN.

12"
MIN.

CLEAN AND TACK ALL ASPHALT EDGES PRIOR TO PAVING. SEAL ALL JOINTS AFTER PAVING WITH CSS-1 EMULSIFIED ASPHALT

EXISTING PAVEMENT



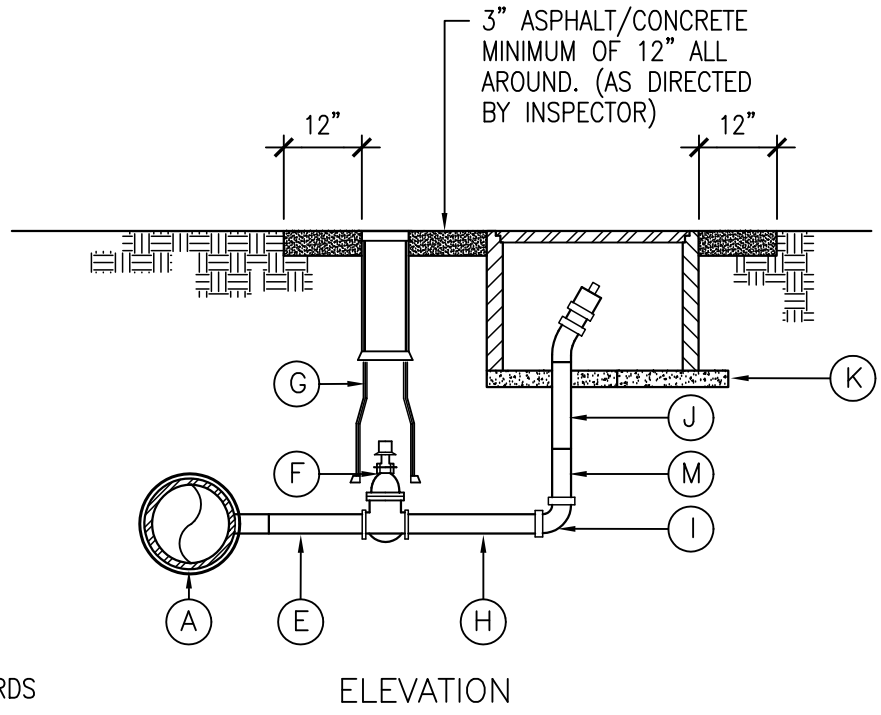
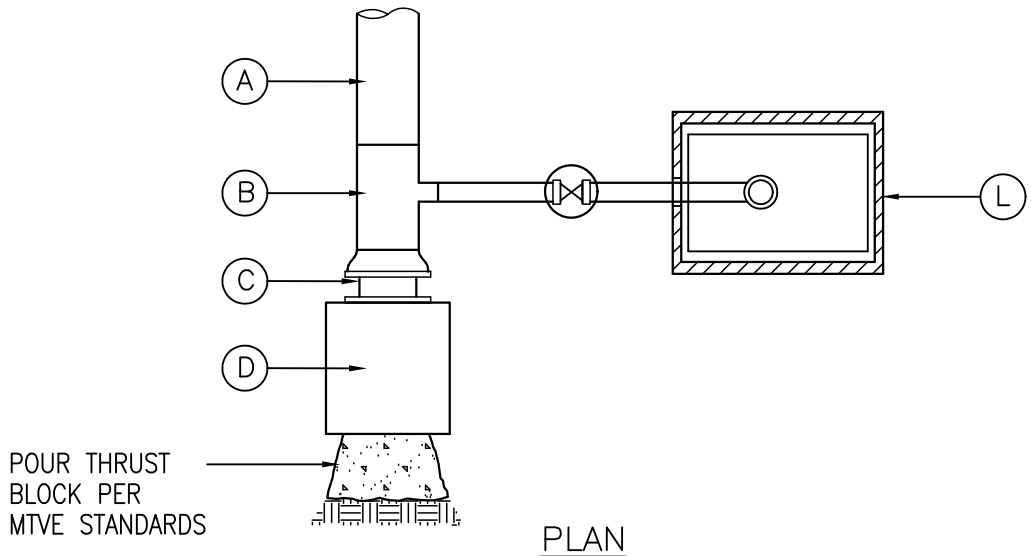
COMPACTED BACKFILL CONSISTING OF 5/8" CRUSHED GRAVEL OR C.D.F. AS DIRECTED

*PAVING TO BE DONE AS REQUIRED BY THE CITY OF EDGEWOOD PUBLIC WORKS DIRECTOR

MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV-8

ASPHALT PAVEMENT
REPAIR WITHOUT OVERLAY





- (A) EXISTING MAIN
- (B) MJ TEE, REDUCED TO 2" FIP
- (C) CAP OR PLUG (MJ)
- (D) ECOLOGY BLOCK
- (E) 2"x8" BRASS NIPPLE
- (F) 2" GATE VALVE PER MTVE STANDARDS
- (G) VALVE BOX, CAST IRON SLIDE EXTENSION PER DETAIL IV-5
- (H) 2"x12" BRASS NIPPLE
- (I) 2 - 2" 90° ST ELL BRASS "SWING JOINT"
- (J) KUPFERLE BLOW OFF HYDRANT #78
- (K) 2"x6"x12" CONCRETE PADS
- (L) CARSON 1527 PLASTIC TRAFFIC BOX
- (M) 2" BRASS NIPPLE, AS NEEDED, TO ADJUST TO GRADE

NOTE:

ABOVE GROUND BLOW-OFF OR AUTOMATIC BLOW-OFF MAY BE REQUIRED. REFER TO APPROVED PLANS.

NSF NOTE:

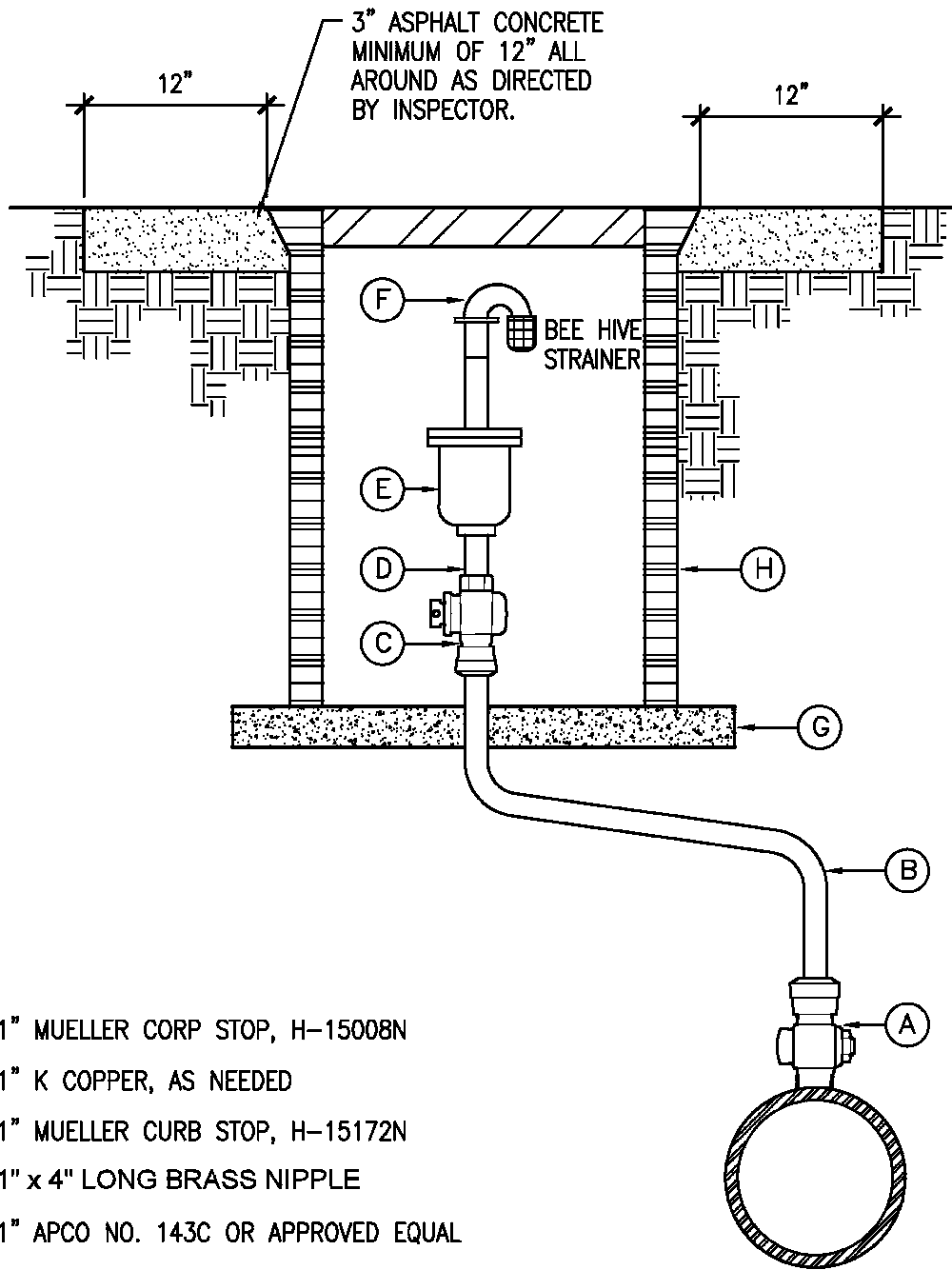
ALL FITTINGS AND PARTS MUST COMPLY WITH NSF/ANSI 61 ANNEX G & NSF/ANSI 372

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 9**

2" BLOW OFF

2010\2010928-ME-WSP STANDARDS IV-9-B0 1=1 7-13-12 BSO





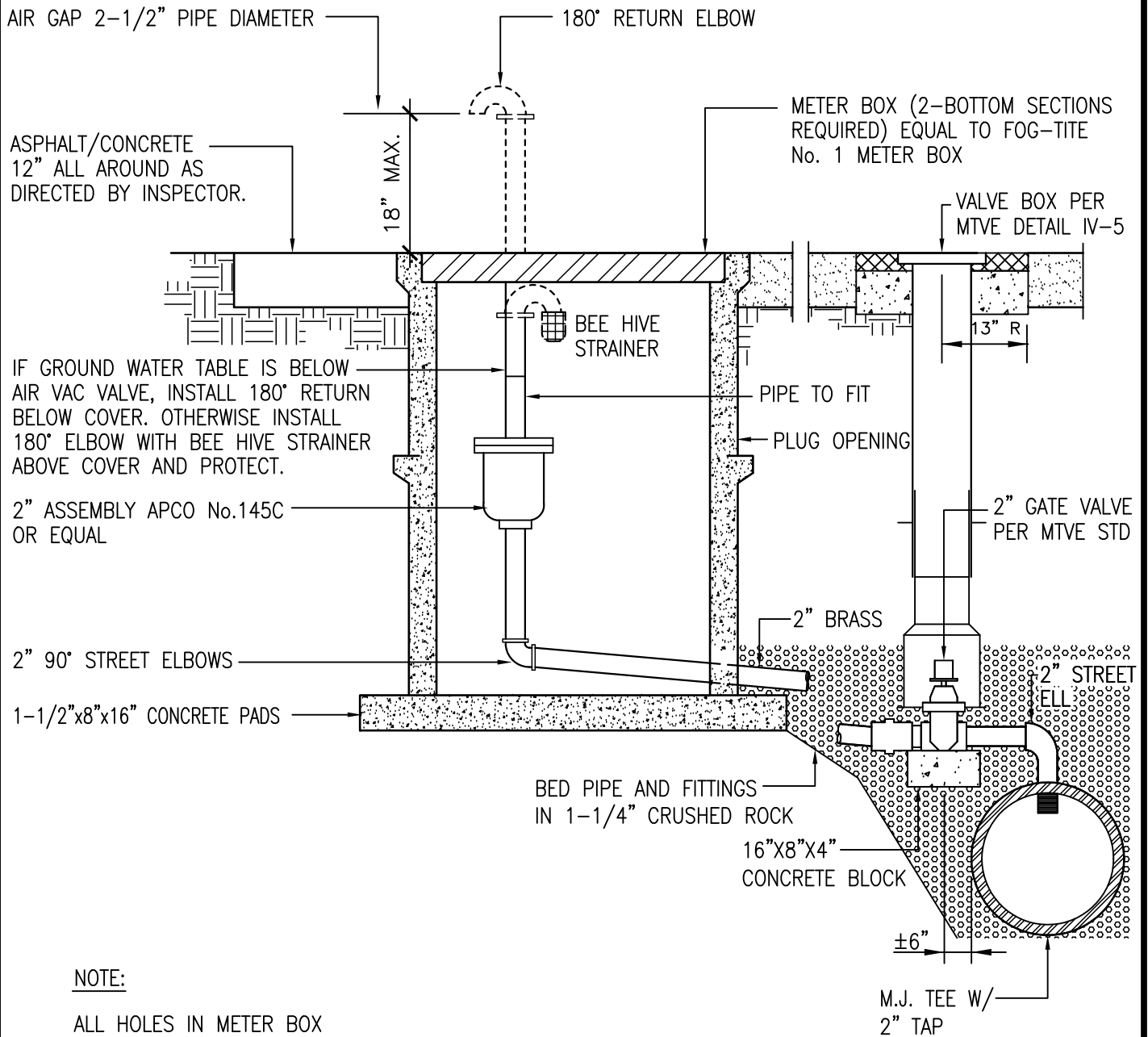
- (A) 1" MUELLER CORP STOP, H-15008N
- (B) 1" K COPPER, AS NEEDED
- (C) 1" MUELLER CURB STOP, H-15172N
- (D) 1" x 4" LONG BRASS NIPPLE
- (E) 1" APCO NO. 143C OR APPROVED EQUAL
- (F) IF GROUND WATER TABLE IS BELOW AIR VAC, INSTALL 180° BELOW COVER. OTHERWISE INSTALL 180° ELL WITH BEE HIVE STRAINER ABOVE COVER AND PROTECT
- (G) 1-1/2"x8"x16" CONCRETE PADS
- (H) 2 - OLD CASTLE 1527BCF X 12" OLD CASTLE FIBRELYTE LID, SOLID

NSF NOTE:

ALL FITTINGS AND PARTS MUST COMPLY WITH NSF/ANSI 61 ANNEX G & NSF/ANSI 372

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 10**

**1" AIR AND VACUUM
RELEASE ASSEMBLY**



NOTE:

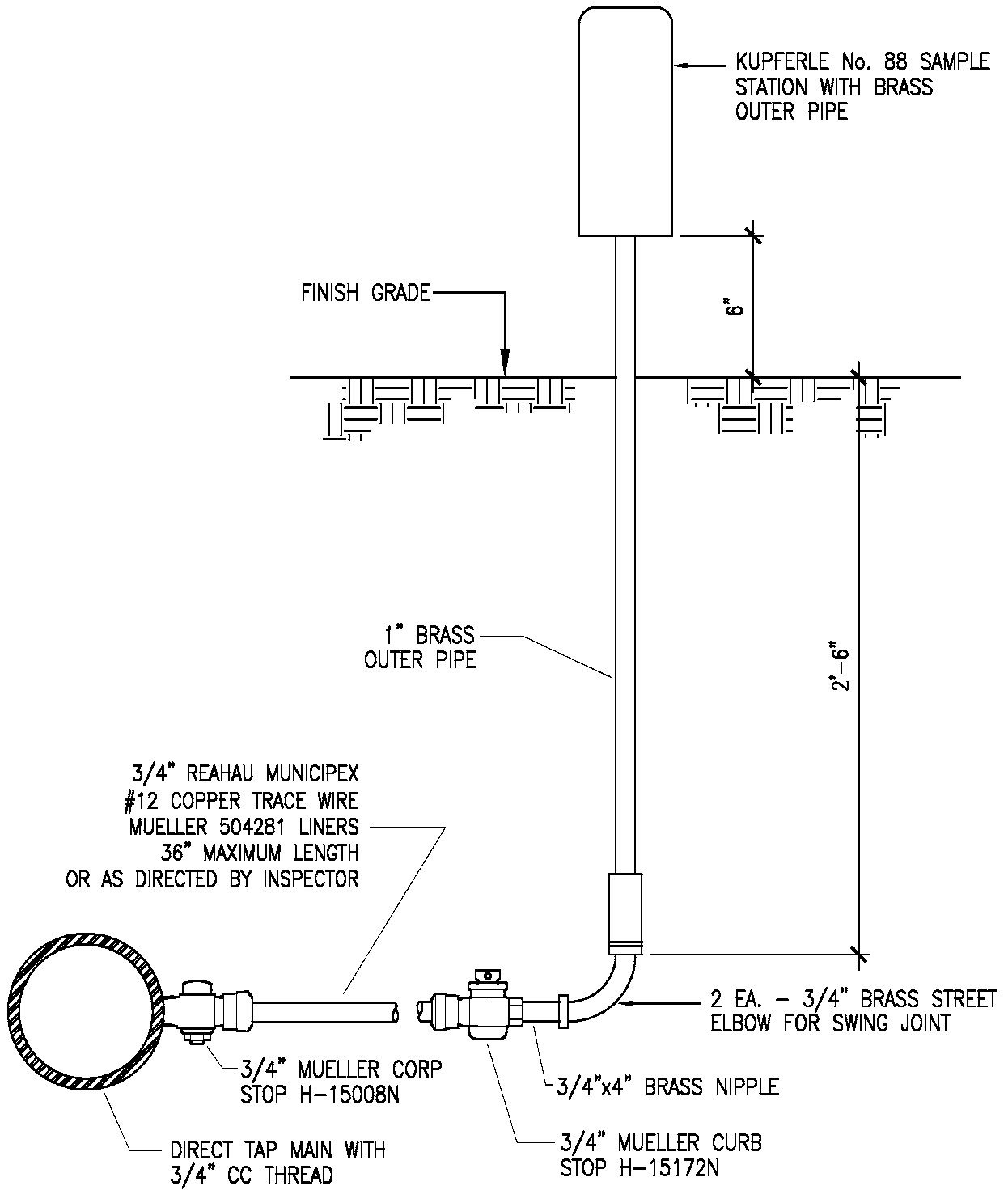
ALL HOLES IN METER BOX SHALL BE PLUGGED OR BLOCKED TO BE MOLE TIGHT.

NSF NOTE:

ALL FITTINGS AND PARTS MUST COMPLY WITH NSF/ANSI 61 ANNEX G & NSF/ANSI 372

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 11**

**2" AIR AND VACUUM
RELEASE ASSEMBLY**



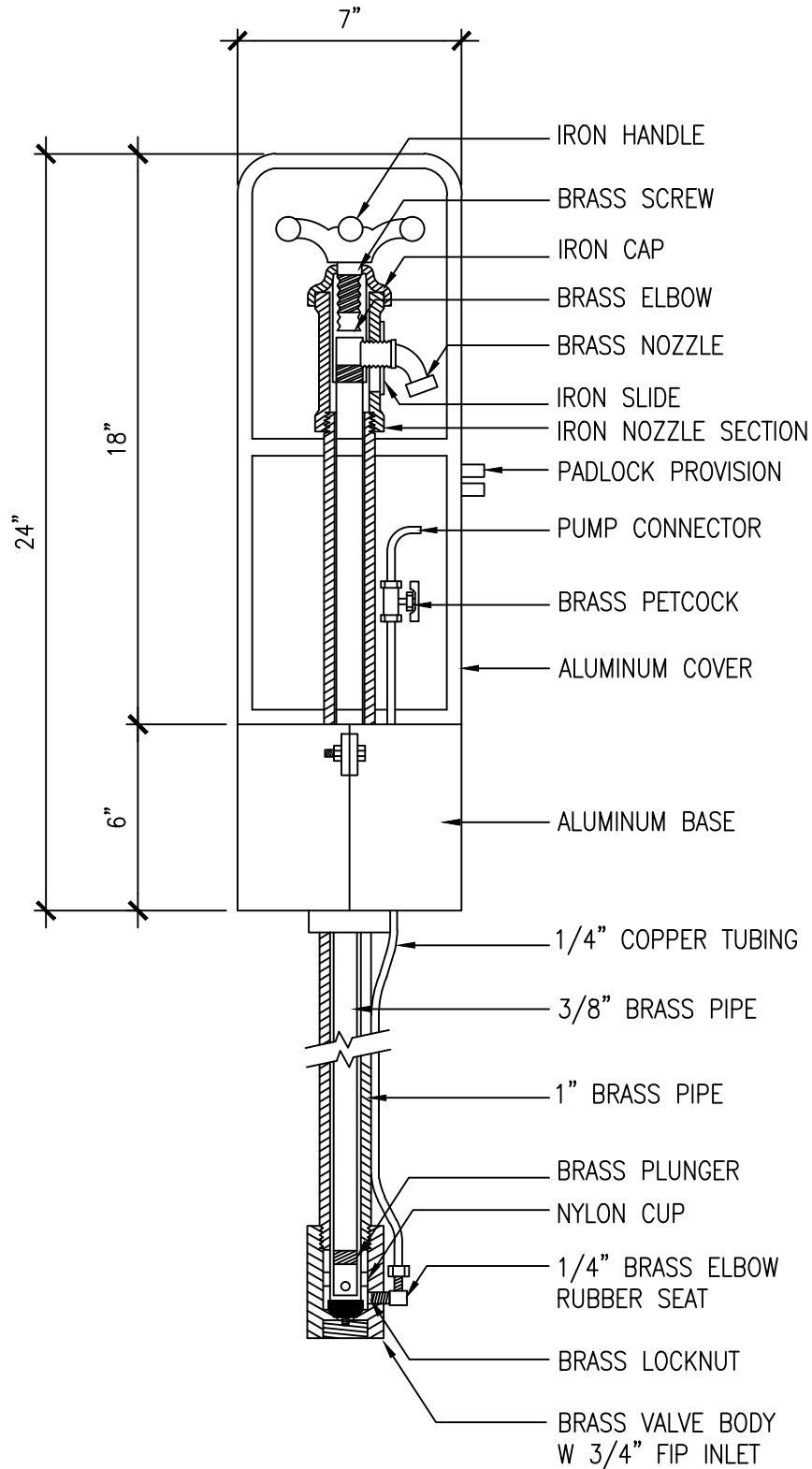
NSF NOTE:
ALL FITTINGS AND PARTS MUST COMPLY WITH NSF/ANSI 61 ANNEX G & NSF/ANSI 372

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 12**

**WATER
SAMPLING STATION**



KUPERFLE ECLIPSE #88



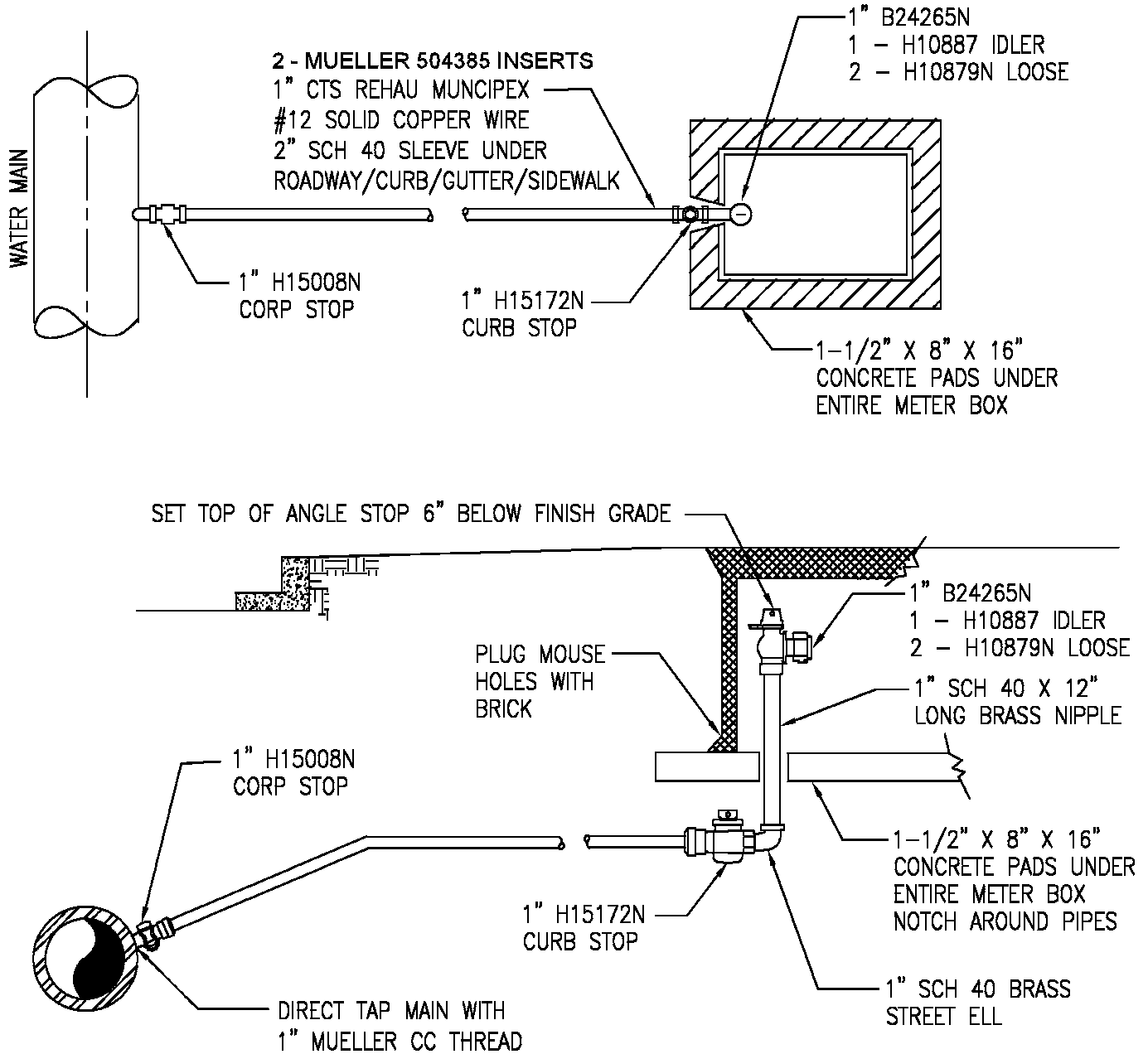
MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 13

WATER
SAMPLING STATION

NOTES:

1. INSTALL 1-1/2" SCH 40 PVC BETWEEN CLUSTERED BOXES AS DIRECTED
2. SET METER BOX PADS ON COMPACTED SAND
3. BACKFILL ENTIRE SERVICE WITH SAND

METER BOX	COVER
OLD CASTLE 1527BCF X 18" 15272520	OLD CASTLE FIBRELYTE WITH AMR HOLE 02001408



NOT TO SCALE

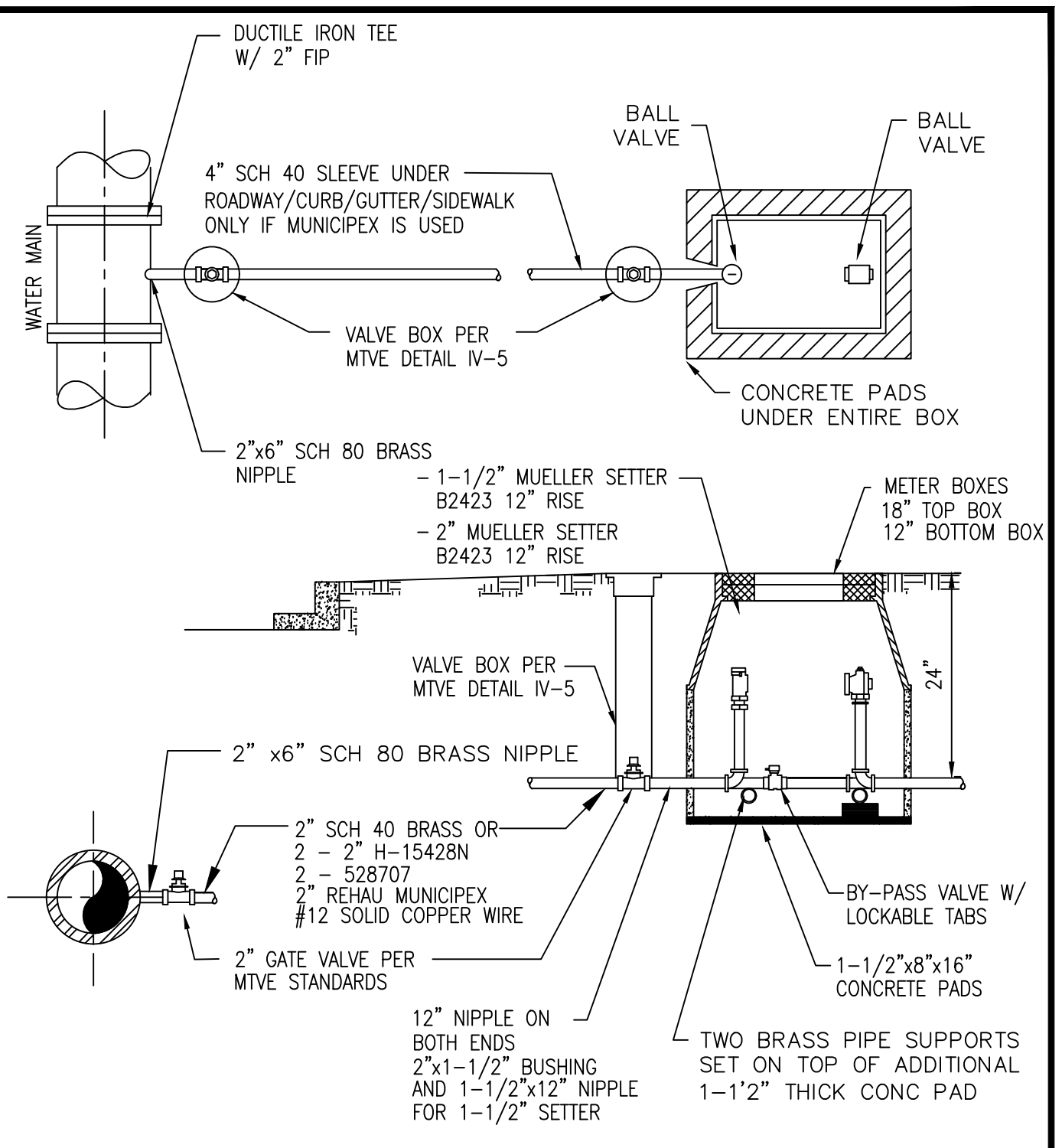
NSF NOTE:

ALL FITTINGS AND PARTS MUST COMPLY WITH NSF/ANSI 61 ANNEX G & NSF/ANSI 372

REVISED 2-8-17 CMC
SUPERSEDES ALL PREVIOUS
VERSIONS

MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 14

3/4" AND 1" SINGLE
METER SERVICE



2010\2010928-ME-HSP\STANDARDS\IV-16SETTER 1=1 5-23-16 CMC

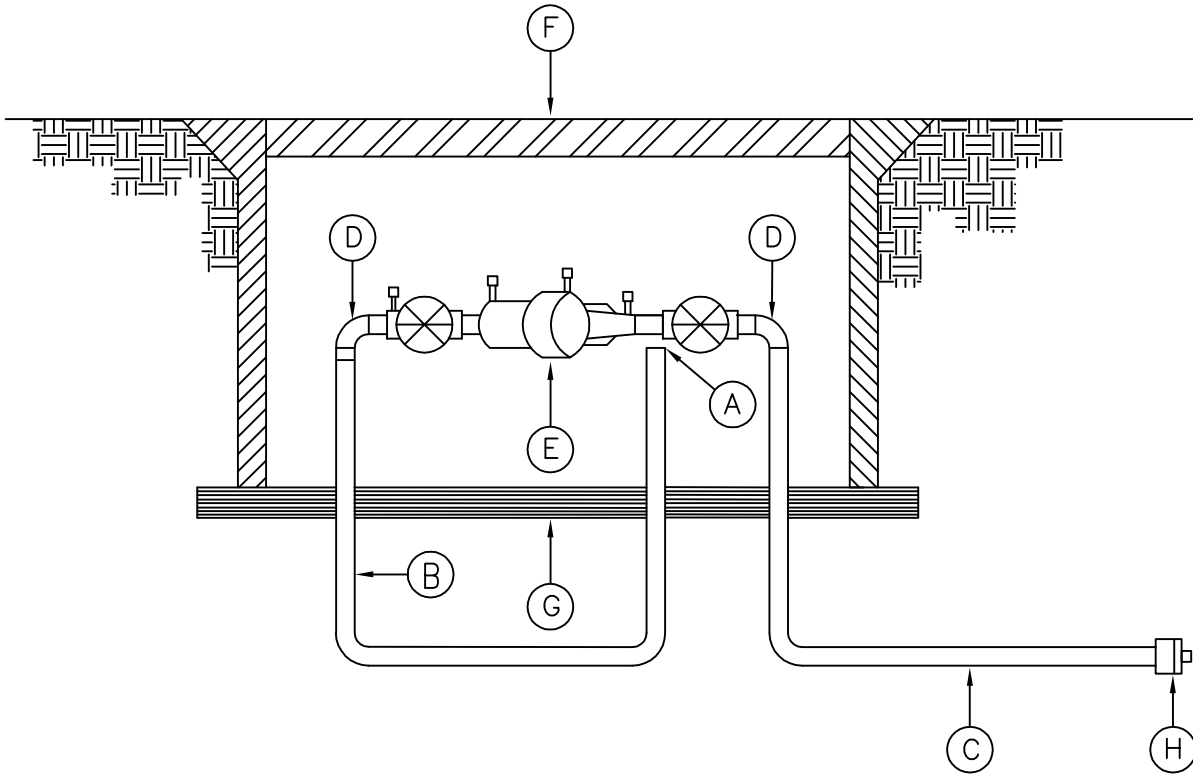
NOT TO SCALE

REVISED 5-23-16 CMC
SUPERCEDES ALL
PREVIOUS VERSIONS

NSF NOTE:
ALL FITTINGS AND PARTS MUST COMPLY WITH
NSF/ANSI 61 ANNEX G & NSF/ANSI 372

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 16**

**1-1/2" and 2" STANDARD COPPER
SETTER WITH BYPASS**



- (A) 1" H14206N QUARTER BEND WITH METER NUT
- (B) 1" K COPPER BENT TO MTVE PATTERN
- (C) 1" K COPPER BENT TO MTVE PATTERN
- (D) 1" H15531N
- (E) 1" WILKINS 950XLT2U DCVA WITH STAINLESS STEEL HANDLES
- (F) INSTALL IN SAME BOX AS METER IV-14
- (G) 1-1/2"x8"x16" CONCRETE PADS UNDER ENTIRE METER BOX
CUT AS NEEDED TO FIT AROUND COPPER RISERS
OPTION - CENTER PADS UNDER METER BOX EDGES
PLACE PIPE FOAM AROUND COPPER RISERS
FILL CENTER WITH 1-1/2" OF MOTOR MIX (NOT CONCRETE)
- (H) 1" H15451N WITH PVC PLUG

NOT TO SCALE

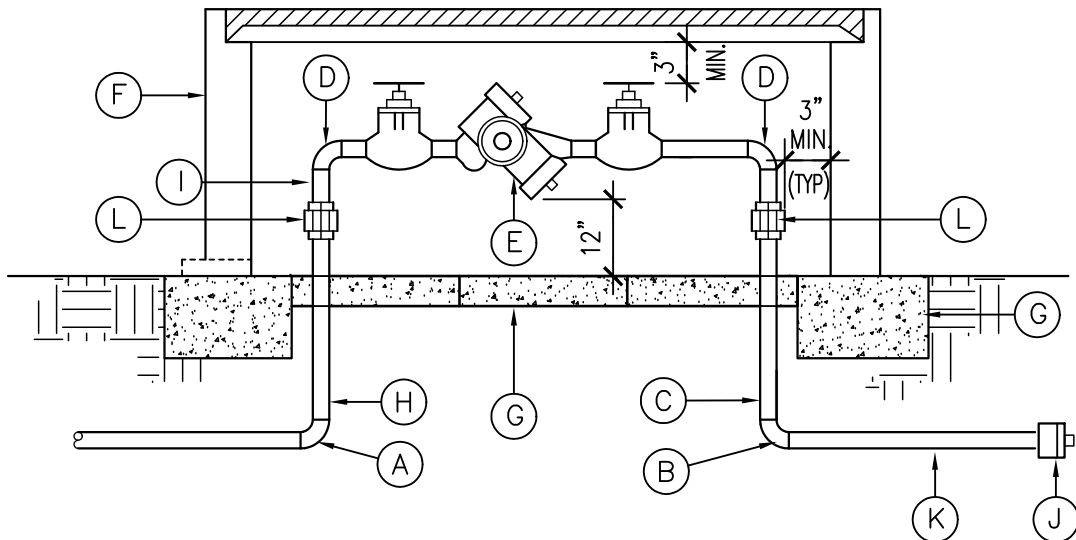
REVISED 3-4-16 CMC
SUPERCEDES ALL
PREVIOUS VERSIONS

NSF NOTE:

ALL FITTINGS AND PARTS MUST COMPLY WITH
NSF/ANSI 61 ANNEX G & NSF/ANSI 372

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 17**

**1" PREMISES
ISOLATION D.C.V.A.**



- | | |
|--|--|
| (A) BRASS ELL 3/4" H-15533N (1" ON 1" SETTER) | (G) 2"x8"x16" CONCRETE PADS, FIT AROUND NIPPLES |
| (B) 1" BRASS ELL H-15533N | (H) 3/4" BRASS NIPPLE, AS NEEDED (1" USED ON 1" SETTER) |
| (C) 1" BRASS NIPPLE, 12" LONG | (I) BRASS BUSHING 3/4"x1" (NOT USED ON 1" SETTER) |
| (D) 1" BRASS 90° ST ELL | (J) ADAPTER, 1" H-15451N WITH 1" PLUG, OR ADAPT TO EXISTING SERVICE LINE |
| (E) 1" RPBA, WILKINS 975XL2 | (K) 4'-0" OF 1" TYPE K COPPER |
| (F) HOT BOX, OWNER RESPONSIBLE FOR FREEZE PROTECTION | (L) BRASS UNION |

NOTES:

1. THE RPBA SHALL BE INSTALLED WITH A MINIMUM OF 3'-0" CLEAR SPACE ON ALL SIDES TO FACILITATE MAINTENANCE AND TESTING. IT SHALL BE TESTED AFTER INSTALLATION, BY A WASHINGTON STATE CERTIFIED BACKFLOW ASSEMBLY TESTER, TO INSURE ITS SATISFACTORY OPERATION BEFORE OCCUPANCY AND ANNUALLY THEREAFTER.
2. AN RPBA SHALL NOT BE INSTALLED IN A PIT BELOW GROUND LEVEL.
3. THE PROTECTIVE COVERING FOR THE RPBA MUST INCLUDE A DAYLIGHT DRAIN. THE DRAIN MUST ALSO BE ABLE TO HANDLE THE VOLUME OF WATER THAT POTENTIALLY COULD BE DISCHARGED FROM THE RELIEF VALVE PORT.
4. HOT BOX SHALL BE SUPPORTED BY FOUR 16" X 8" X 4" SOLID CONCRETE BLOCKS.
5. RPBA SHALL BE PROTECTED FROM FREEZING. FREEZE PROTECTION SHALL BE MAINTAINED BY OWNER.

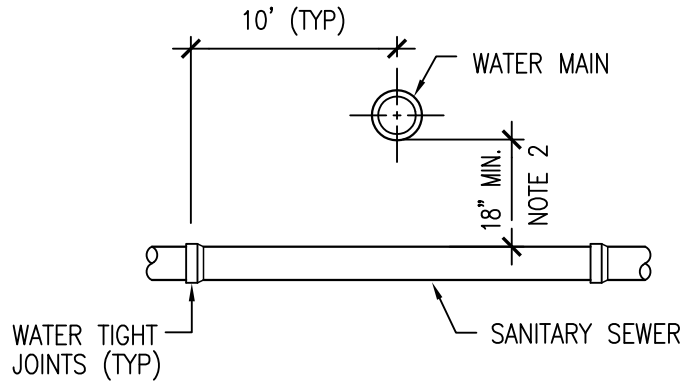
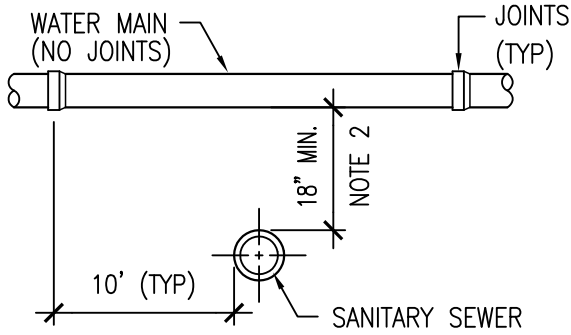
NSF NOTE:

ALL FITTINGS AND PARTS MUST COMPLY WITH NSF/ANSI 61 ANNEX G & NSF/ANSI 372

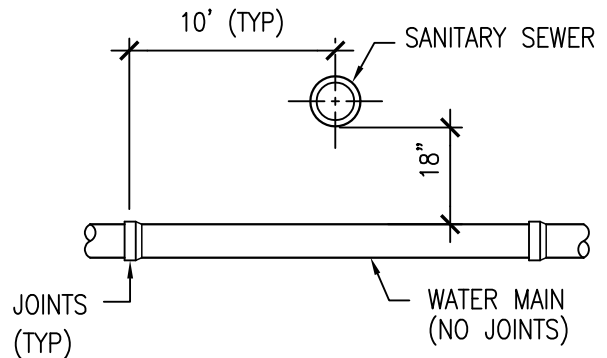
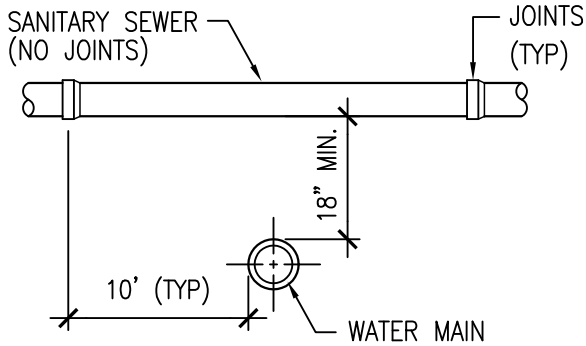
**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 18**

**1" PREMISES
ISOLATION RPBA**



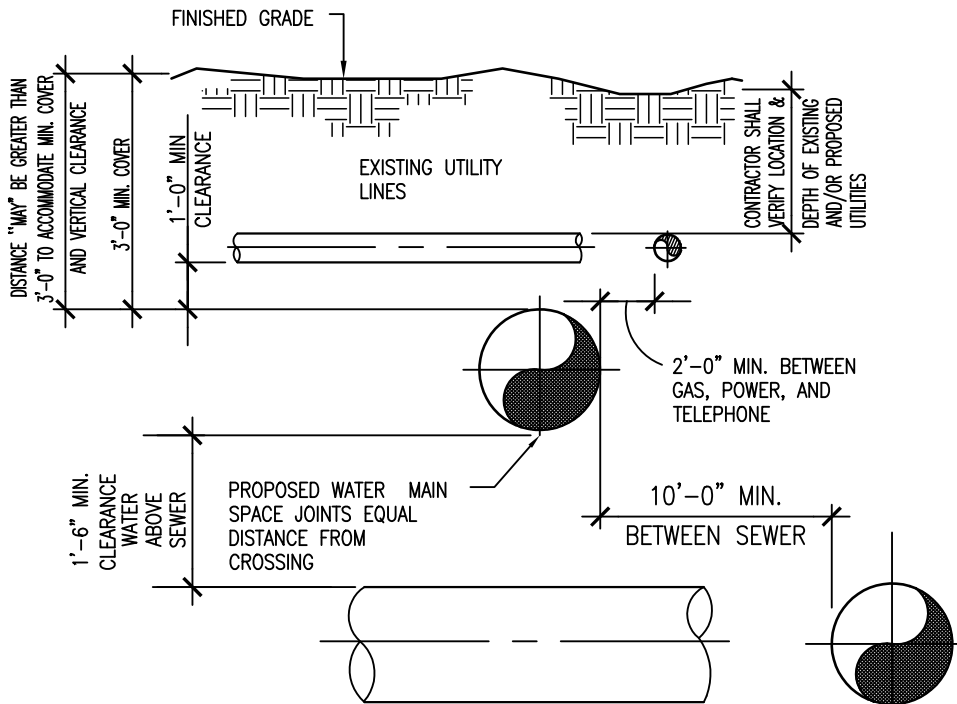


WATER MAIN CROSSING ABOVE SANITARY SEWER



WATER MAIN CROSSING BELOW SANITARY SEWER

NOTE: SLEEVE WATER MAIN AS SHOWN IN SLEEVE DETAIL.



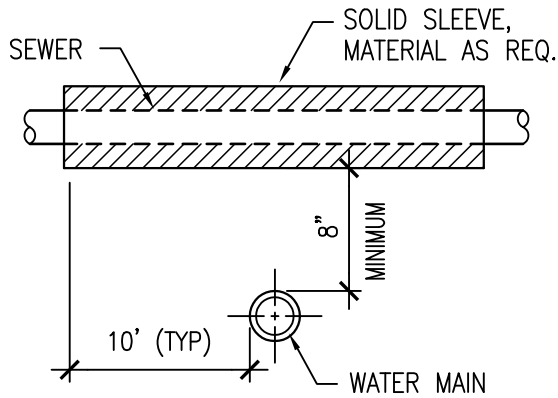
NOTES:

1. REGULATORY AGENCY REQUIREMENTS SHALL SUPERSEDE WATER COMPANY STANDARDS IF MORE STRINGENT.
2. IF MINIMUM HORIZONTAL OR VERTICAL SEPARATIONS NOTED CANNOT BE MET THE SEWER WILL BE SLEEVED AS SHOWN IN THE SLEEVE DETAIL.

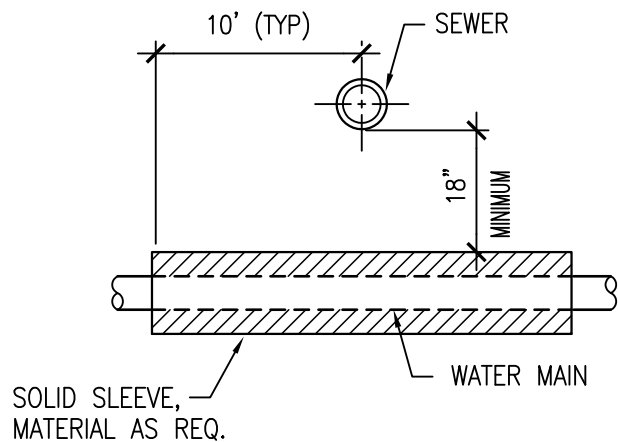
**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 19 (1 OF 3)**

**WATER MAIN
CROSSING SEWER PIPE**





SEWER PIPE SLEEVE DETAIL



WATER PIPE SLEEVE DETAIL

NOTE:

SLEEVE SHALL BE ONE QUARTER INCH THICK CONTINUOUS STEEL, DUCTILE IRON, OR PRESSURE RATED PVC PIPE WITH A DIMENSION RATIO (DR) (THE RATIO OF THE OUTSIDE DIAMETER TO THE PIPE WALL THICKNESS) OF 18 OR LESS, WITH ALL VOIDS PRESSURE-GROUTED WITH SAND-CEMENT GROUT OR BENTONITE. COMMERCIALY AVAILABLE PIPE SKIDS AND END SEALS ARE ACCEPTABLE. WHEN USING STEEL OR DUCTILE IRON CASING DESIGN CONSIDERATION FOR CORROSION PROTECTION SHALL BE CONSIDERED.

2010\2010928-ME-WSP\STANDARDS\IV-19 UTILX-ING-21=1 9-28-11 BSO



MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 19 (2 OF 3)

WATER MAIN
CROSSING SEWER PIPE NOTES

**TYPICAL SPECIAL PROTECTION FOR WATER MAIN CROSSING WITH SANITARY SEWER,
PVC STORM DRAIN, OR EFFLUENT LINE**

WATER MAIN CROSSING WITH RCP STORM DRAIN

WATER MAIN MUST CROSS A MINIMUM OF 18" ABOVE A RCP STORM DRAIN. IF THIS IS IMPRACTICAL AND IF THE STORM DRAIN CROSSES ABOVE THE WATER MAIN, OR BELOW BY LESS THAN 18", THE FOLLOWING SPECIAL CONSTRUCTION METHODS MAY BE USED:

- A. IF THE RCP STORM DRAIN IS LESS THAN 24" DIA., THEN CONCRETE ENCASE THE JOINTS OF THE RCP STORM DRAIN 10' EITHER SIDE OF THE CROSSING AND CENTER THE WATER MAIN JOINTS.
- B. IF THE RCP STORM DRAIN IS 24" DIA. OR LARGER, THEN USE JOINT SEALANTS OR JOINT GASKETS THAT MEET ASTM D3212 STANDARDS ON THE STORM DRAIN MAIN AND CENTER THE WATER MAIN JOINTS.

WATER MAIN CROSSING WITH SANITARY SEWER MAIN AND PVC STORM DRAIN

WATER MAIN MUST CROSS A MINIMUM OF 18" ABOVE A SANITARY SEWER MAIN. IF THIS IS IMPRACTICAL AND IF THE SANITARY SEWER MAIN CROSSES ABOVE THE WATER MAIN, OR BELOW BY LESS THAN 18", THE FOLLOWING SPECIAL CONSTRUCTION METHODS MAY BE USED:

- A. SLEEVE THE SEWER OR STORM DRAIN MAIN WITH WATER QUALITY PIPE OR CENTER SEWER OR STORM DRAIN JOINTS WITH WATER MAIN. SEWER AND STORM DRAIN PIPES MUST HAVE WATER TIGHT JOINTS THAT COMPLY WITH ASTM D3212.

SLEEVING IS TO BE 10' EITHER SIDE OF THE WATER PIPE (A TOTAL OF 20') AND TO AVOID BEING GROUTED IN PLACE, THE MAIN INSIDE THE SLEEVE MUST HAVE A DIAMETER EQUAL TO OR GREATER THAN 2/3 THE DIAMETER OF THE SLEEVE.

WATER MAIN CROSSING WITH SANITARY SEWER LATERAL

WATER MAIN MUST CROSS A MINIMUM OF 12" ABOVE A SANITARY SEWER LATERAL. IF THIS IS IMPRACTICAL AND IF THE SANITARY SEWER LATERAL CROSSES ABOVE THE WATER MAIN, OR BELOW BY LESS THAN 12", THE FOLLOWING SPECIAL CONSTRUCTION METHODS MAY BE USED:

- A. CENTER THE WATER MAIN JOINTS AND SLEEVE THE SANITARY SEWER LATERAL; OR
- B. CENTER THE WATER MAIN JOINTS AND CENTER THE SANITARY SEWER LATERAL PIPE JOINTS.

SLEEVING IS TO BE 10' EITHER SIDE OF THE WATER PIPE (A TOTAL OF 20') AND TO AVOID BEING GROUTED IN PLACE, THE LATERAL INSIDE THE SLEEVE MUST HAVE A DIAMETER EQUAL TO OR GREATER THAN 2/3 THE DIAMETER OF THE SLEEVE.

WATER SERVICE CROSSING WITH SANITARY SEWER MAIN

WATER SERVICE MUST CROSS A MINIMUM OF 18" ABOVE A SANITARY SEWER MAIN. IF THIS IS IMPRACTICAL AND IF THE SANITARY SEWER MAIN CROSSES ABOVE THE WATER SERVICE, OR BELOW BY LESS THAN 18", THE FOLLOWING SPECIAL CONSTRUCTION METHODS MAY BE USED:

- A. THE WATER SERVICE MUST BE POLYETHYLENE (PE) PIPE CONFORMING TO AWWA STANDARD C901-88 AND ASTM D2737 AND SEWER MAIN MUST BE SLEEVED OR HAVE JOINTS CENTERED OVER WATER SERVICE.

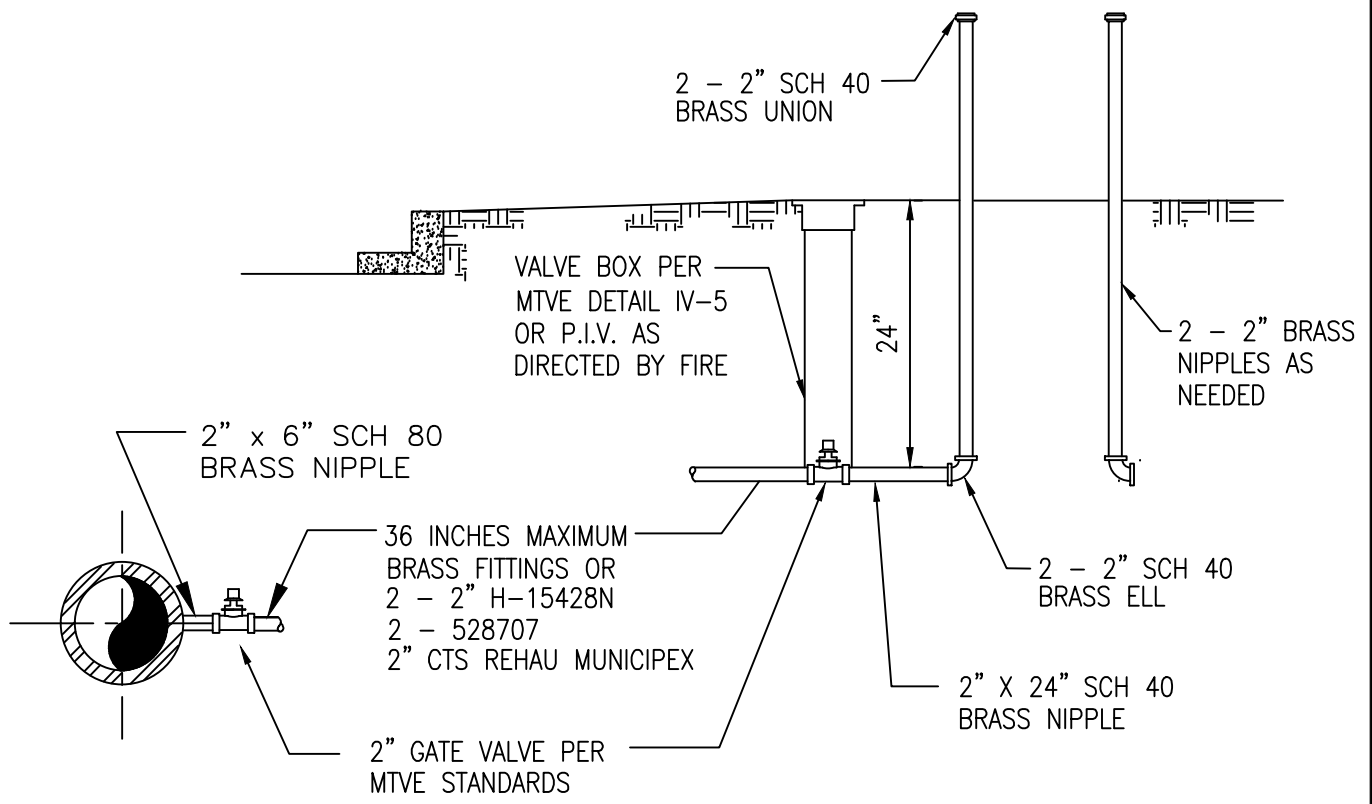
SLEEVING IS TO BE 10' EITHER SIDE OF THE WATER PIPE (A TOTAL OF 20') AND TO AVOID BEING GROUTED IN PLACE, THE MAIN INSIDE THE SLEEVE MUST HAVE A DIAMETER EQUAL TO OR GREATER THAN 2/3 THE DIAMETER OF THE SLEEVE.

**MT. VIEW - EDGEWOOD WATER COMPANY
STANDARD DETAIL IV - 19 (3 OF 3)**



**WATER MAIN
CROSSING SEWER PIPE NOTES**

2" WILKINS 375DA-LM
 BRASS FITTINGS, AS NEEDED
 $\frac{3}{4}$ " SENSUS iPerl READING IN C.F.
 SENSUS 520M, MOUNTED THROUGH ENCLOSURE
 INSULATED ENCLOSURE, AS NEEDED
 HEAT TAPE OR HEATER
 CONCRETE PAD



NOT TO SCALE

REVISED 5-5-17 CMC
 SUPERCEDES ALL
 PREVIOUS VERSIONS

NSF NOTE:

ALL FITTINGS AND PARTS MUST COMPLY WITH
 NSF/ANSI 61 ANNEX G & NSF/ANSI 372

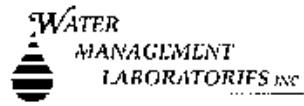
**MT. VIEW - EDGEWOOD WATER COMPANY
 STANDARD DETAIL IV - 20**

2" R.P.D.A

Appendix F

Water Quality Results

Please Print Plainly
 USE HEAVY PEN
 DO NOT WRITE IN SHADED AREAS



1515 80th St. E.
 Tacoma, WA 98404
 (253) 531-3121

INORGANIC CHEMICALS (IOCS) REPORT

System ID No: 568203 System Name: Mt. View - Edgewood Water Company
 Lab/Sample No: 08949945 Date Collected: 10-02-13 DOH Source No: 505
 Multiple Source Nos: N/A Sample Type: B Sample Purpose: C
 Date Received: 10-02-13 Date Reported: 10.07.13 Supervisor: AMB
 County: Pierce Date Digested: NA Group: (A) B Other
 Sample Location: Sample port WELL #5
 Send Results & Bill To: Mt. View - Edgewood Water Co. Remarks:
11610-32nd St. E
Edgewood, WA 98372

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS		Method/Analyst
EPA REGULATED							Trigger?	MCL?	
4	Arsenic	0.003	mg/L	0.001	0.01	0.01	NO	NO	200.8 AMB
5	Barium	<0.01	mg/l.	0.01	2	2			200.8 AMB
6	Cadmium	0.0007	mg/L	0.0001	0.005	0.005			200.8 AMB
7	Chromium	<0.007	mg/L	0.007	0.1	0.1			200.8 AMB
11	Mercury	<0.0002	mg/L	0.0002	0.002	0.002			200.8 AMB
12	Selenium	<0.002	mg/l.	0.002	0.05	0.05			200.8 AMB
110	Beryllium	<0.0003	mg/l.	0.0003	0.004	0.004			200.8 AMB
111	Nickel	<0.005	mg/L	0.005	0.1	0.1			200.8 AMB
112	Antimony	<0.003	mg/L	0.003	0.006	0.006			200.8 AMB
113	Thallium	<0.001	mg/l.	0.001	0.002	0.002			200.8 AMB
116	Cyanide	<0.01	mg/L	0.01	0.2	0.2			4500-CNF LAT
19	Fluoride	<0.2	mg/L	0.5	2	4			300.0 AMB
114	Nitrite - N	<0.1	mg/L	0.1	0.5	1			300.0 AMB
20	Nitrate - N	0.5	mg/L	0.2	5	10			300.0 AMB
161	Total Nitrate/Nitrite	0.5	mg/L	0.5	5	10	↓	↓	300.0 AMB
EPA REGULATED (Secondary)									
8	Iron	<0.1	mg/L	0.1	0.3	0.3	NO	NO	3111B AMB
10	Manganese	0.06	mg/l.	0.01		0.05		YES	200.8 AMB
13	Silver	<0.01	mg/L	0.1		0.1		NO	200.8 AMB
21	Chloride	3	mg/L	20		250			300.0 AMB
22	Sulfate	4	mg/L	50		250			300.0 AMB
24	Zinc	<0.2	mg/l.	0.2	5	5	NO	↓	200.8 AMB
STATE REGULATED									
14	Sodium	6	mg/L	5					200.8 AMB
15	Hardness	74	mg/L	10					2340C LAT
16	Conductivity	132	umhos/cm	70		700		NO	2510B LAT
17	Turbidity	2.8	NTU	0.1					2130B LAT
18	Color	<5.0	color units	15		15		NO	2120B LAT
26	Total Dissolved Solids	NA	mg/l.	100		500		—	2540C —
STATE UNREGULATED									
9	Lead	<0.001	mg/l.	0.001					200.8 AMB
23	Copper	<0.02	mg/l.	0.02					200.8 AMB

COMMENTS: FC 28

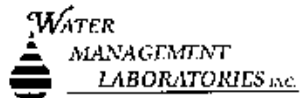
INORGANIC CHEMICALS (IOCS) REPORT

System ID No: <u>568203</u>	System Name: <u>MT. View - Edgewood Water Co</u>	
Lab/Sample No: <u>08929218</u>	Date Collected: <u>09-09-09</u>	DOH Source No: <u>S06</u>
Multiple Source Nos: <u>N/A</u>	Sample Type: <u>B</u>	Sample Purpose: <u>C</u>
Date Received: <u>09-09-09</u>	Date Reported: <u>09.15.09</u>	Supervisor: <u>LMA</u>
County: <u>Pierce</u>	Date Digested: <u>NA</u>	Group: <u>(A)</u> B Other
Sample Location: <u>Well #6 Sample Port in Wellhouse</u>		Remarks:
Send Results & Bill To: <u>MT. View - Edgewood Water Co</u>		
<u>11610 - 32nd Street E</u>		
<u>Edgewood, WA 98372</u>		

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Method / Analyst
EPA REGULATED							Trigger?	MCL?
4	Arsenic	<0.002	mg/L	0.002	0.03	0.03	NO	200.8 <i>DMB</i>
5	Barium	<0.1	mg/L	0.1	2	2	NO	200.8 <i>DMB</i>
6	Cadmium	<0.002	mg/L	0.002	0.005	0.005	NO	200.8 <i>DMB</i>
7	Chromium	<0.01	mg/L	0.01	0.1	0.1	NO	200.8 <i>DMB</i>
11	Mercury	<0.0005	mg/L	0.0005	0.002	0.002	NO	200.8 <i>DMB</i>
12	Selenium	<0.005	mg/L	0.005	0.05	0.05	NO	200.8 <i>DMB</i>
110	Beryllium	<0.003	mg/L	0.003	0.004	0.004	NO	200.8 <i>DMB</i>
111	Nickel	<0.04	mg/L	0.04	0.1	0.1	NO	200.8 <i>DMB</i>
112	Antimony	<0.005	mg/L	0.005	0.006	0.006	NO	200.8 <i>DMB</i>
113	Thallium	<0.002	mg/L	0.002	0.002	0.002	NO	200.9 <i>DMB</i>
116	Cyanide	<0.05	mg/L	0.05	0.2	0.2	NO	4500-CNF <i>LHL</i>
19	Fluoride	<0.2	mg/L	0.2	2	4	NO	300.0 <i>LHL</i>
114	Nitrite - N	<0.2	mg/L	0.5	0.5	1	NO	300.0 <i>LHL</i>
20	Nitrate - N	2.5	mg/L	0.5	5	10	NO	300.0 <i>LHL</i>
161	Total Nitrate/Nitrite	2.5	mg/L	0.5	5	10	NO	300.0 <i>LHL</i>
EPA REGULATED (Secondary)							Trigger?	MCL?
8	Iron	<0.1	mg/L	0.1	0.3	0.3	NO	3111B <i>DMB</i>
10	Manganese	<0.01	mg/L	0.01	0.05	0.05	NO	200.8 <i>DMB</i>
13	Silver	<0.01	mg/L	0.01	0.1	0.1	NO	200.8 <i>DMB</i>
21	Chloride	6	mg/L	20	250	250	NO	300.0 <i>LHL</i>
22	Sulfate	9	mg/L	10	250	250	NO	300.0 <i>LHL</i>
24	Zinc	<0.2	mg/L	0.2	5	5	NO	200.8 <i>DMB</i>
STATE REGULATED							Trigger?	MCL?
14	Sodium	7	mg/L	5				200.8 <i>DMB</i>
15	Hardness	99	mg/L	10				2340C <i>LHL</i>
16	Conductivity	159	umhos/cm	10	700	700		2510B <i>RL</i>
17	Turbidity	0.7	NTU	0.1	1			2130B <i>RL</i>
18	Color	<5.0	color units	5	15	15		2120B <i>RL</i>
26	Total Dissolved Solids	NA	mg/L	150	500	500		2540C <i>—</i>
STATE UNREGULATED							Trigger?	MCL?
9	Lead	<0.001	mg/L	0.001				200.8 <i>DMB</i>
23	Copper	<0.02	mg/L	0.02				200.8 <i>DMB</i>

COMMENTS: FC08

Please Print Plainly
 USE HEAVY PEN
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 FOR INSTRUCTIONS

INORGANIC CHEMICALS (IOCS) REPORT

AUG 11 2010

System ID No: 568203	System Name: Mt View - Edgewood Water Co.	
Lab/Sample No: CB933359	Date Collected: 07-28-10	DOH Source No: 507
Multiple Source Nos: N/A	Sample Type: B	Sample Purpose: C
Date Received: 07-28-10	Date Reported: 07-31-10	Supervisor: UHL
County: Pierce	Date Digested: NA	Group: (A) B Other
Sample Location: well #8 wellhouse sample port		Remarks: AM131R
Send Results & Bill To: Mt View - Edgewood Water Co. 11610 32nd Street East Edgewood, WA 98572		

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Method / Analyst	
EPA REGULATED							Trigger?	MCL?	
4	Arsenic	<0.002	mg/L	0.002	0.03	0.03	No	200.8	RLB
5	Barium	<0.1	mg/L	0.1	2	2		200.8	RLB
6	Cadmium	<0.002	mg/L	0.002	0.005	0.005		200.8	RLB
7	Chromium	<0.01	mg/L	0.01	0.1	0.1		200.8	RLB
11	Mercury	<0.0005	mg/L	0.0005	0.002	0.002		200.8	RLB
12	Selenium	<0.005	mg/L	0.005	0.05	0.05		200.8	RLB
110	Beryllium	<0.003	mg/L	0.003	0.004	0.004		200.8	RLB
111	Nickel	<0.04	mg/L	0.04	0.1	0.1		200.8	RLB
112	Antimony	<0.005	mg/L	0.005	0.006	0.006		200.8	RLB
113	Thallium	<0.002	mg/L	0.002	0.002	0.002		200.9	RLB
116	Cyanide	<0.05	mg/L	0.05	0.2	0.2		4500-CNT	JMB
19	Fluoride	<0.2	mg/L	0.2	2	4		300.0	JMB
114	Nitrite - N	<0.2	mg/L	0.5	0.5	1		300.0	JMB
20	Nitrate - N	1.9	mg/L	0.5	5	10		300.0	JMB
161	Total Nitrate/Nitrite	1.9	mg/L	0.5	5	10		300.0	JMB
EPA REGULATED (Secondary)									
8	Iron	<0.1	mg/L	0.1	0.3	0.3	No	3111B	RLB
10	Manganese	<0.01	mg/L	0.01	0.05	0.05		200.8	RLB
13	Silver	<0.01	mg/L	0.01	0.1	0.1		200.8	RLB
21	Chloride	6	mg/L	20	250	250		300.0	JMB
22	Sulfate	7	mg/L	10	250	250		300.0	JMB
24	Zinc	<0.2	mg/L	0.2	5	5		200.8	RLB
STATE REGULATED									
14	Sodium	7	mg/L	5				200.8	RLB
15	Hardness	81	mg/L	10				2340C	UHL
16	Conductivity	151	umhos/cm	10	700	700	NO	2510B	RL
17	Turbidity	0.3	NTU	0.1	1			2130B	RL
18	Color	<5.0	color units	5	15	15	NO	2120B	RL
26	Total Dissolved Solids	NA	mg/L	150	500	500	-	2540C	-
STATE UNREGULATED									
9	Lead	<0.001	mg/L	0.001				200.8	RLB
23	Copper	<0.02	mg/L	0.02				200.8	RLB

COMMENTS: FC28

INORGANIC CHEMICALS (IOCS) REPORT

2,3,4²

System ID No: 568203	System Name: Mt View Edgewood Water	
Lab/Sample No: 08962269	Date Collected: 07-27-16	DOH Source No: 310
Multiple Source Nos: NA	Sample Type: B	Sample Purpose: C
Date Received: 07-27-16	Date Reported: 07-28-16	Supervisor: LK
County: Pierce	Date Digested: NA	Group: (A) B Other
Sample Location: Well 1R - Sample Port		
Send Results & Bill To: Mt View Edgewood Water 11610 32nd Street E Edgewood, WA 98372		Remarks:

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS		Method/Analyst	
EPA REGULATED							Trigger?	MCL?		
4	Arsenic	0.001	mg/L	0.001	0.01	0.01	NO	NO	200.8	AMB
5	Barium	<0.1	mg/L	0.1	2	2			200.8	AMB
6	Cadmium	<0.001	mg/L	0.001	0.005	0.005			200.8	AMB
7	Chromium	<0.007	mg/L	0.007	0.1	0.1			200.8	AMB
11	Mercury	<0.0002	mg/L	0.0002	0.002	0.002			200.8	AMB
12	Selenium	<0.002	mg/L	0.002	0.05	0.05			200.8	AMB
110	Beryllium	<0.0003	mg/L	0.0003	0.004	0.004			200.8	AMB
112	Antimony	<0.003	mg/L	0.003	0.006	0.006			200.8	AMB
113	Thallium	<0.001	mg/L	0.001	0.002	0.002			200.8	AMB
116	Cyanide	<0.01	mg/L	0.01	0.2	0.2			4500-CNF	AMB
19	Fluoride	<0.2	mg/L	0.2	2	4			300.0	JSH
114	Nitrite - N	<0.1	mg/L	0.1	0.5	1			300.0	JSH
20	Nitrate - N	2.3	mg/L	0.2	5	10			300.0	JSH
161	Total Nitrate/Nitrite	2.3	mg/L	0.5	5	10	↓	↓	300.0	JSH
EPA REGULATED (Secondary)										
8	Iron	<0.1	mg/L	0.1		0.3		NO	3111B	AMB
10	Manganese	<0.01	mg/L	0.01		0.05			200.8	AMB
13	Silver	<0.01	mg/L	0.1		0.1			200.8	AMB
21	Chloride	6	mg/L	20		250			300.0	JSH
22	Sulfate	8	mg/L	50		250			300.0	JSH
24	Zinc	<0.2	mg/L	0.2		5		↓	200.8	AMB
STATE REGULATED										
14	Sodium	7	mg/L	5					200.8	AMB
15	Hardness	82	mg/L	10					2340C	PC
16	Conductivity	189	umhos/cm	70		700		NO	2510B	AMB
17	Turbidity	0.3	NTU	0.1					2130B	AMB
18	Color	<5.0	color units	15		15		NO	2120B	AMB
26	Total Dissolved Solids	NA	mg/L	100		500		—	2540C	—
111	Nickel	<0.005	mg/L	0.005					200.8	AMB
STATE UNREGULATED										
9	Lead	<0.001	mg/L	0.001					200.8	AMB
23	Copper	<0.02	mg/L	0.02					200.8	AMB

COMMENTS: **FL28**

INORGANIC CHEMICALS (IOCS) REPORT

System ID No: <u>568203</u>	System Name: <u>MtView - Edgewood Water Co</u>	
Lab/Sample No: <u>08958249</u>	Date Collected: <u>08-26-15</u>	DOH Source No: <u>S12</u>
Multiple Source Nos: <u>NA</u>	Sample Type: <u>B</u>	Sample Purpose: <u>C</u>
Date Received: <u>08-26-15</u>	Date Reported: <u>08-29-15</u>	Supervisor: <u>LMA</u>
County: <u>Pierce</u>	Date Digested: <u>NA</u>	Group: <u>(A)</u> B Other
Sample Location: <u>Sample tap</u>		
Send Results & Bill To: <u>MtView Edgewood Water Co</u> <u>11610 32nd Street E</u> <u>Edgewood, WA 98372</u>		Remarks:

DOH#	ANALYTES	RESULTS	UNITS	SRI	TRIGGER	MCL	EXCEEDS	Method/Analyst	
EPA REGULATED							Trigger?	MCL?	
4	Arsenic	<0.001	mg/L	0.001	0.01	0.01	NO	200.8	AMB
5	Barium	<0.1	mg/L	0.1	2	2		200.8	AMB
6	Cadmium	<0.001	mg/l.	0.001	0.005	0.005		200.8	AMB
7	Chromium	<0.007	mg/l.	0.007	0.1	0.1		200.8	AMB
11	Mercury	<0.0002	mg/L	0.0002	0.002	0.002		200.8	AMB
12	Selenium	<0.002	mg/L	0.002	0.05	0.05		200.8	AMB
110	Beryllium	<0.0003	mg/l.	0.0003	0.004	0.004		200.8	AMB
112	Antimony	<0.003	mg/L	0.003	0.006	0.006		200.8	AMB
113	Thallium	<0.001	mg/L	0.001	0.002	0.002		200.8	AMB
116	Cyanide	<0.01	mg/L	0.01	0.2	0.2		4500-CNF	KT
19	Fluoride	<0.2	mg/L	0.2	2	4		300.0	KT
114	Nitrite - N	<0.1	mg/L	0.1	0.5	1		300.0	KT
20	Nitrate - N	3.4	mg/l.	0.2	5	10		300.0	KT
161	Total Nitrate/Nitrite	3.4	mg/l.	0.5	5	10	↓	300.0	KT
EPA REGULATED (Secondary)									
8	Iron	<0.1	mg/L	0.1		0.3		3111B	AMB
10	Manganese	<0.01	mg/L	0.01		0.05		200.8	AMB
13	Silver	<0.01	mg/L	0.1		0.1		200.8	AMB
21	Chloride	7	mg/L	20		250		300.0	KT
22	Sulfate	11	mg/L	50		250		300.0	KT
24	Zinc	<0.2	mg/l.	0.2		5	↓	200.8	AMB
STATE REGULATED									
14	Sodium	8	mg/L	5				200.8	AMB
15	Hardness	105	mg/l.	10				2340C	KT
16	Conductivity	227	umhos/cm	70		700	NO	2510B	KT
17	Turbidity	<0.1	NTU	0.1				2130B	KT
18	Color	<5.0	color units	15		15	NO	2120B	KT
26	Total Dissolved Solids	NA	mg/l.	100		500	-	2540C	-
111	Nickel	<0.005	mg/L	0.005				200.8	AMB
STATE UNREGULATED									
9	Lead	0.001	mg/L	0.001				200.8	AMB
23	Copper	<0.02	mg/l.	0.02				200.8	AMB

COMMENTS: FC 28

S12 = Wells 9 & 11

INORGANIC CHEMICALS (IOC's) REPORT For LEAD & COPPER

System ID No.: 568203		System Name: Mt View - Edgewood Water Company	
DOH Source No: S93 (LCR)	Sample Type: B	Sample Purpose: C	
Date Received: 07-09-15	Date Reported: 07-17-15	Supervisor: <i>UK</i>	
Date Analyzed: 07-16-15	Analyst: JMB	Group: A	
County: Pierce		Sample Location: (see table below)	
Send To:	Mt View - Edgewood Water Company 11610 32nd Street E Edgewood, WA 98372	Bill To:	

DOH #	23 (Copper)	9 (Lead)
State Reporting Level (SRL)	0.02 mg/L	0.001 mg/L
Action Level (AL)	1.3 mg/L	0.015 mg/L
Test Method	200.8	200.8

Lab Sample No.	Date Collected	Site/Location	Copper (mg/L)	Lead (mg/L)
08954886	07-07-15	12002 42nd Street E	0.49	0.045
08954887	07-07-15	4101 122nd Avenue E	0.07	0.001
08954888	07-06-15	4420 110th Avenue E	0.08	0.002
08954889	07-07-15	11817 41st Street E	0.15	0.006
08954890	07-07-15	3819 110th Avenue E	0.18	<0.001
08954891	07-07-15	2611 103rd Avenue Court E	0.15	0.003
08954892	07-07-15	10510 45th Street Court E	0.27	0.007
08954893	07-07-15	3419 114th Avenue E	0.13	0.002
08954894	07-07-15	4510 106th Avenue E	0.22	0.003
08954895	07-07-15	11523 4th Street E	0.04	0.001
08954896	07-08-15	9516 31st Street Court E	1.2	0.006
08954897	07-07-15	8815 29Th Street Court E	0.47	0.002
08954898	07-07-15	10512 45th Street Court E	0.39	0.003
08954899	07-07-15	0117 35th Street Court E	0.15	<0.001
08954900	07-07-15	3015 106th Avenue E	0.56	0.002

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NOTES:

1mg/L is equivalent to 1 ppm

AL (Federal Action Levels): are 0.015 mg/L for Lead and 1.3 mg/L for Copper. If the concentrations exceed these levels, contact your regional DOH office for further information.

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

< : Indicates less than.

Comments: 08957666

Lead & Copper

INORGANIC CHEMICALS (IOC's) REPORT For LEAD & COPPER

System ID No.: 568203		System Name: Mt View - Edgewood Water Company	
DOH Source No: S93 (LCR)	Sample Type: B	Sample Purpose: C	
Date Received: 07-09-15	Date Reported: 07-17-15	Supervisor: <i>[Signature]</i>	
Date Analyzed: 07-16-15	Analyst: JMB	Group: A	
County: Pierce		Sample Location: (see table below)	
Send To:	Mt View - Edgewood Water Company 11610 32nd Street E Edgewood, WA 98372	Bill To:	

DOH #	23 (Copper)	9 (Lead)
State Reporting Level (SRL)	0.02 mg/L	0.001 mg/L
Action Level (AL)	1.3 mg/L	0.015 mg/L
Test Method	200.8	200.8

Lab Sample No.	Date Collected	Site/Location	Copper (mg/L)	Lead (mg/L)
08954901	07-08-15	12420 32nd Street E	0.22	0.002 ✓
08954902	07-07-15	604 106th Avenue Court E	0.11	0.001 ✓
08954903	07-07-15	12516 12th Street E	0.26	<0.001 ✓
08954904	07-07-15	12326 18th Street E	0.09	0.002 ✓
08954905	07-07-15	9608 29th Street Court E	0.16	0.003 ✓

NOTES:

- 1mg/L is equivalent to 1 ppm
- AL (Federal Action Levels): are 0.015 mg/L for Lead and 1.3 mg/L for Copper. If the concentrations exceed these levels, contact your regional DOH office for further information.
- SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).
- NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.
- ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
- < : Indicates less than.

INORGANIC CHEMICALS (IOCS) REPORT FOR NITRATES

System ID No: <u>568203</u>		System Name: <u>MtnView - Edgewood Water Co</u>	
Lab/Sample No: <u>08958251</u>		Date Collected: <u>08-26-15</u>	
Multiple Source Nos: <u>NA</u>		Sample Type: <u>B</u>	
Date Received: <u>08-26-15</u>		Date Reported: <u>08-27-15</u>	
		Supervisor: <u>LM</u>	
		Date Analyzed: <u>08-27-15</u>	
		Analyst: <u>KT</u>	
County: <u>Pierce</u>		Group: <u>(A)</u> B Other	
Sample Location: <u>Sample Port</u>			
Send Report & Bill To: <u>MtnView Edgewood Water Co</u>		Remarks:	
<u>11610 32nd Street E</u>			
<u>Edgewood, WA 98372</u>			

DOI#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS		Method/Analyst
							Trigger?	MCL?	
EPA REGULATED									
114	Nitrite - N	<u>NA</u>	mg/l	0.1	0.5	1			300.0
20	Nitrate - N	<u><0.2</u>	mg/l	0.2	5.0	10	<u>NO</u>	<u>NO</u>	300.0
161	Total Nitrate/Nitrite	<u>NA</u>	mg/l	0.5	5.0	10			300.0

NOTES:

- SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).
- Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.
- MCL (maximum contaminant level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
- NA (Not Analyzed): in the results column indicates this compound was not included in the current analysis.
- ND (Not Detected): in the results column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
- < (0.001): indicates the compound was not detected in the sample at or above the concentration indicated.

COMMENTS:

Nitrate

Sus: wells

INORGANIC CHEMICALS (IOCS) REPORT FOR NITRATES

System ID No: <u>568203</u>		System Name: <u>Mt View Edgewood Water</u>	
Lab/Sample No: <u>08962268</u>		Date Collected: <u>07-27-16</u>	DOH Source No: <u>506</u>
Multiple Source Nos: <u>NA</u>		Sample Type: <u>B</u>	Sample Purpose: <u>C</u>
Date Received: <u>07-27-16</u>		Date Reported: <u>07-28-16</u>	Supervisor: <u>AMB</u>
		Date Analyzed: <u>07-27-16</u>	Analyst: <u>JFH</u>
County: <u>Pierce</u>			Group: <u>(A)</u> B Other
Sample Location: <u>Well 6 Sample Port</u>			
Send Report & Bill To: <u>Mt View Edgewood Water</u>		Remarks:	
<u>11610 32nd Street E</u>			
<u>Edgewood, WA 98372</u>			

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS		Method/Analyst	
							Trigger?	MCL?		
EPA REGULATED										
114	Nitrite - N	<u>NA</u>	mg/l	0.1	0.5	1			300.0	
20	Nitrate - N	<u>1.6</u>	mg/l	0.2	5.0	10	<u>No</u>	<u>No</u>	300.0	<u>JFH</u>
161	Total Nitrate/Nitrite	<u>NA</u>	mg/l	0.5	5.0	10			300.0	

NOTES:

- SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).
- Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.
- MCL (maximum contaminant level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
- NA (Not Analyzed): in the results column indicates this compound was not included in the current analysis.
- ND (Not Detected): in the results column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
- < (0.001): indicates the compound was not detected in the sample at or above the concentration indicated.

COMMENTS:

Nitrate

INORGANIC CHEMICALS (IOCS) REPORT FOR NITRATES

#112

System ID No: <u>568203</u>		System Name: <u>MtView-Edgewood Water Co</u>	
Lab/Sample No: <u>08957990</u>		Date Collected: <u>08-06-15</u>	
Multiple Source Nos: <u>NA</u>		Sample Type: <u>B</u>	
Date Received: <u>08-06-15</u>		Date Reported: <u>08-07-15</u>	
		Supervisor: <u>[Signature]</u>	
		Date Analyzed: <u>08-06-15</u>	
		Analyst: <u>JGA</u>	
County: <u>Pierce</u>		Group: <u>(A)</u> B Other	
Sample Location: <u>Sample Port - Well #7</u>			
Send Report & Bill To: <u>MtView-Edgewood Water Co</u>		Remarks:	
<u>11610 32nd Street E</u>			
<u>Edgewood, WA 98372</u>			

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS		Method/Analyst	
							Trigger?	MCL?		
EPA REGULATED										
114	Nitrite - N	<u>NA</u>	mg/l	0.1	0.5	1			300.0	
20	Nitrate - N	<u>3.5</u>	mg/l	0.2	5.0	10	<u>No</u>	<u>No</u>	300.0	<u>JGA</u>
161	Total Nitrate/Nitrite	<u>NA</u>	mg/l	0.5	5.0	10			300.0	

NOTES:

- SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).
- Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.
- MCL (maximum contaminant level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
- NA (Not Analyzed): in the results column indicates this compound was not included in the current analysis.
- ND (Not Detected): in the results column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
- < (0.001): indicates the compound was not detected in the sample at or above the concentration indicated.

COMMENTS:

Nitrate

INORGANIC CHEMICALS (IOCS) REPORT FOR NITRATES

System ID No: <u>568203</u>		System Name: <u>Mtn View Edgewood Water</u>	
Lab/Sample No: <u>08962267</u>		Date Collected: <u>07-27-16</u>	DOH Source No: <u>308</u>
Multiple Source Nos: <u>NA</u>		Sample Type: <u>B</u>	Sample Purpose: <u>C</u>
Date Received: <u>07-27-16</u>	Date Reported: <u>07-28-16</u>	Supervisor: <u>MS</u>	
	Date Analyzed: <u>07-27-16</u>	Analyst: <u>JGH</u>	
County: <u>Pierce</u>			Group: <u>A</u> B Other
Sample Location: <u>Well 8 Sample Port</u>			
Send Report & Bill To: <u>Mtn View Edgewood Water</u>			Remarks:
<u>11610 30th Street E</u>			
<u>Edgewood, WA 98372</u>			

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS		Method/Analyst	
							Trigger?	MCL?		
EPA REGULATED										
114	Nitrite - N	<u>NA</u>	mg/l	0.1	0.5	1			300.0	
20	Nitrate - N	<u>1.9</u>	mg/l	0.2	5.0	10	<u>No</u>	<u>No</u>	300.0	<u>JGA</u>
161	Total Nitrate/Nitrite	<u>NA</u>	mg/l	0.5	5.0	10			300.0	

NOTES:

SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).
 Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.
 MCL (maximum contaminant level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
 NA (Not Analyzed): in the results column indicates this compound was not included in the current analysis.
 ND (Not Detected): in the results column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
 < (0.001): indicates the compound was not detected in the sample at or above the concentration indicated.

COMMENTS:

Nitrate

INORGANIC CHEMICALS (IOCS) REPORT

21314²

System ID No: 568203	System Name: Mt View Edgewood Water		
Lab/Sample No: 08962269	Date Collected: 07-27-16	DOH Source No: 310	
Multiple Source Nos: NA	Sample Type: B	Sample Purpose: C	
Date Received: 07-27-16	Date Reported: 07-28-16	Supervisor: LKC	
County: Pierce	Date Digested: NA	Group: (A) B Other	
Sample Location: Well 1R-sample Port			
Send Results & Bill To: Mt View Edgewood Water		Remarks:	
11610 32nd Street E			
Edgewood, WA 98372			

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS		Method/Analyst
EPA REGULATED							Trigger?	MCL?	
4	Arsenic	0.001	mg/L	0.001	0.01	0.01	NO	NO	200.8 <i>AMB</i>
5	Barium	<0.1	mg/L	0.1	2	2			200.8 <i>AMB</i>
6	Cadmium	<0.001	mg/L	0.001	0.005	0.005			200.8 <i>AMB</i>
7	Chromium	<0.007	mg/L	0.007	0.1	0.1			200.8 <i>AMB</i>
11	Mercury	<0.0002	mg/L	0.0002	0.002	0.002			200.8 <i>AMB</i>
12	Selenium	<0.002	mg/L	0.002	0.05	0.05			200.8 <i>AMB</i>
110	Beryllium	<0.0003	mg/L	0.0003	0.004	0.004			200.8 <i>AMB</i>
112	Antimony	<0.003	mg/L	0.003	0.006	0.006			200.8 <i>AMB</i>
113	Thallium	<0.001	mg/L	0.001	0.002	0.002			200.8 <i>AMB</i>
116	Cyanide	<0.01	mg/L	0.01	0.2	0.2			4500-CNF <i>AMB</i>
19	Fluoride	<0.2	mg/L	0.2	2	4			300.0 <i>JSF</i>
114	Nitrite - N	<0.1	mg/L	0.1	0.5	1			300.0 <i>JSF</i>
20	Nitrate - N	2.3	mg/L	0.2	5	10			300.0 <i>JSF</i>
161	Total Nitrate/Nitrite	2.3	mg/L	0.5	5	10			300.0 <i>JSF</i>
EPA REGULATED (Secondary)									
8	Iron	<0.1	mg/L	0.1		0.3		NO	3111B <i>AMB</i>
10	Manganese	<0.01	mg/L	0.01		0.05			200.8 <i>AMB</i>
13	Silver	<0.01	mg/L	0.1		0.1			200.8 <i>AMB</i>
21	Chloride	6	mg/L	20		250			300.0 <i>JSF</i>
22	Sulfate	0	mg/L	50		250			300.0 <i>JSF</i>
24	Zinc	<0.2	mg/L	0.2		5			200.8 <i>AMB</i>
STATE REGULATED									
14	Sodium	7	mg/L	5					200.8 <i>AMB</i>
15	Hardness	82	mg/L	10					2340C <i>PC</i>
16	Conductivity	189	umhos/cm	70		700		NO	2510B <i>AMB</i>
17	Turbidity	0.3	NTU	0.1					2130B <i>AMB</i>
18	Color	<5.0	color units	15		15		NO	2120B <i>AMB</i>
26	Total Dissolved Solids	NA	mg/L	100		500			2540C <i>—</i>
111	Nickel	<0.005	mg/L	0.005					200.8 <i>AMB</i>
STATE UNREGULATED									
9	Lead	<0.001	mg/L	0.001					200.8 <i>AMB</i>
23	Copper	<0.02	mg/L	0.02					200.8 <i>AMB</i>

COMMENTS: **FL28**



1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

INORGANIC CHEMICALS (IOCS) REPORT FOR NITRATES

System ID No: 568203		System Name: Mtn View Edgewood Water	
Lab/Sample No: 08962266		Date Collected: 07-27-16	DOH Source No: S12
Multiple Source Nos: NA		Sample Type: B	Sample Purpose: C
Date Received: 07-27-16		Date Reported: 07-28-16	Supervisor: MS
		Date Analyzed: 07-27-16	Analyst: JGH
County: Pierce		Group: A B Other	
Sample Location: Sample port Wellfield 9+11			
Send Report & Bill To: Mtn View Edgewood Water		Remarks:	
11610 32nd Street E			
Edgewood, WA 98372			

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS		Method/Analyst	
							Trigger?	MCL?		
EPA REGULATED										
114	Nitrite - N	NA	mg/l	0.1	0.5	1			300.0	
20	Nitrate - N	3.5	mg/l	0.2	5.0	10	No	No	300.0	JGH
161	Total Nitrate/Nitrite	NA	mg/l	0.5	5.0	10			300.0	

NOTES:

SRL (State Reporting Level): indicates the minimum reporting level required by the Washington Department of Health (DOH).
 Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.
 MCL (maximum contaminant level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
 NA (Not Analyzed): in the results column indicates this compound was not included in the current analysis.
 ND (Not Detected): in the results column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
 < (0.001): indicates the compound was not detected in the sample at or above the concentration indicated.

COMMENTS:

Nitrate

RADIONUCLIDE ANALYSIS REPORT
EPA 904.0
RADIUM 228

System ID No.: 568203		System Name: Mt. View - Edgewood Water Company	
Lab/Sample No.: 08991304		Date Collected: 07-28-10	DOH Source No.: S05
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 07-28-10	Date Reported: 09-09-10	Supervisor: <i>OMB</i>	
	Date Analyzed: 08-26-10	Analyst: TA	
County: Pierce		Group: A	
Sample Location: Well #5 / Sample Port in Wellhouse			
Send To: Mt. View - Edgewood Water Company 11610 32nd St E Edgewood, WA 98372		Remarks:	

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
166	Radium 228	ND	pCi/L	1.0	1.0	5.0	NO	NO

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level.

MCL (Federal Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

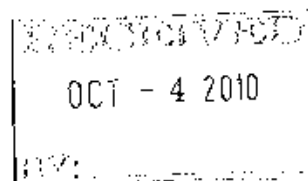
<: Indicates less than.

Comments :

TA NO: J0H060421-4

WA LAB NO: 028

Method EPA 904.0: RL-RA-001





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(253) 531-5121

RADIONUCLIDE ANALYSIS REPORT

System ID No.: 568203	System Name: Mt View Edgewood Water Co.		
Lab Sample No.: 06992091	Date Collected: 09/22/15	DOH Source No: S06	
Multiple Source Nos.: N/A	Sample Type: B	Sample Purpose: C	
County: Pierce	Group: A	Analyst: TA	Supervisor: <i>PHS</i>
Date Received: 09/22/15	Date Reported: 10/27/15		
Sample Location: Well #6, Sample Port			
Send To: Mt View Edgewood Water Co. 11610 32nd St E Edgewood, WA 98372			
Comments:			

DOH #	ANALYTES	ANALYSIS DATE	RESULTS	UNITS	SRL	TRIGGER	EXCEEDS		METHOD	
							MCL	MCL		
EPA REGULATED										
165	Gross Alpha	10/23/15	ND	pCi/L	3.0	3.0	15.0	NO	NO	EPA 900.0: RL-GPC-001
166	Radium 226	10/20/15	ND	pCi/L	1.0	1.0	5.0*	NO	NO	EPA 904.0: RL-RA-001
42	Gross Beta	NA	NA	pCi/L	4.0	4.0	50.0	NA	NA	EPA 900.0: RL-GPC-001
39	Radium 226	NA	NA	pCi/L	1.0	1.0	5.0*	NA	NA	EPA 903.1
N/A	Radon 222	NA	NA	pCi/L	50.0	N/A	300	NA	NA	EPA 913.0

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).
 MDL (Minimum Detection Level) Lowest valid detection level.
 MCL (Federal Maximum Contaminant Level): Levels found above this amount should take steps to mitigate levels and/or confer with DOH.
 NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.
 ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
 * A Maximum Contaminant Level of 5pCi/L total is allowed for Radium 226 & Radium 228

Comments:

TA NO: J51280421-1

WA LAB NO: 028



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C:253 931-3121

RADIONUCLIDE ANALYSIS REPORT

System ID No.: 568203	System Name: Mt View Edgewood Water Co.	DOH Source No: S07
Lab Sample No.: 08992092	Date Collected: 09/22/15	Sample Purpose: C
Multiple Source Nos.: N/A	Sample Type: B	Analyst: TA
County: Pierce	Group: A	Supervisor: <i>AMB</i>
Date Received: 09/22/15	Date Reported: 10/27/15	
Sample Location: Well #7, Sample Port	Comments:	
Send To: Mt View Edgewood Water Co. 11610 32nd St E Edgewood, WA 98372		

DOH #	ANALYTES	ANALYSIS DATE	RESULTS	UNITS	SRL		TRIGGER	MCL	EXCEEDS		METHOD
					EPA REGULATED	Trigger			MCL	MCL	
165	Gross Alpha	10/23/15	ND	pCi/L	3.0	3.0	3.0	15.0	NO	NO	EPA 900.0: RL-GPC-001
166	Radium 228	10/20/15	ND	pCi/L	1.0	1.0	1.0	5.0*	NO	NO	EPA 904.0: RL-RA-001
42	Gross Beta	NA	NA	pCi/L	4.0	4.0	4.0	50.0	NA	NA	EPA 900.0: RL-GPC-001
39	Radium 226	NA	NA	pCi/L	1.0	1.0	1.0	5.0*	NA	NA	EPA 903.1
N/A	Radon 222	NA	NA	pCi/L	50.0	N/A	N/A	300	NA	NA	EPA 913.0

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

MDL (Minimum Detection Level) Lowest valid detection level.

MCL (Federal Maximum Contaminant Level): Levels found above this amount should take steps to mitigate levels and/or confer with DOH.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

* A Maximum Contaminant Level of 5pCi/L total is allowed for Radium 226 & Radium 228

Comments:

TA NO: J51280421-2

WA LAB NO: 028



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(253) 531-5121

RADIONUCLIDE ANALYSIS REPORT

System ID No.: 568203	System Name: Mt View Edgewood Water Co.		
Lab Sample No.: 08992093	Date Collected: 09/22/15	DOH Source No: S08	
Multiple Source Nos.: N/A	Sample Type: B	Sample Purpose: C	
County: Pierce	Group: A	Analyst: TA	
Date Received: 09/22/15	Date Reported: 10/27/15	Supervisor: <i>Andy</i>	
Sample Location: Well #8, Sample Port			
Send To: Mt View Edgewood Water Co. 11610 32nd St E Edgewood, WA 98372			
Comments:			

DOH #	ANALYTES	ANALYSIS DATE	RESULTS	UNITS	SRL	TRIGGER	EXCEEDS		METHOD
							MCL	MCL	
EPA REGULATED									
165	Gross Alpha	10/23/15	ND	pCi/L	3.0	3.0	NO	NO	EPA 900.0: RL-GPC-001
166	Radium 226	10/20/15	ND	pCi/L	1.0	1.0	NO	NO	EPA 904.0: RL-RA-001
42	Gross Beta	NA	NA	pCi/L	4.0	4.0	NA	NA	EPA 900.0: RL-GPC-001
39	Radium 226	NA	NA	pCi/L	1.0	1.0	NA	NA	EPA 903.1
N/A	Radon 222	NA	NA	pCi/L	50.0	N/A	NA	NA	EPA 913.0

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).
 MDL (Minimum Detection Level): Lowest valid detection level.
 MCL (Federal Maximum Contaminant Level): Levels found above this amount should take steps to mitigate levels and/or confer with DOH.
 NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.
 ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
 * A Maximum Contaminant Level of 5pCi/L total is allowed for Radium 226 & Radium 228

Comments:

TA NO: J51280421-3
 WA LAB NO: 028

RADIONUCLIDE ANALYSIS REPORT
EPA 904.0
RADIUM 228

RECEIVED
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 MTVE

System ID No.: 568203		System Name: Mt View - Edgewood Water Company	
Lab/Sample No.: 08990646		Date Collected: 08-18-09	DOH Source No.: S10
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 08-19-09	Date Reported: 09-18-09	Supervisor: <i>L. J. [Signature]</i>	
Date Extracted: N/A	Date Analyzed: 09-08-09	Analyst: TA	
County: Pierce		Group: A	
Sample Location: Sample Port in Wellhouse			
Send To: Mt View - Edgewood Water Company 11610 - 32nd St E Edgewood, WA 98372		Remarks:	

S10 = Well # 1

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
166	Radium 228	ND	pCi/L	1.0	1.0	5.0	NO	NO

NOTES:

- SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).
- Trigger Level: DOH Drinking Water response level.
- MCL (Federal Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
- NA (Not Analyzed): in the RESULTS column indicates this compound was not included in the current analysis.
- ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
- <: Indicates less than.

Comments :

TA NO: J9H240120-3
WA LAB NO: 028

Method EPA 904.0: Radium 228



1515 80th St. E.
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RADIONUCLIDE ANALYSIS REPORT

System ID No.: 568203	System Name: Mt View - Edgewood Water Co.		
Lab Sample No.: 08991615	Date Collected: 03/21/11	DOH Source No: S12	
Multiple Source Nos.: N/A	Sample Type: B	Sample Purpose: C	
Date Received: 03/21/11	Date Reported: 05/04/11	Supervisor: <i>DND</i>	
County: Pierce	Group: A	Analyst: TA	
Sample Location: Wellfield (Wells 9 & 11)			
Send To: Mt View - Edgewood Water Co. 11610 32nd Street East Edgewood, WA 98372			
Comments:			

DOH #	ANALYTES	ANALYSIS DATE	RESULTS	UNITS	EPA REGULATED		EXCEEDS		METHOD
					SRL	TRIGGER	MCL	MCL	
165	Gross Alpha	04/21/11	ND	pCi/L	3.0	3.0	15.0	NO	EPA 900.0: RL-GPC-001
166	Radium 228	04/26/11	ND	pCi/L	1.0	1.0	5.0*	NO	EPA 904.0: RL-RA-001
42	Gross Beta	NA	NA	pCi/L	4.0	4.0	50.0	NA	EPA 900.0: RL-GPC-001
39	Radium 226	NA	NA	pCi/L	1.0	1.0	5.0*	NA	EPA 903.1
N/A	Radon 222	NA	NA	pCi/L	50.0	N/A	300	NA	EPA 913.0

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).
 MDL (Minimum Detection Level) Lowest valid detection level.
 MCL (Federal Maximum Contaminant Level): Levels found above this amount should take steps to mitigate levels and/or confer with DOH.
 NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.
 ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
 * A Maximum Contaminant Level of 5pCi/L total is allowed for Radium 226 & Radium 228

Comments:

TA NO: J1D050584-1
WA LAB NO: 028



WATER MANAGEMENT LABORATORIES INC.

SEP 18 2009
MSTVE

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT EPA TEST METHOD - 525.2 WA DOH TEST PANEL: PEST1

System ID No.: 568203		System Name: Mt View - Edgewood Water Company	
Lab/Sample No.: 08988607		Date Collected: 08/24/09	DOH Source No.: S05
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 08/24/09	Date Reported: 09/02/09	Supervisor: <i>WMA</i>	
Date Extracted: 08/27/09	Date Analyzed: 08/28/09	Analyst: WMA	
County: Pierce		Group: A	
Sample Location: Sample Port in Wellhouse			
Send To: Mt View - Edgewood Water Company 11610 - 32nd St E Edgewood, WA 98372		Remarks:	

S05 = Well # 5

DOH #		RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
33	Endrin	ND	ug/L	0.05	0.02	2	NO	NO
34	Lindane (HCH gamma)	ND	ug/L	0.04	0.04	0.2	NO	NO
35	Methoxychlor	ND	ug/L	10	10	40	NO	NO
36	Toxaphene	ND	ug/L	1	1	3	NO	NO
117	Alachlor	ND	ug/L	0.4	0.4	2	NO	NO
119	Atrazine	ND	ug/L	0.5	0.5	3	NO	NO
120	Benzo(a)pyrene	ND	ug/L	0.04	0.04	0.2	NO	NO
122	Chlordane (total)	ND	ug/L	0.4	0.4	2	NO	NO
124	Di(ethylhexyl)adipate	ND	ug/L	1.3	1.3	400	NO	NO
125	Di(ethylhexyl)phthalate	ND	ug/L	1.3	1.3	6	NO	NO
126	Heptachlor	ND	ug/L	0.09	0.09	0.4	NO	NO
127	Heptachlor epoxide	ND	ug/L	0.1	0.1	0.2	NO	NO
128	Hexachlorobenzene	ND	ug/L	0.5	0.5	1	NO	NO
129	Hexachlorocyclopentadiene	ND	ug/L	0.5	0.5	50	NO	NO
133	Simazine	ND	ug/L	0.15	0.15	4	NO	NO
134	Pentachlorophenol	ND	ug/L	0.2	0.2	1	NO	NO
EPA UNREGULATED								
121	Butachlor	ND	ug/L	0.4			NA	NA
123	Dieldrin	ND	ug/L	0.1			NA	NA
130	Metolachlor	ND	ug/L	1			NA	NA
131	Metribuzin	ND	ug/L	0.2			NA	NA
132	Propachlor	ND	ug/L	0.1			NA	NA
254	Fluorene	ND	ug/L	0.2			NA	NA
179	Bromacil	ND	ug/L	0.2			NA	NA
153	PCB (as total arochlors)	ND	ug/L	0.2			NA	NA
173	Arochlor 1221	ND	ug/L	100			NA	NA
174	Arochlor 1232	ND	ug/L	2.5			NA	NA
175	Arochlor 1242	ND	ug/L	1.5			NA	NA
176	Arochlor 1248	ND	ug/L	0.5			NA	NA
177	Arochlor 1254	ND	ug/L	0.5			NA	NA
178	Arochlor 1260	ND	ug/L	1.0			NA	NA
180	Arochlor 1016	ND	ug/L	0.4			NA	NA



WATER MANAGEMENT LABORATORIES INC.

SEP 18 2009
MOUNTAIN VIEW

1515 80th St. E.
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(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT EPA TEST METHOD - 515.1 WA DOH TEST PANEL: HERB1

System ID No.: 568203		System Name: Mt. View-Edgewood Water Co.	
Lab/Sample No.: 08988607		Date Collected: 08/24/09	DOH Source No.: S05
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 08/24/09	Date Reported: 08/31/09	Supervisor: <i>UR</i>	
Date Extracted: 08/27/09	Date Analyzed: 08/28/09	Analyst: RL	
County: Pierce		Group: A	
Sample Location: Sample Port in Wellhouse			
Send To: Mt. View-Edgewood Water Co. 11610 32nd St E Edgewood, WA 98372		Remarks:	

S05 = Well #5

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
37	2,4 - D	ND	ug/L	0.5	0.5	70	NO	NO
38	2,4,5 - TP (Silvex)	ND	ug/L	1.0	1.0	50	NO	NO
134	Pentachlorophenol	ND	ug/L	0.20	0.20	1	NO	NO
137	Dalapon	ND	ug/L	5.0	5.0	200	NO	NO
139	Dinoseb	ND	ug/L	1.0	1.0	7	NO	NO
140	Picloram	ND	ug/L	0.5	0.5	500	NO	NO
EPA UNREGULATED								
135	2,4 - DB	ND	ug/L	1.0			NA	NA
138	Dicamba	ND	ug/L	0.2			NA	NA
222	Total DCPA (Dacthal)	ND	ug/L	0.1			NA	NA
223	Acifluorfen	ND	ug/L	2.0			NA	NA
224	Chloramben	ND	ug/L	0.2			NA	NA
225	DCPA Acid Metabolites (A)	ND	ug/L	0.1			NA	NA
226	3,5-Dichlorobenzoic Acid	ND	ug/L	0.5			NA	NA
228	4 - Nitrophenol	ND	ug/L	0.5			NA	NA

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

<: Indicates less than.

Comments:

Method 515.1: Herbicides



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Tacoma, WA 98404
(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT
EPA TEST METHOD - 525.2
WA DOH TEST PANEL: PEST1

System ID No.: 568203		System Name: Mt View - Edgewood Water Company	
Lab/Sample No.: 08988050		Date Collected: 05/21/09	DOH Source No.: S06
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 05/21/09	Date Reported: 06/03/09	Supervisor: <i>OMB</i>	
Date Extracted: 05/21/09	Date Analyzed: 05/27/09	Analyst: WMA	
County: Pierce		Group: A	
Sample Location: Sample Port in Wellhouse			
Send To: Mt View - Edgewood Water Company 11610 - 32nd St E Edgewood, WA 98372			Remarks:

DOH #		RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
33	Endrin	ND	ug/L	0.05	0.02	2	NO	NO
34	Lindane (HCH gamma)	ND	ug/L	0.04	0.04	0.2	NO	NO
35	Methoxychlor	ND	ug/L	10	10	40	NO	NO
36	Toxaphene	ND	ug/L	1	1	3	NO	NO
117	Alachlor	ND	ug/L	0.4	0.4	2	NO	NO
119	Atrazine	ND	ug/L	0.5	0.5	3	NO	NO
120	Benzo(a)pyrene	ND	ug/L	0.04	0.04	0.2	NO	NO
122	Chlordane (total)	ND	ug/L	0.4	0.4	2	NO	NO
124	Di(ethylhexyl)adipate	ND	ug/L	1.3	1.3	400	NO	NO
125	Di(ethylhexyl)phthalate	ND	ug/L	1.3	1.3	6	NO	NO
126	Heptachlor	ND	ug/L	0.09	0.09	0.4	NO	NO
127	Heptachlor epoxide	ND	ug/L	0.1	0.1	0.2	NO	NO
128	Hexachlorobenzene	ND	ug/L	0.5	0.5	1	NO	NO
129	Hexachlorocyclopentadiene	ND	ug/L	0.5	0.5	50	NO	NO
133	Simazine	ND	ug/L	0.15	0.15	4	NO	NO
134	Pentachlorophenol	ND	ug/L	0.2	0.2	1	NO	NO
EPA UNREGULATED								
121	Butachlor	ND	ug/L	0.4			NA	NA
123	Dieldrin	ND	ug/L	0.1			NA	NA
130	Metolachlor	ND	ug/L	1			NA	NA
131	Metribuzin	ND	ug/L	0.2			NA	NA
132	Propachlor	ND	ug/L	0.1			NA	NA
254	Fluorene	ND	ug/L	0.2			NA	NA
179	Bromacil	ND	ug/L	0.2			NA	NA
153	PCB (as total arochlors)	ND	ug/L	0.2			NA	NA
173	Arochlor 1221	ND	ug/L	100			NA	NA
174	Arochlor 1232	ND	ug/L	2.5			NA	NA
175	Arochlor 1242	ND	ug/L	1.5			NA	NA
176	Arochlor 1248	ND	ug/L	0.5			NA	NA
177	Arochlor 1254	ND	ug/L	0.5			NA	NA
178	Arochlor 1260	ND	ug/L	1.0			NA	NA
180	Arochlor 1016	ND	ug/L	0.4			NA	NA



WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC'S) ANALYSIS REPORT EPA TEST METHOD - 515.1 WA DOH TEST PANEL: HERB1

System ID No.: 568203		System Name: Mt View Edgewood Water Co.	
Lab/Sample No.: 08988050		Date Collected: 05/21/09	DOH Source No.: S06
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 05/21/09	Date Reported: 06/09/09	Supervisor: <i>J. Smith</i>	
Date Extracted: 05/29/09	Date Analyzed: 06/03/09	Analyst: RL	
County: Pierce		Group: A	
Sample Location: Sample Port in Wellhouse			
Send To: Mt View Edgewood Water Co. 11610 32nd St. E Edgewood, WA 98372			Remarks:

S06 = Well 6

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Trigger?	MCL?
EPA REGULATED									
37	2,4 - D	ND	ug/L	0.5	0.5	70	NO	NO	
38	2,4,5 - TP (Silvex)	ND	ug/L	1.0	1.0	50	NO	NO	
134	Pentachlorophenol	ND	ug/L	0.20	0.20	1	NO	NO	
137	Dalapon	ND	ug/L	5.0	5.0	200	NO	NO	
139	Dinoseb	ND	ug/L	1.0	1.0	7	NO	NO	
140	Picloram	ND	ug/L	0.5	0.5	500	NO	NO	
EPA UNREGULATED									
135	2,4 - DB	ND	ug/L	1.0			NA	NA	
138	Dicamba	ND	ug/L	0.2			NA	NA	
222	Total DCPA (Dacthal)	ND	ug/L	0.1			NA	NA	
223	Acifluorfen	ND	ug/L	2.0			NA	NA	
224	Chloramben	ND	ug/L	0.2			NA	NA	
225	DCPA Acid Metabolites (A)	ND	ug/L	0.1			NA	NA	
226	3,5-Dichlorobenzoic Acid	ND	ug/L	0.5			NA	NA	
228	4 - Nitrophenol	ND	ug/L	0.5			NA	NA	

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

<: Indicates less than.

Comments:

Method 515.1: Herbicides



WATER MANAGEMENT LABORATORIES INC.

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1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT EPA TEST METHOD - 525.2 WA DOH TEST PANEL: PEST1

System ID No.: 568203		System Name: Mt View - Edgewood Water Company	
Lab/Sample No.: 08988606		Date Collected: 08/24/09	
Multiple Source Nos.: N/A		Sample Type: B	
Date Received: 08/24/09		Date Reported: 09/02/09	
Date Extracted: 08/27/09		Date Analyzed: 08/28/09	
County: Pierce		Supervisor: WMA	
Sample Location: Sample Port in Wellhouse		Analyst: WMA	
Send To: Mt View - Edgewood Water Company 11610 - 32nd St E Edgewood, WA 98372		Group: A	
		Remarks:	

S07 = Well # 7

DOH #		RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
33	Endrin	ND	ug/L	0.05	0.02	2	NO	NO
34	Lindane (HCH gamma)	ND	ug/L	0.04	0.04	0.2	NO	NO
35	Methoxychlor	ND	ug/L	10	10	40	NO	NO
36	Toxaphene	ND	ug/L	1	1	3	NO	NO
117	Alachlor	ND	ug/L	0.4	0.4	2	NO	NO
119	Atrazine	ND	ug/L	0.5	0.5	3	NO	NO
120	Benzo(a)pyrene	ND	ug/L	0.04	0.04	0.2	NO	NO
122	Chlordane (total)	ND	ug/L	0.4	0.4	2	NO	NO
124	Di(ethylhexyl)adipate	ND	ug/L	1.3	1.3	400	NO	NO
125	Di(ethylhexyl)phthalate	ND	ug/L	1.3	1.3	6	NO	NO
126	Heptachlor	ND	ug/L	0.09	0.09	0.4	NO	NO
127	Heptachlor epoxide	ND	ug/L	0.1	0.1	0.2	NO	NO
128	Hexachlorobenzene	ND	ug/L	0.5	0.5	1	NO	NO
129	Hexachlorocyclopentadiene	ND	ug/L	0.5	0.5	50	NO	NO
133	Simazine	ND	ug/L	0.15	0.15	4	NO	NO
134	Pentachlorophenol	ND	ug/L	0.2	0.2	1	NO	NO
EPA UNREGULATED								
121	Butachlor	ND	ug/L	0.4			NA	NA
123	Dieldrin	ND	ug/L	0.1			NA	NA
130	Metolachlor	ND	ug/L	1			NA	NA
131	Metribuzin	ND	ug/L	0.2			NA	NA
132	Propachlor	ND	ug/L	0.1			NA	NA
254	Fluorene	ND	ug/L	0.2			NA	NA
179	Bromacil	ND	ug/L	0.2			NA	NA
163	PCB (as total arochlors)	ND	ug/L	0.2			NA	NA
173	Arochlor 1221	ND	ug/L	100			NA	NA
174	Arochlor 1232	ND	ug/L	2.5			NA	NA
175	Arochlor 1242	ND	ug/L	1.5			NA	NA
176	Arochlor 1248	ND	ug/L	0.5			NA	NA
177	Arochlor 1254	ND	ug/L	0.5			NA	NA
178	Arochlor 1260	ND	ug/L	1.0			NA	NA
180	Arochlor 1016	ND	ug/L	0.4			NA	NA



WATER MANAGEMENT LABORATORIES INC.

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Tacoma, WA 98404
(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT EPA TEST METHOD - 515.1 WA DOH TEST PANEL: HERBI

System ID No.: 568203		System Name: Mt. View-Edgewood Water Co.	
Lab/Sample No.: 08988606		Date Collected: 08/24/09	DOH Source No.: S07
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 08/24/09	Date Reported: 08/31/09		Supervisor: <i>WIL</i>
Date Extracted: 08/27/09	Date Analyzed: 08/28/09		Analyst: RL
County: Pierce		Group: A	
Sample Location: Sample Port in Wellhouse			
Send To: Mt. View-Edgewood Water Co. 11610 32nd St E Edgewood, WA 98372			Remarks:

S07 = Well #7

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
37	2,4 - D	ND	ug/L	0.5	0.5	70	NO	NO
38	2,4,5 - TP (Silvex)	ND	ug/L	1.0	1.0	50	NO	NO
134	Pentachlorophenol	ND	ug/L	0.20	0.20	1	NO	NO
137	Dalapon	ND	ug/L	5.0	5.0	200	NO	NO
139	Dinoseb	ND	ug/L	1.0	1.0	7	NO	NO
140	Picloram	ND	ug/L	0.5	0.5	500	NO	NO
EPA UNREGULATED								
135	2,4 - DB	ND	ug/L	1.0			NA	NA
138	Dicamba	ND	ug/L	0.2			NA	NA
222	Total DCPA (Dacthal)	ND	ug/L	0.1			NA	NA
223	Acifluorfen	ND	ug/L	2.0			NA	NA
224	Chloramben	ND	ug/L	0.2			NA	NA
225	DCPA Acid Metabolites (A)	ND	ug/L	0.1			NA	NA
226	3,5-Dichlorobenzoic Acid	ND	ug/L	0.5			NA	NA
228	4 - Nitrophenol	ND	ug/L	0.5			NA	NA

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

<: Indicates less than.

Comments:

Method 515.1: Herbicides



WATER MANAGEMENT LABORATORIES INC.

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SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT EPA TEST METHOD - EPA 525.2 WA DOH TEST PANEL: PEST1

System ID No.: 568203		System Name: Mt View - Edgewood Water Co.	
Lab/Sample No.: 08984610		Date Collected: 09/22/15	DOH Source No.: S08
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 09/23/15	Date Analyzed: 09/25/15	Analyst: LHL	
Date Extracted: 09/24/15	Date Reported: 09/29/15	Supervisor: <i>AMS</i>	
County: Pierce		Group: A	
Sample Location: Well #8, Sample Port			
Send To: Mt View - Edgewood Water Co. 11610 - 32nd St E Edgewood, WA 98372			Remarks:

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
33	Endrin	ND	ug/L	0.05	0.05	2	NO	NO
34	Lindane (BHC-gamma)	ND	ug/L	0.04	0.04	0.2	NO	NO
35	Methoxychlor	ND	ug/L	10	10	40	NO	NO
36	Toxaphene	ND	ug/L	1	1	3	NO	NO
117	Alachlor	ND	ug/L	0.4	0.4	2	NO	NO
119	Atrazine	ND	ug/L	0.5	0.5	3	NO	NO
120	Benzo(a)pyrene	ND	ug/L	0.04	0.04	0.2	NO	NO
122	Chlordane (total)	ND	ug/L	0.4	0.4	2	NO	NO
124	Di(ethylhexyl)adipate	ND	ug/L	1.3	1.3	400	NO	NO
125	Di(ethylhexyl)phthalate	ND	ug/L	1.3	1.3	6	NO	NO
126	Heptachlor	ND	ug/L	0.09	0.09	0.4	NO	NO
127	Heptachlor epoxide	ND	ug/L	0.1	0.1	0.2	NO	NO
128	Hexachlorobenzene	ND	ug/L	0.5	0.5	1	NO	NO
129	Hexachlorocyclopentadiene	ND	ug/L	0.5	0.5	50	NO	NO
133	Simazine	ND	ug/L	0.15	0.15	4	NO	NO
134	Pentachlorophenol	ND	ug/L	0.2	0.2	1	NO	NO
153	PCB (as total arochlors)	ND	ug/L	0.2			NA	NA
173	Arochlor 1221	ND	ug/L	100			NA	NA
174	Arochlor 1232	ND	ug/L	2.5			NA	NA
175	Arochlor 1242	ND	ug/L	1.5			NA	NA
176	Arochlor 1248	ND	ug/L	0.5			NA	NA
177	Arochlor 1254	ND	ug/L	0.5			NA	NA
178	Arochlor 1260	ND	ug/L	1.0			NA	NA
180	Arochlor 1016	ND	ug/L	0.4			NA	NA
EPA UNREGULATED								
121	Butachlor	ND	ug/L	0.4			NA	NA
123	Dieldrin	ND	ug/L	0.1			NA	NA
130	Metolachlor	ND	ug/L	1			NA	NA
131	Metribuzin	ND	ug/L	0.2			NA	NA
132	Propachlor	ND	ug/L	0.1			NA	NA
254	Fluorene	ND	ug/L	0.2			NA	NA
179	Bromacil	ND	ug/L	0.2			NA	NA



1515 80th St. E.
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SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT
EPA TEST METHOD - EPA 515.1
WA DOH TEST PANEL: HERB1

System ID No.: 568203		System Name: Mt. View - Edgewood Water Company	
Lab/Sample No.: 08984610		Date Collected: 09-22-15	DOH Source No.: S08
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 09-23-15	Date Analyzed: 09-25-15		Analyst: JGH
Date Extracted: 09-24-15	Date Reported: 09-28-15		Supervisor: <i>[Signature]</i>
County: Pierce		Group: A	
Sample Location: Well 8 - Sample Port			
Send To: Mt. View - Edgewood Water Company 11610 32nd St E Edgewood, WA 98372			Remarks:

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
37	2,4 - D	ND	ug/L	0.5	0.5	70	NO	NO
38	2,4,5 - TP (Silvex)	ND	ug/L	1.0	1.0	50	NO	NO
134	Pentachlorophenol	ND	ug/L	0.20	0.20	1	NO	NO
137	Dalapon	ND	ug/L	5.0	5.0	200	NO	NO
139	Dinoseb	ND	ug/L	1.0	1.0	7	NO	NO
140	Picloram	ND	ug/L	0.5	0.5	500	NO	NO
EPA UNREGULATED								
135	2,4 - DB	ND	ug/L	1.0				
138	Dicamba	ND	ug/L	0.2				
223	Acifluorfen	ND	ug/L	2.0				
224	Chloramben	ND	ug/L	0.2				
225	DCPA Acid Metabolites (A)	ND	ug/L	0.1				
226	3,5-Dichlorobenzoic Acid	ND	ug/L	0.5				
228	4 - Nitrophenol	ND	ug/L	0.5				

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).
 Trigger Level: DOH Drinking Water response level.
 MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
 NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.
 ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
 < : Indicates less than.

Comments:

Method 515.1: Herbicides



SOC
Lab

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT
EPA TEST METHOD - 525.2

System ID No.: 568203		System Name: Mt. View Edgewood Water Company	
Lab/Sample No.: 08984658		Date Collected: 07/21/06	DOH Source No.: S09
Multiple Source Nos.: NA		Sample Type: B	Sample Purpose: C
Date Received: 07/21/06	Date Reported: 08/07/06	Supervisor: <i>[Signature]</i>	
Date Extracted: 07/28/06	Date Analyzed: 08/04/06	Analyst: WMA	
County: Pierce		Group: A	
Sample Location: Well #9 Sample Port			
Send Report To: Mt. View Edgewood Water Co. 11610 32nd St. E.; Edgewood, WA 98372			Remarks:

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
33	Endrin	ND	ug/L	0.02	0.02	2	NO	NO
34	Lindane (HCH gamma)	ND	ug/L	0.04	0.04	0.2	NO	NO
35	Methoxychlor	ND	ug/L	0.2	0.2	40	NO	NO
36	Toxaphene	ND	ug/L	2	2	3	NO	NO
117	Alachlor	ND	ug/L	0.4	0.4	2	NO	NO
119	Atrazine	ND	ug/L	0.2	0.2	3	NO	NO
120	Benzo(a)pyrene	ND	ug/L	0.04	0.04	0.2	NO	NO
122	Chlordane (total)	ND	ug/L	0.4	0.4	2	NO	NO
124	Di(ethylhexyl)adipate	ND	ug/L	1.3	1.3	400	NO	NO
125	Di(ethylhexyl)phthalate	ND	ug/L	1.3	1.3	6	NO	NO
126	Heptachlor	ND	ug/L	0.08	0.08	0.4	NO	NO
127	Heptachlor epoxide	ND	ug/L	0.04	0.04	0.2	NO	NO
128	Hexachlorobenzene	ND	ug/L	0.2	0.2	1	NO	NO
129	Hexachlorocyclopentadiene	ND	ug/L	0.2	0.2	50	NO	NO
133	Simazine	ND	ug/L	0.15	0.15	4	NO	NO
134	Pentachlorophenol	ND	ug/L	0.08	0.08	1	NO	NO
EPA UNREGULATED								
118	Aldrin	ND	ug/L	0.2	0.2		NO	
121	Butachlor	ND	ug/L	0.4	0.4		NO	
123	Dieldrin	ND	ug/L	0.2	0.2		NO	
130	Metolachlor	ND	ug/L	1	1		NO	
131	Metribuzin	ND	ug/L	0.2	0.2		NO	
132	Propachlor	ND	ug/L	0.2	0.2		NO	
154	Fluorene	ND	ug/L	0.2	0.2		NO	
STATE UNREGULATED								
153	PCB (as total arochlors)	ND	ug/L	0.2	0.2		NO	
173	Arochlor 1221	ND	ug/L	0.5	0.5		NO	
174	Arochlor 1232	ND	ug/L	0.1	0.5		NO	
175	Arochlor 1242	ND	ug/L	0.1	0.3		NO	
176	Arochlor 1248	ND	ug/L	0.1	0.1		NO	

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DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
STATE UNREGULATED							Trigger?	MCL?
177	Arochlor 1254	ND	ug/L	0.1	0.1		NO	
178	Arochlor 1260	ND	ug/L	0.1	0.2		NO	
179	Bromacil	ND	ug/L	0.2	0.2		NO	
180	Arochlor 1016	ND	ug/L	0.2	0.2		NO	
183	Prometon	ND	ug/L	0.2	0.2		NO	
190	Terbacil	ND	ug/L	0.2	0.2		NO	
202	Diazinon	ND	ug/L	0.2	0.2		NO	
208	EPTC	ND	ug/L	0.3	0.3		NO	
230	Heptachlor Epoxide 'B'	NA	ug/L	0.2	0.2			
232	4,4' - DDD	ND	ug/L	0.2	0.2		NO	
233	4,4' - DDE	ND	ug/L	0.2	0.2		NO	
234	4,4' - DDT	ND	ug/L	0.2	0.2		NO	
236	Cyanazine	ND	ug/L	0.2	0.2		NO	
239	Malathion	ND	ug/L	0.2	0.2		NO	
240	Parathion	ND	ug/L	0.2	0.2		NO	
243	Trifluralin	ND	ug/L	0.2	0.2		NO	
244	Acenaphthylene	ND	ug/L	0.2	0.2		NO	
245	Acenaphthene	ND	ug/L	0.2	0.2		NO	
246	Anthracene	ND	ug/L	0.2	0.2		NO	
247	Benzo (a) Anthracene	ND	ug/L	0.2	0.2		NO	
248	Benzo (b) Fluoranthene	ND	ug/L	0.2	0.2		NO	
249	Benzo (g,h,i) Perylene	ND	ug/L	0.2	0.2		NO	
250	Benzo (k) Fluoranthene	ND	ug/L	0.2	0.2		NO	
251	Chrysene	ND	ug/L	0.2	0.2		NO	
252	Dibenzo (a,h) Anthracene	ND	ug/L	0.2	0.2		NO	
253	Fluoranthene	ND	ug/L	0.2	0.2		NO	
255	Indeno (1,2,3-cd) Pyrene	ND	ug/L	0.2	0.2		NO	
256	Phenanthrene	ND	ug/L	0.2	0.2		NO	
257	Pyrene	ND	ug/L	0.2	0.2		NO	
258	Benzyl Butyl Phthalate	ND	ug/L	0.6	0.6		NO	
259	Di - n -Butyl Phthalate	ND	ug/L	0.6	0.6		NO	
260	Diethyl Phthalate	ND	ug/L	0.6	0.6		NO	
261	Dimethyl Phthalate	ND	ug/L	0.6	0.6		NO	
319	Heptachlor Epoxide 'A'	NA	ug/L	0.2	0.2			
	Acetochlor	ND	ug/L					
	Molinate	ND	ug/L					
	2,4-Dinitrotoluene	ND	ug/L					
	2,6-Dinitrotoluene	ND	ug/L					

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).
 Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level are required to take additional samples. Contact your regional DOH office for further information.
 MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
 NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.
 ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the S
 < : Indicates less than.

Comments : Sample was analyzed in accordance with DOH memo dated 03/04/98.

Method 525: Pesticides



1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT
EPA TEST METHOD - EPA 525.2
WA DOH TEST PANEL: PEST1

System ID No.: 568203		System Name: Mt View Edgewood Water	
Lab/Sample No.: 08985081		Date Collected: 07/27/16	DOH Source No.: S10
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 07/27/16		Date Analyzed: 07/29/16	Analyst: LHL
Date Extracted: 07/28/16		Date Reported: 08/02/16	Supervisor: <i>AMB</i>
County: Pierce		Group: A	
Sample Location: Well 1R Sample Port			
Send To: Mt View Edgewood Water 11610 32nd St E Edgewood, WA 98372			Remarks:

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
33	Endrin	ND	ug/L	0.05	0.05	2	NO	NO
34	Lindane (BHC-gamma)	ND	ug/L	0.04	0.04	0.2	NO	NO
35	Methoxychlor	ND	ug/L	10	10	40	NO	NO
36	Toxaphene ¹	ND	ug/L	1	1	3	NO	NO
117	Alachlor	ND	ug/L	0.4	0.4	2	NO	NO
119	Atrazine	ND	ug/L	0.5	0.5	3	NO	NO
120	Benzo(a)pyrene	ND	ug/L	0.04	0.04	0.2	NO	NO
122	Chlordane (total) ¹	ND	ug/L	0.4	0.4	2	NO	NO
124	Di(ethylhexyl)adipate	ND	ug/L	1.3	1.3	400	NO	NO
125	Di(ethylhexyl)phthalate	ND	ug/L	1.3	1.3	6	NO	NO
126	Heptachlor	ND	ug/L	0.09	0.09	0.4	NO	NO
127	Heptachlor epoxide	ND	ug/L	0.1	0.1	0.2	NO	NO
128	Hexachlorobenzene	ND	ug/L	0.5	0.5	1	NO	NO
129	Hexachlorocyclopentadiene	ND	ug/L	0.5	0.5	50	NO	NO
133	Simazine	ND	ug/L	0.15	0.15	4	NO	NO
134	Pentachlorophenol	ND	ug/L	0.2	0.2	1	NO	NO
153	PCB (as total arochlors) ¹	ND	ug/L	0.2			NA	NA
173	Arochlor 1221 ¹	ND	ug/L	100			NA	NA
174	Arochlor 1232 ¹	ND	ug/L	2.5			NA	NA
175	Arochlor 1242 ¹	ND	ug/L	1.5			NA	NA
176	Arochlor 1248 ¹	ND	ug/L	0.5			NA	NA
177	Arochlor 1254 ¹	ND	ug/L	0.5			NA	NA
178	Arochlor 1260 ¹	ND	ug/L	1.0			NA	NA
180	Arochlor 1016 ¹	ND	ug/L	0.4			NA	NA
EPA UNREGULATED								
121	Butachlor	ND	ug/L	0.4			NA	NA
123	Dieldrin	ND	ug/L	0.1			NA	NA
130	Metolachlor	ND	ug/L	1			NA	NA
131	Metribuzin	ND	ug/L	0.2			NA	NA
132	Propachlor	ND	ug/L	0.1			NA	NA
254	Fluorene	ND	ug/L	0.2			NA	NA
179	Bromacil	ND	ug/L	0.2			NA	NA



1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT
EPA TEST METHOD - EPA 515.1
WA DOH TEST PANEL: HERB1

System ID No.: 568203		System Name: Mt View Edgewood Water	
Lab/Sample No.: 08985081		Date Collected: 07/27/16	DOH Source No.: S10
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 07/27/16	Date Analyzed: 08/02/16		Analyst: RL
Date Extracted: 08/02/16	Date Reported: 08/03/16		Supervisor: <i>RL</i>
County: Pierce		Group: A	
Sample Location: Well #1R - Sample Port			
Send To: Mt View Edgewood Water 11610 32nd St E Edgewood, WA 98372			Remarks:

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
							Trigger?	MCL?
EPA REGULATED								
37	2,4 - D	ND	ug/L	0.5	0.5	70	NO	NO
38	2,4,5 - TP (Silvex)	ND	ug/L	1.0	1.0	50	NO	NO
134	Pentachlorophenol	ND	ug/L	0.20	0.20	1	NO	NO
137	Dalapon	ND	ug/L	5.0	5.0	200	NO	NO
139	Dinoseb	ND	ug/L	1.0	1.0	7	NO	NO
140	Picloram	ND	ug/L	0.5	0.5	500	NO	NO
EPA UNREGULATED								
135	2,4 - DB	ND	ug/L	1.0				
138	Dicamba	ND	ug/L	0.2				
223	Acifluorfen	ND	ug/L	2.0				
224	Chloramben	ND	ug/L	0.2				
225	DCPA Acid Metabolites (A)	ND	ug/L	0.1				
226	3,5-Dichlorobenzoic Acid	ND	ug/L	0.5				
228	4 - Nitrophenol	ND	ug/L	0.5				

NOTES:

- SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).
- Trigger Level: DOH Drinking Water response level.
- MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.
- NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.
- ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.
- <: Indicates less than.

Comments:

Method 515.1: Herbicides



WATER MANAGEMENT LABORATORIES INC.

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VOLATILE ORGANIC CHEMICALS (VOC's) ANALYSIS REPORT EPA TEST METHOD - 524.2 WA DOH TEST PANEL: VOC1

System ID No.: 568203		System Name: Mt View - Edgewood Water Co.	
Lab/Sample No.: 08978305		Date Collected: 08/19/2009	DOH Source No.: S05
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 08/19/2009		Date Analyzed: 08/24/2009	Analyst: LHL
		Date Reported: 08/26/2009	Supervisor: <i>MB</i>
County: Pierce		Group: A	
Sample Location: Sample Port in Wellhouse			
Send To: Mt View Edgewood Water Co. 11610 32nd Street E. Edgewood, WA 98372			Remarks:

S05 = Well 5

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED:							Trigger?	MCL?
45	Vinyl Chloride	ND	ug/L	0.5	0.5	2	NO	NO
46	1,1 - Dichloroethylene	ND	ug/L	0.5	0.5	7	NO	NO
47	1,1,1 - Trichloroethane	ND	ug/L	0.5	0.5	200	NO	NO
48	Carbon Tetrachloride	ND	ug/L	0.5	0.5	5	NO	NO
49	Benzene	ND	ug/L	0.5	0.5	5	NO	NO
50	1,2 - Dichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
51	Trichloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
52	1,4 - Dichlorobenzene	ND	ug/L	0.5	0.5	75	NO	NO
56	Dichloromethane	ND	ug/L	0.5	0.5	5	NO	NO
57	trans-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	100	NO	NO
60	cis-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	70	NO	NO
63	1,2 - Dichloropropane	ND	ug/L	0.5	0.5	5	NO	NO
66	Toluene	ND	ug/L	0.5	0.5	1000	NO	NO
67	1,1,2 - Trichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
68	Tetrachloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
71	Chlorobenzene	ND	ug/L	0.5	0.5	100	NO	NO
73	Ethylbenzene	ND	ug/L	0.5	0.5	700	NO	NO
76	Styrene	ND	ug/L	0.5	0.5	100	NO	NO
84	1,2 - Dichlorobenzene	ND	ug/L	0.5	0.5	600	NO	NO
95	1,2,4 - Trichlorobenzene	ND	ug/L	0.5	0.5	70	NO	NO
160	Total Xylenes	ND	ug/L	0.5	0.5	10000	NO	NO
74	m/p Xylenes (MCL for Total)	ND	ug/L	0.5	0.5		NO	
75	o - Xylene (MCL for Total)	ND	ug/L	0.5	0.5		NO	
TRihalOMETHANES								
27	Chloroform	ND	ug/L	0.5	0.5		NO	
28	Bromodichloromethane	ND	ug/L	0.5	0.5		NO	
29	Chlorodibromomethane	ND	ug/L	0.5	0.5		NO	
30	Bromoform	ND	ug/L	0.5	0.5		NO	
31	TOTAL Trihalomethanes	ND	ug/L	NA	NA	80		NO

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DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA UNREGULATED (Continued)							Trigger?	MCL?
53	Chloromethane	ND	ug/L	0.5	0.5		NO	
54	Bromomethane	ND	ug/L	0.5	0.5		NO	
58	1,1 - Dichloroethane	ND	ug/L	0.5	0.5		NO	
72	1,1,1,2 - Tetrachloroethane	ND	ug/L	0.5	0.5		NO	
78	Bromobenzene	ND	ug/L	0.5	0.5		NO	
79	1,2,3 - Trichloropropane (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
81	o - Chlorotoluene	ND	ug/L	0.5	0.5		NO	
85	Fluorotrichloromethane	ND	ug/L	0.5	0.5		NO	
86	Bromochloromethane	ND	ug/L	0.5	0.5		NO	
89	1,3,5 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO	
91	1,2,4 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO	
92	s - Butylbenzene	ND	ug/L	0.5	0.5		NO	
93	p - Isopropyltoluene	ND	ug/L	0.5	0.5		NO	
94	n - Butylbenzene	ND	ug/L	0.5	0.5		NO	
96	Napthalene	ND	ug/L	0.5	0.5		NO	
102	EDB (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
103	DBCP (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
162	Dichlorodifluoromethane	ND	ug/L	0.5	0.5		NO	
N/A	MTBE	ND	ug/L	0.5	0.5		NO	

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may need to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

<: Indicates less than.

Comments:

A maximum contaminant level of 80 ug/L total Trihalomethanes (Compounds 27-30) is allowed.

Method 524.2: VOC's



WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

VOLATILE ORGANIC CHEMICALS (VOC's) ANALYSIS REPORT

EPA TEST METHOD - 524.2
WA DOH TEST PANEL: VOC1

JUL 24 2012

System ID No.: 568203		System Name: Mt View - Edgewood Water Co.	
Lab/Sample No.: 08971562		Date Collected: 07/10/12	DOH Source No.: S06
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 07/10/12	Date Analyzed: 07/10/12	Analyst: LHL	
		Date Reported: 07/12/12	Supervisor: <i>DMB</i>
County: Pierce		Group: A	
Sample Location: Well #6, Sample Port in Wellhouse			
Send To: Mt View - Edgewood Water Co. 11610 - 32nd Street East Edgewood, WA 98372		Remarks:	

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
45	Vinyl Chloride	ND	ug/L	0.5	0.5	2	NO	NO
46	1,1 - Dichloroethylene	ND	ug/L	0.5	0.5	7	NO	NO
47	1,1,1 - Trichloroethane	ND	ug/L	0.5	0.5	200	NO	NO
48	Carbon Tetrachloride	ND	ug/L	0.5	0.5	5	NO	NO
49	Benzene	ND	ug/L	0.5	0.5	5	NO	NO
50	1,2 - Dichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
51	Trichloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
52	1,4 - Dichlorobenzene	ND	ug/L	0.5	0.5	75	NO	NO
56	Dichloromethane	ND	ug/L	0.5	0.5	5	NO	NO
57	trans-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	100	NO	NO
60	cis-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	70	NO	NO
63	1,2 - Dichloropropane	ND	ug/L	0.5	0.5	5	NO	NO
66	Toluene	ND	ug/L	0.5	0.5	1000	NO	NO
67	1,1,2 - Trichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
68	Tetrachloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
71	Chlorobenzene	ND	ug/L	0.5	0.5	100	NO	NO
73	Ethylbenzene	ND	ug/L	0.5	0.5	700	NO	NO
76	Styrene	ND	ug/L	0.5	0.5	100	NO	NO
84	1,2 - Dichlorobenzene	ND	ug/L	0.5	0.5	800	NO	NO
95	1,2,4 - Trichlorobenzene	ND	ug/L	0.5	0.5	70	NO	NO
160	Total Xylenes	ND	ug/L	0.5	0.5	10000	NO	NO
74	m/p Xylenes (MCL for Total)	ND	ug/L	0.5	0.5		NO	
75	o - Xylene (MCL for Total)	ND	ug/L	0.5	0.5		NO	
TRihalOMETHANES								
27	Chloroform	ND	ug/L	0.5	0.5		NO	
28	Bromodichloromethane	ND	ug/L	0.5	0.5		NO	
29	Chlorodibromomethane	ND	ug/L	0.5	0.5		NO	
30	Bromoform	ND	ug/L	0.5	0.5		NO	
31	TOTAL Trihalomethanes	ND	ug/L	NA	NA	80		NO

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DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Trigger?	MCL?
EPA UNREGULATED (Continued)									
53	Chloromethane	ND	ug/L	0.5	0.5			NO	
54	Bromomethane	ND	ug/L	0.5	0.5			NO	
58	1,1 - Dichloroethane	ND	ug/L	0.5	0.5			NO	
72	1,1,1,2 - Tetrachloroethane	ND	ug/L	0.5	0.5			NO	
78	Bromobenzene	ND	ug/L	0.5	0.5			NO	
79	1,2,3 - Trichloropropane (Confirm by 504.1)	ND	ug/L	0.5	0.5			NO	
81	o - Chlorotoluene	ND	ug/L	0.5	0.5			NO	
85	Fluorotrichloromethane	ND	ug/L	0.5	0.5			NO	
86	Bromochloromethane	ND	ug/L	0.5	0.5			NO	
89	1,3,5 - Trimethylbenzene	ND	ug/L	0.5	0.5			NO	
91	1,2,4 - Trimethylbenzene	ND	ug/L	0.5	0.5			NO	
92	s - Butylbenzene	ND	ug/L	0.5	0.5			NO	
93	p - Isopropyltoluene	ND	ug/L	0.5	0.5			NO	
94	n - Butylbenzene	ND	ug/L	0.5	0.5			NO	
96	Napthalene	ND	ug/L	0.5	0.5			NO	
102	EDB (Confirm by 504.1)	ND	ug/L	0.5	0.5			NO	
103	DBCP (Confirm by 504.1)	ND	ug/L	0.5	0.5			NO	
162	Dichlorodifluoromethane	ND	ug/L	0.5	0.5			NO	
N/A	MTBE	ND	ug/L	0.5	0.5			NO	

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may need to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

< ; Indicates less than.

Comments:

A maximum contaminant level of 80 ug/L total Trihalomethanes (Compounds 27-30) is allowed.

Method 524.2: VOC's



WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

VOLATILE ORGANIC CHEMICALS (VOC's) ANALYSIS REPORT

EPA TEST METHOD - 524.2
WA DOH TEST PANEL: VOC1

ANALYSIS REPORT
AUG 13 2010

System ID No.: 568203		System Name: Mt View - Edgewood Water Co.	
Lab/Sample No.: 08979448		Date Collected: 07/28/10	DOH Source No.: S07
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 07/28/10	Date Analyzed: 07/30/10	Analyst: LHL	
	Date Reported: 08/02/10	Supervisor: <i>and</i>	
County: Pierce		Group: A	
Sample Location: Well #7, Sample Port in Wellhouse			
Send To: Mt View - Edgewood Water Co. 11610 - 32nd St. E. Edgewood, WA 98372		Remarks:	

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Trigger?	MCL?
EPA REGULATED									
45	Vinyl Chloride	ND	ug/L	0.5	0.5	2		NO	NO
46	1,1 - Dichloroethylene	ND	ug/L	0.5	0.5	7		NO	NO
47	1,1,1 - Trichloroethane	ND	ug/L	0.5	0.5	200		NO	NO
48	Carbon Tetrachloride	ND	ug/L	0.5	0.5	5		NO	NO
49	Benzene	ND	ug/L	0.5	0.5	5		NO	NO
50	1,2 - Dichloroethane	ND	ug/L	0.5	0.5	5		NO	NO
51	Trichloroethylene	ND	ug/L	0.5	0.5	5		NO	NO
52	1,4 - Dichlorobenzene	ND	ug/L	0.5	0.5	75		NO	NO
56	Dichloromethane	ND	ug/L	0.5	0.5	5		NO	NO
57	trans-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	100		NO	NO
60	cis-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	70		NO	NO
63	1,2 - Dichloropropane	ND	ug/L	0.5	0.5	5		NO	NO
66	Toluene	ND	ug/L	0.5	0.5	1000		NO	NO
67	1,1,2 - Trichloroethane	ND	ug/L	0.5	0.5	5		NO	NO
68	Tetrachloroethylene	ND	ug/L	0.5	0.5	5		NO	NO
71	Chlorobenzene	ND	ug/L	0.5	0.5	100		NO	NO
73	Ethylbenzene	ND	ug/L	0.5	0.5	700		NO	NO
76	Styrene	ND	ug/L	0.5	0.5	100		NO	NO
84	1,2 - Dichlorobenzene	ND	ug/L	0.5	0.5	600		NO	NO
95	1,2,4 - Trichlorobenzene	ND	ug/L	0.5	0.5	70		NO	NO
160	Total Xylenes	ND	ug/L	0.5	0.5	10000		NO	NO
74	m/p Xylenes (MCL for Total)	ND	ug/L	0.5	0.5			NO	
75	o - Xylene (MCL for Total)	ND	ug/L	0.5	0.5			NO	
TRihalOMETHANES									
27	Chloroform	ND	ug/L	0.5	0.5			NO	
28	Bromodichloromethane	ND	ug/L	0.5	0.5			NO	
29	Chlorodibromomethane	ND	ug/L	0.5	0.5			NO	
30	Bromoform	ND	ug/L	0.5	0.5			NO	
31	TOTAL Trihalomethanes	ND	ug/L	NA	NA	80			NO

Water Management Laboratories, Inc.
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DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA UNREGULATED (Continued)							Trigger?	MCL?
53	Chloromethane	ND	ug/L	0.5	0.5		NO	
54	Bromomethane	ND	ug/L	0.5	0.5		NO	
58	1,1 - Dichloroethane	ND	ug/L	0.5	0.5		NO	
72	1,1,1,2 - Tetrachloroethane	ND	ug/L	0.5	0.5		NO	
78	Bromobenzene	ND	ug/L	0.5	0.5		NO	
79	1,2,3 - Trichloropropane (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
81	o - Chlorotoluene	ND	ug/L	0.5	0.5		NO	
85	Fluorotrichloromethane	ND	ug/L	0.5	0.5		NO	
88	Bromochloromethane	ND	ug/L	0.5	0.5		NO	
89	1,3,5 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO	
91	1,2,4 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO	
92	s - Butylbenzene	ND	ug/L	0.5	0.5		NO	
93	p - Isopropyltoluene	ND	ug/L	0.5	0.5		NO	
94	n - Butylbenzene	ND	ug/L	0.5	0.5		NO	
96	Napthalene	ND	ug/L	0.5	0.5		NO	
102	EDB (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
103	DBCP (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
162	Dichlorodifluoromethane	ND	ug/L	0.5	0.5		NO	
N/A	MTBE	ND	ug/L	0.5	0.5		NO	

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may need to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

< : Indicates less than.

Comments:

A maximum contaminant level of 80 ug/L total Trihalomethanes (Compounds 27-30) is allowed.

Method 524.2: VOC's



WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

VOLATILE ORGANIC CHEMICALS (VOC's) ANALYSIS REPORT EPA TEST METHOD - EPA 524.2 WA DOH TEST PANEL: VOC1

System ID No.: 568203		System Name: Mt View Edgewood Water	
Lab/Sample No.: 08976207		Date Collected: 07/27/16	DOH Source No.: S08
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 07/27/16		Date Analyzed: 08/01/16	Analyst: LHL
		Date Reported: 08/02/16	Supervisor: <i>mb</i>
County: Pierce		Group: A	
Sample Location: Well 8 Sample Port			
Send To: Mt View Edgewood Water 11610 32nd St E Edgewood, WA 98372			Remarks:

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
45	Vinyl Chloride	ND	ug/L	0.5	0.5	2	NO	NO
46	1,1 - Dichloroethylene	ND	ug/L	0.5	0.5	7	NO	NO
47	1,1,1 - Trichloroethane	ND	ug/L	0.5	0.5	200	NO	NO
48	Carbon Tetrachloride	ND	ug/L	0.5	0.5	5	NO	NO
49	Benzene	ND	ug/L	0.5	0.5	5	NO	NO
50	1,2 - Dichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
51	Trichloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
52	1,4 - Dichlorobenzene	ND	ug/L	0.5	0.5	75	NO	NO
56	Dichloromethane	ND	ug/L	0.5	0.5	5	NO	NO
57	trans-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	100	NO	NO
60	cis-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	70	NO	NO
63	1,2 - Dichloropropane	ND	ug/L	0.5	0.5	5	NO	NO
66	Toluene	ND	ug/L	0.5	0.5	1000	NO	NO
67	1,1,2 - Trichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
68	Tetrachloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
71	Chlorobenzene	ND	ug/L	0.5	0.5	100	NO	NO
73	Ethylbenzene	ND	ug/L	0.5	0.5	700	NO	NO
76	Styrene	ND	ug/L	0.5	0.5	100	NO	NO
84	1,2 - Dichlorobenzene	ND	ug/L	0.5	0.5	600	NO	NO
95	1,2,4 - Trichlorobenzene	ND	ug/L	0.5	0.5	70	NO	NO
160	Total Xylenes	ND	ug/L	0.5	0.5	10000	NO	NO
74	m/p Xylenes (MCL for Total)	ND	ug/L	0.5	0.5		NO	
75	o - Xylene (MCL for Total)	ND	ug/L	0.5	0.5		NO	
TRICHALOMETHANES								
27	Chloroform	ND	ug/L	0.5	0.5		NO	
28	Bromodichloromethane	ND	ug/L	0.5	0.5		NO	
29	Chlorodibromomethane	ND	ug/L	0.5	0.5		NO	
30	Bromoform	ND	ug/L	0.5	0.5		NO	
31	TOTAL Trihalomethanes	ND	ug/L	NA	NA	80		NO

Water Management Laboratories, Inc.
1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	Trigger?	MCL?
EPA UNREGULATED (Continued)									
53	Chloromethane	ND	ug/L	0.5	0.5			NO	
54	Bromomethane	ND	ug/L	0.5	0.5			NO	
58	1,1 - Dichloroethane	ND	ug/L	0.5	0.5			NO	
72	1,1,1,2 - Tetrachloroethane	ND	ug/L	0.5	0.5			NO	
78	Bromobenzene	ND	ug/L	0.5	0.5			NO	
79	1,2,3 - Trichloropropane (Confirm by 504.1)	ND	ug/L	0.5	0.5			NO	
81	o - Chlorotoluene	ND	ug/L	0.5	0.5			NO	
85	Fluorotrichloromethane	ND	ug/L	0.5	0.5			NO	
86	Bromochloromethane	ND	ug/L	0.5	0.5			NO	
89	1,3,5 - Trimethylbenzene	ND	ug/L	0.5	0.5			NO	
91	1,2,4 - Trimethylbenzene	ND	ug/L	0.5	0.5			NO	
92	s - Butylbenzene	ND	ug/L	0.5	0.5			NO	
93	p - Isopropyltoluene	ND	ug/L	0.5	0.5			NO	
94	n - Butylbenzene	ND	ug/L	0.5	0.5			NO	
96	Naphthalene	ND	ug/L	0.5	0.5			NO	
102	EDB (Confirm by 504.1)	ND	ug/L	0.5	0.5			NO	
103	DBCP (Confirm by 504.1)	ND	ug/L	0.5	0.5			NO	
162	Dichlorodifluoromethane	ND	ug/L	0.5	0.5			NO	
N/A	MTBE	ND	ug/L	0.5	0.5			NO	

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may need to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

<: Indicates less than.

Comments:

Method 524.2: VOC's



WATER MANAGEMENT LABORATORIES INC.

1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

VOLATILE ORGANIC CHEMICALS (VOC's) ANALYSIS REPORT EPA TEST METHOD - EPA 524.2 WA DOH TEST PANEL: VOC1

System ID No.: 568203		System Name: Mt View Edgewood Water	
Lab/Sample No.: 08976206		Date Collected: 07/27/16	DOH Source No.: S10
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 07/27/16		Date Analyzed: 08/01/16	Analyst: LHL
		Date Reported: 08/02/16	Supervisor: <i>AMB</i>
County: Pierce		Group: A	
Sample Location: Well 1R Sample Port			
Send To: Mt View Edgewood Water 11610 32nd St E Edgewood, WA 98372			Remarks:

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA REGULATED							Trigger?	MCL?
45	Vinyl Chloride	ND	ug/L	0.5	0.5	2	NO	NO
46	1,1 - Dichloroethylene	ND	ug/L	0.5	0.5	7	NO	NO
47	1,1,1 - Trichloroethane	ND	ug/L	0.5	0.5	200	NO	NO
48	Carbon Tetrachloride	ND	ug/L	0.5	0.5	5	NO	NO
49	Benzene	ND	ug/L	0.5	0.5	5	NO	NO
50	1,2 - Dichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
51	Trichloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
52	1,4 - Dichlorobenzene	ND	ug/L	0.5	0.5	75	NO	NO
56	Dichloromethane	ND	ug/L	0.5	0.5	5	NO	NO
57	trans-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	100	NO	NO
60	cis-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	70	NO	NO
63	1,2 - Dichloropropane	ND	ug/L	0.5	0.5	5	NO	NO
66	Toluene	ND	ug/L	0.5	0.5	1000	NO	NO
67	1,1,2 - Trichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
68	Tetrachloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
71	Chlorobenzene	ND	ug/L	0.5	0.5	100	NO	NO
73	Ethylbenzene	ND	ug/L	0.5	0.5	700	NO	NO
76	Styrene	ND	ug/L	0.5	0.5	100	NO	NO
84	1,2 - Dichlorobenzene	ND	ug/L	0.5	0.5	600	NO	NO
95	1,2,4 - Trichlorobenzene	ND	ug/L	0.5	0.5	70	NO	NO
160	Total Xylenes	ND	ug/L	0.5	0.5	10000	NO	NO
74	m/p Xylenes (MCL for Total)	ND	ug/L	0.5	0.5		NO	
75	o - Xylene (MCL for Total)	ND	ug/L	0.5	0.5		NO	
TRihalOMETHANES								
27	Chloroform	ND	ug/L	0.5	0.5		NO	
28	Bromodichloromethane	ND	ug/L	0.5	0.5		NO	
29	Chlorodibromomethane	ND	ug/L	0.5	0.5		NO	
30	Bromoform	ND	ug/L	0.5	0.5		NO	
31	TOTAL Trihalomethanes	ND	ug/L	NA	NA	80		NO

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 (253) 531-3121

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA UNREGULATED (Continued)							Trigger?	MCL?
53	Chloromethane	ND	ug/L	0.5	0.5		NO	
54	Bromomethane	ND	ug/L	0.5	0.5		NO	
58	1,1 - Dichloroethane	ND	ug/L	0.5	0.5		NO	
72	1,1,1,2 - Tetrachloroethane	ND	ug/L	0.5	0.5		NO	
78	Bromobenzene	ND	ug/L	0.5	0.5		NO	
79	1,2,3 - Trichloropropane (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
81	o - Chlorotoluene	ND	ug/L	0.5	0.5		NO	
85	Fluorotrichloromethane	ND	ug/L	0.5	0.5		NO	
86	Bromochloromethane	ND	ug/L	0.5	0.5		NO	
89	1,3,5 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO	
91	1,2,4 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO	
92	s - Butylbenzene	ND	ug/L	0.5	0.5		NO	
93	p - Isopropyltoluene	ND	ug/L	0.5	0.5		NO	
94	n - Butylbenzene	ND	ug/L	0.5	0.5		NO	
96	Naphthalene	ND	ug/L	0.5	0.5		NO	
102	EDB (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
103	DBCP (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
162	Dichlorodifluoromethane	ND	ug/L	0.5	0.5		NO	
N/A	MTBE	ND	ug/L	0.5	0.5		NO	

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may need to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

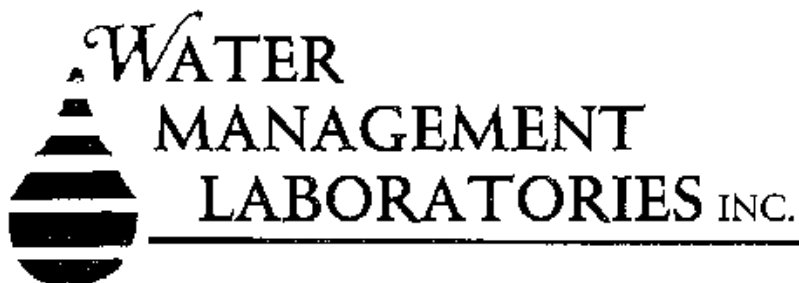
NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

< : Indicates less than.

Comments:

Method 524.2: VOC's



1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

VOLATILE ORGANIC CHEMICALS (VOC's) ANALYSIS REPORT
EPA TEST METHOD - EPA 524.2
WA DOH TEST PANEL: VOC1

System ID No.: 568203		System Name: Mountain View Edgewood Water Co.	
Lab/Sample No.: 08974867		Date Collected: 04/03/15	DOH Source No.: S12
Multiple Source Nos.: N/A		Sample Type: B	Sample Purpose: C
Date Received: 04/03/15	Date Analyzed: 04/06/15	Analyst: LHL	
	Date Reported: 04/07/15	Supervisor: <i>AMB</i>	
County: Pierce		Group: A	
Sample Location: Wellfield (9 & 11) Sample Port			
Send To: Mountain View Edgewood Water Co. 11610 32nd Street E Edgewood, WA 98372-2099			Remarks:

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
							Trigger?	MCL?
EPA REGULATED								
45	Vinyl Chloride	ND	ug/L	0.5	0.5	2	NO	NO
46	1,1 - Dichloroethylene	ND	ug/L	0.5	0.5	7	NO	NO
47	1,1,1 - Trichloroethane	ND	ug/L	0.5	0.5	200	NO	NO
48	Carbon Tetrachloride	ND	ug/L	0.5	0.5	5	NO	NO
49	Benzene	ND	ug/L	0.5	0.5	5	NO	NO
50	1,2 - Dichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
51	Trichloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
52	1,4 - Dichlorobenzene	ND	ug/L	0.5	0.5	75	NO	NO
56	Dichloromethane	ND	ug/L	0.5	0.5	5	NO	NO
57	trans-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	100	NO	NO
60	cis-1,2 - Dichloroethylene	ND	ug/L	0.5	0.5	70	NO	NO
63	1,2 - Dichloropropane	ND	ug/L	0.5	0.5	5	NO	NO
66	Toluene	ND	ug/L	0.5	0.5	1000	NO	NO
67	1,1,2 - Trichloroethane	ND	ug/L	0.5	0.5	5	NO	NO
68	Tetrachloroethylene	ND	ug/L	0.5	0.5	5	NO	NO
71	Chlorobenzene	ND	ug/L	0.5	0.5	100	NO	NO
73	Ethylbenzene	ND	ug/L	0.5	0.5	700	NO	NO
76	Styrene	ND	ug/L	0.5	0.5	100	NO	NO
84	1,2 - Dichlorobenzene	ND	ug/L	0.5	0.5	600	NO	NO
95	1,2,4 - Trichlorobenzene	ND	ug/L	0.5	0.5	70	NO	NO
160	Total Xylenes	ND	ug/L	0.5	0.5	10000	NO	NO
74	m/p Xylenes (MCL for Total)	ND	ug/L	0.5	0.5		NO	
75	o - Xylene (MCL for Total)	ND	ug/L	0.5	0.5		NO	
TRICHALOMETHANES								
27	Chloroform	ND	ug/L	0.5	0.5		NO	
28	Bromodichloromethane	ND	ug/L	0.5	0.5		NO	
29	Chlorodibromomethane	ND	ug/L	0.5	0.5		NO	
30	Bromoform	ND	ug/L	0.5	0.5		NO	
31	TOTAL Trihalomethanes	ND	ug/L	NA	NA	80		NO

Water Management Laboratories, Inc.
1515 80th St. E.
Tacoma, WA 98404
(253) 531-3121

DOH #	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCEEDS	
EPA UNREGULATED (Continued)							Trigger?	MCL?
53	Chloromethane	ND	ug/L	0.5	0.5		NO	
54	Bromomethane	ND	ug/L	0.5	0.5		NO	
58	1,1 - Dichloroethane	ND	ug/L	0.5	0.5		NO	
72	1,1,1,2 - Tetrachloroethane	ND	ug/L	0.5	0.5		NO	
78	Bromobenzene	ND	ug/L	0.5	0.5		NO	
79	1,2,3 - Trichloropropane (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
81	o - Chlorotoluene	ND	ug/L	0.5	0.5		NO	
85	Fluorotrichloromethane	ND	ug/L	0.5	0.5		NO	
86	Bromochloromethane	ND	ug/L	0.5	0.5		NO	
89	1,3,5 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO	
91	1,2,4 - Trimethylbenzene	ND	ug/L	0.5	0.5		NO	
92	s - Butylbenzene	ND	ug/L	0.5	0.5		NO	
93	p - Isopropyltoluene	ND	ug/L	0.5	0.5		NO	
94	n - Butylbenzene	ND	ug/L	0.5	0.5		NO	
96	Napthalene	ND	ug/L	0.5	0.5		NO	
102	EDB (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
103	DBCP (Confirm by 504.1)	ND	ug/L	0.5	0.5		NO	
162	Dichlorodifluoromethane	ND	ug/L	0.5	0.5		NO	
N/A	MTBE	ND	ug/L	0.5	0.5		NO	

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH).

Trigger Level: DOH Drinking Water response level. Systems with compounds detected at concentrations in excess of this level may need to take additional samples. Contact your regional DOH office for further information.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

< : Indicates less than.

Comments:

Method 524.2: VOC's

Appendix G

Coliform Monitoring Plan

Mt. View-Edgewood Water Company

Coliform Monitoring Plan

System Information

Revised 9-5-17

Supersedes all previous versions

Sources:

- S03 – Well 2 (397ft)
- S04 – Well 3 (238 ft)
- S05 – Well 5 (400 ft)
- S06 – Well 6 (370 ft)
- S07 – Well 7 (242 ft)
- S08 – Well 8 (100 ft)
- S10 – Well 1R (100 ft)
- S12 – Wells 9 and 11 (250 ft)

Storage: 3 Reservoirs totaling 2,181,277 gallons.

Treatment: Sources untreated.

Pressure Stations/Zones: The system consists of two pressure zones and four pressure reducing stations.

Populations and Connections:

Population Serviced: 8,595

Connections: 3,100

Routine Sampling Required by Regulation: Ten samples per month.

Rotation: This plan identifies 10 sample stations that are representative of Mt. View-Edgewood Water Companies (MTVE) distribution system. These sites are numbered 1-10 on the Coliform Monitoring Location map. Five samples are to be taken on the first Monday of each month from sites 1-5 and five are to be taken on the third Monday of each month from sites 6-10. Should a holiday fall on a sampling day, the samples will be taken on the Tuesday following the holiday. There are two extra sample station sites (11 & 12) should the operator determine a sample station cannot be used due to dust, pollen, or other concerns.

Sampling Directions: On Friday morning prior to sample day determine the required sample sites from the Coliform Monitoring Plan Sample Site Address List that follows. Take the pump sprayer that contains Back-Down disinfectant and drive to the first site. Back-Down is available from Water Management Labs located at 1515 – 80th St E, Tacoma. Their phone number is 253-531-3121. Upon arriving at the sample site, unlock the sample station, clean the interior, and remove sample tube plugs. Spray the valve area and fill the sample tube and drain tube with Back Down. Replace the sample tube plugs and lock the station. Proceed to the next site until all required sites are filled with Back-Down.

On sample day, determine the required sample sites from the Coliform Monitoring Plan Sample Site Address List that follows. Take the pump sprayer that contains BacDown disinfectant, station pump, brush, hose, sample bottles, cooler, and ice and proceed to the first site. Upon arriving at the sample site, unlock the sample station and clean the interior. Remove sample tube plugs and spray the valve area and fill the sample tube and drain tube with BacDown. Let the BacDown stand for 10 minutes keeping the sample station valve and tubes wet at all times. Flush the sample station for 5 minutes. Draw the sample being careful to not contaminate the lid of the sample bottle. Quickly replace the cap after filling. Complete the sample form requesting that the lab process the sample using the “colisure method” or “CPRG” on the form. Pump out the sample station, replace the plugs, and lock the sample station. The samples must be delivered to Water Management Labs, 1515 – 80th St E, Tacoma, prior to 3:30 PM on the day they are taken.

In the event of a **Coliform positive result**, the operator is required to take three repeat samples within 24 hours of notification from the Lab (original sample site, one upstream, and one downstream). The addresses are on the Coliform Monitoring Plan Sample Site Address List that follows. Check the “repeat sample” box on the form and include the lab number and date of the failed sample. On the same day, take samples from all Wells in operation on the day the failed sample was taken with the pump running, all Wells in operation 72 hours prior to sample day with the pump running, and all Reservoirs. On the lab slips for the sample(s) taken from the wells, check the “Raw Water Source Sample” box and include the source number. In the “Remarks” section of the form write “Raw Groundwater – E. Coli Count Needed”. On the lab slips for the Reservoirs, check the “new construction or repairs” box and write “HPC, also” in the “Remarks” section. Addresses for these sites are on the Coliform Monitoring Plan Sample Site Address List. If the operator feels these sites are not the best due to animal watering, vacant home, or other reasons, an alternate site may be chosen as long it is the within five meter connections from the failed site.

If an intertie was active on the day the failed sample was taken, MTVE must notify the receiving utility within 24 hours of notification from the lab. Record the time of the call and the person that was notified. If the operator is in need of further assistance contact the General Manager or the DOH Northwest Regional Office Coliform Program at 253-395-6775.

If any repeat sample or source sample is positive, contact the General Manager, Field Manager, and DOH Northwest Regional Office Coliform Program at 253-395-6775 immediately for instructions.

Intertie Sampling Procedures: Prior to utilizing any intertie, take an investigative sample at the MTVE sample port within the intertie vault. When any interties are in operation, samples shall be taken at the MTVE sample port and sites 6, 8, and 9 on the same routine sample schedule as the utility receiving water. In the event the receiving utility has a Coliform positive sample and MTVE samples are Coliform absent, then further testing of MTVE Wells and Reservoirs is not required. If the MTVE intertie sample was not taken on the same day as the utility receiving MTVE water, or the MTVE sample is also positive, then MTVE will sample all Wells in operation the day the positive sample was taken with the pump running, all Wells in operation 72 hours prior to sample day with the pump running, and all Reservoirs with 24 hours of notification from the Lab. For the sample(s) taken from the wells check the “Raw Water Source Sample” box on the lab slip and include the source number. In the “Special Instructions” section of the form write “Raw Groundwater – E. Coli Count Needed”.

Record Keeping: Copies of sample results will be kept in the Water Company storage for ten years. Water Management Labs also keeps copies for ten years.

Abbreviations: These abbreviations are used in this plan

SS = Sample Station

u = Up stream of the sample site.

d = Down stream of the sample site.

Mt. View-Edgewood Water Company
Coliform Monitoring Plan
Sample Site Address List

10-18-16

- | | |
|--|---|
| 1. SS @ 1283 Meridian, East 250' | 6. SS @ 1210 - 122 nd Ave E |
| u SS @ 10325 - 13 th St E | u SS @ 12119 - 18 th St E |
| d SS @ 1283 Meridian, Bus Stop | d SS @ 805 - 122 nd Ave E |
|
 | |
| 2. SS @ 12219 - 20 th St E | 7. SS @ 10625 - 32 nd St E |
| u SS @ 12119 - 18 th St E | u SS @ 10318 - 32 nd St E |
| d SS @ 12417 - 20 th St E | d SS @ 2805 - 103 rd Ave Ct E |
|
 | |
| 3. SS @ 9104 - 32 nd St E | 8. SS @ 11316 - 36 th St E |
| u SS @ 9212 - 32 nd St E | u SS @ 11012 - 36 th St E |
| d SS @ 3204 - 88 th Ave E | d SS @ 3710 - 114 th Ave E |
|
 | |
| 4. SS @ 3402 - 122 nd Ave E | 9. SS @ 9104 - 32 nd St E |
| u SS @ 12125 - 36 th St E | u SS @ 9212 - 32 nd St E |
| d SS @ 3208 - 122 nd Ave E | d SS @ 3204 - 88 th Ave E |
|
 | |
| 5. SS @ 4620 - 122 nd Ave E | 10. SS @ 11317 - 13 th St E |
| u SS @ 4905 Monta Vista Dr E | u SS @ 1120 - 114 th Ave E |
| d SS @ 12115 - 45 th St Ct E | d SS @ 11127 - 17 th St E |

Alternate for Sites 1-5

- 11.** SS @ 11427 - 24th St E
u SS @ 2503 - 112th Ave E
d SS @ 11805 - 24th St E

Alternate for Sites 6-10

- 12.** SS @ 29th St and 122nd Ave E
u SS @ 30th St and 122 Ave E
d SS @ 2520 - 122nd Ave E

Mt. View-Edgewood Water Company
Coliform Monitoring Plan
Sample Site Address List
Alternate Sample Stations and Sample Sites

11502 - 4 th St E	3816 - 122 nd Ave E
10616 - 8 th St E	4002 - 122 nd Ave E
10509 - 16 th St E	3527 - 124 th Ave E
11815 - 18 th St E	4508 - 127 th Ave E
11008 - 21 st St E	5005 - 131 st Ave Ct
10311 - 22 nd St E	5314 Edgewood Dr E
11414 - 24 th St E	5518 Edgewood Dr E
11610 - 32 nd St E	823 Meridian
10106 - 36 th St E	1000 Blk Meridian
11316 - 36 th St E	1415 Meridian
10326 - 45 th St E	16 th and Meridian
12801 - 49 th St E	1715 Meridian
2903 - 90 th Ave E	1900 Blk Meridian
3315 - 97 th Ave E	2000 Blk Meridian
2224 - 104 th Ave E	2300 Blk Meridian
1509 - 105 th Ave E	2425 Meridian
1412 - 105 th Ave E	5025 Sumner Hts Dr E
1502 - 106 th Ave E	Wells 1R & 8, 4623 Meridian E
3410 - 108 th Ave E	Wells 3 & 7, 10223 - 29 th St E
4014 - 110 th Ave E	Well 5, 3825 - 94 th Ave E
3822 - 116 th Ave E	Well 6, 2514 - 106 th Ave E
621 - 121 st Ave Ct E	Wells 9 & 11, 3525 - 90 th Ave E
3505 - 122 nd Ave E	
36 th St and 122 nd Ave E	

North Reservoir Booster Station Inlet and Outlet, 614 - 105th Ave E
North Reservoir Fill Line, 614 - 105th Ave E
South Reservoir Booster Station Inlet and Outlet, 12224 - 48th St E
South Reservoir Fill Lines, 12224 - 48th St E
Several at Arbors, Westridge, and Simon's Mill developments

The following Sample Stations have weep holes in the foot valve and can only be used for sampling other than Coliform and HPC.

11614 - 18th St E
11923 - 18th St E
806 - 125th Ave E
4214 Caldwell Rd E

WARNING:

**Do not drink tap water
without boiling it first!**

- Fecal coliform
- E. coli* bacteria
- Other: _____

were detected in the water supply on:

(date) _____

**Boiling kills bacteria and other organisms in
the water:**

- Bring water to a boil
- Continue boiling for 3-5 minutes
- let water cool before using

To avoid possible illness: use boiled or
purchased bottled water for drinking, making ice,
brushing teeth, washing dishes, and food preparation
until further notice.

**Contact your doctor, if you experience one or
more of these symptoms:** nausea, cramps,
diarrhea, jaundice, headache and/or fatigue. People
with chronic illness, infants and the elderly may be at
higher risk and should seek medical advice.

Mt. View - Edgewood Water Co.

I.D. # 568203 County: Pierce

Phone: 253-863-7348

Date notice distributed: _____

See reverse side for more information.

What is fecal coliform and *E. coli*?

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 short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

How long will this warning be in effect?

We will consult with the Washington State Department of health about this incident. We will notify you when you no longer need to boil the water.

Appendix H

Modeling Results

**HYDRAULIC ANALYSIS
FOR
MT. VIEW-EDGEWOOD WATER COMPANY
PIERCE COUNTY, WASHINGTON**

PREPARED BY
ENGINEERING CONSULTANTS NORTHWEST, INC.
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MAY 2017

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Appendix B	Run 1 Results. Maximum Day Demand (4,300 ERU's)

SECTION 1 INTRODUCTION

1.1. INTRODUCTION

This document contains the results of the hydraulic analysis performed on the Mt. View-Edgewood Water System in the Edgewood/Milton area of Pierce County. The analysis evaluates the hydraulics of the water system's source, storage, pumping and distribution facilities. The analysis contains the following:

1. Extended period analysis - maximum day demand
2. Fire flow analysis at selected nodes

1.2. HYDRAULIC ANALYSIS

The water distribution system was evaluated based on a hydraulic analysis of the system. The goals of the analysis were to:

- Determine the system's hydraulic capabilities in handling peak demands and emergency fire protection flows.
- Identify specific locations in the system experiencing low pressures or restricted flow capacity during major flow events.
- Identify and optimize alternative solutions to the problems.

The WaterCad computer modeling software was used in the analysis. The software simulates the flow of water in pressure conduits and other hydraulic components. The hydraulic elements used by the program include:

- Pipe diameter, length and roughness coefficient
- Pressure reducing valves
- Pumps
- Storage tanks

The piping layout, storage tank data and booster pump characteristics were based on:

- "Water System Plan" (File 210928, 2017) prepared by ECNW and the Water Company.
- Pump performance curves provided by the manufacturers.

The system was broken down into a modeling network consisting of its component pipe, nodes and loops. The system consists primarily of ductile iron and cast iron pipe ranging in size from 2 inch to 12 inch diameter. Pipe manufacturers and engineering textbooks recommend using a Hazen-Williams coefficient of 140. To account for minor losses, pipe diameter irregularities and pipe build-up (tuberculation) a coefficient of 130 was used. The elevations of network nodes were based on a topographic map of the Pierce County area. The map contained ground surface contours at 2 foot intervals, Pierce County datum (NGVD 1929).

Shown in the succeeding sections of this document are the results of each system analysis. Included is a summary of each computer run, a schematic drawing of the distribution network with the nodes and pipes identified, a tabulation of input and graphical results of analysis output.

SECTION 2 HYDRAULIC ANALYSIS

2.1 INPUT DATA

Input data for the analysis is tabulated as follows:

Well Sources. Table 2.1

Storage Facilities. Table 2.2

Booster Pumping Stations. Table 2.3

Pressure Reducing Valves. Table 2.4

Pipe and Junction Node Data. Appendix A

The system contains seven operating wells, three storage tanks and two booster pump stations. The system operates with six pressure zones; the existing gravity zone pressurized by the South Reservoirs, the Upper Pressure Zone located in the area surrounding the South Reservoir tank site, and four relatively small zones controlled by PRV stations. The Upper Pressure Zone is pressurized by the booster pump station located at the South Reservoirs. The four PRV stations are supplied by dead-end pipe branches from the gravity zone. The model was last calibrated as part of the 2011 Water System Plan process. Flow testing was performed again during the fall of 2016 at several hydrants located throughout the system. The conditions of the test were simulated as closely as possible in the model, including storage tank levels, well production and booster pump station performance. Model calibration was conducted under 2016 average daily demand conditions. Model calibration results are summarized below.

MODEL CALIBRATION TABLE					
Node Number	Static (psi)		Residual (psi)		Flow (gpm)
	Test	Model	Test	Model	
J-523	85	87	74	72	1100
J-449	81	81	72	70	1100
J-363	64	64	58	58	1100
J-94	61	60	56	55	1150
J-347	73	73	69	70	1150
J-208	58	57	56	55	1150
J-202	47	48	45	46	1150
J-195	50	50	32	33	1100
J-283	71	71	68	68	1150
J-44	118	118	112	111	1150
J-316	138	137	132	131	1150

The model produced results comparable to the values measured in the field. Therefore, it can be assumed that the model accurately represents the water system.

2.2 RUN 1 - EXTENDED PERIOD SIMULATION (4,300 ERU's - MAXIMUM DAY DEMAND)

The purpose of this analysis was to determine the effectiveness of the system's supply wells, storage facilities and booster pump stations in serving the distribution system during Maximum Day Demand conditions. A demand of 3,612,000 gallons was used to represent the maximum day production to serve 4,300 ERU's, the projected service load on the system in the year 2027. A 840 gpd value was used to represent the maximum day production for each ERU.

The wells and all booster pumps were capable of serving the system. The initial tank water levels are shown below. The analysis was for a 30 hour period beginning at midnight. A graph of the diurnal curve, as represented by the time incremental multiplier of the maximum day's average demand, is shown in Figure 2.1. The multiplier for the Peak Hour Demand is 1.74. The analysis evaluates the peak hour demand during the time period from 20.0 to 21.0 hours.

Tank Water Levels:

Tanks T1 and T2 (South).	Elevation 549.0 (minus 1.0 feet from overflow)
Tank T3 (North).	Elevation 359.0 (minus 1.0 feet from overflow)

Shown in Appendix B are the tank water levels as a function of time. The lowest level of the South Reservoirs is approximately 40 feet; the North Reservoir dips to 24.3 feet. The tanks recover by the end of the simulation period. Also shown in Appendix B are graphs of the system pressures at critical nodes. The lowest pressure in the gravity zone occurs at Node J-153 which is located adjacent to the northwest corner of Upper Pressure Zone. The minimum pressure at the node is slightly less than 33 psi.

The lowest pressure in the Upper Zone occurs at Node J-868, which is located across the street from the reservoir site; the minimum pressure approaches 44 psi. The highest upper zone pressure occurs at Node J-848 which is located near the northeast corner of the zone. The maximum pressure slightly exceeds 85 psi.

The hydraulic analysis shows the system satisfies the minimum DOH mandated pressure requirements of 30 psi in all zones under Maximum Day Demand and Peak Hour conditions.

2.3 RUN 2 - FIRE FLOW ANALYSIS (4,300 ERU's - MAXIMUM DAY DEMAND)

This analysis was performed to determine the maximum available fire flow at selected system nodes. The basis of the run was the results of the 30 hour extended period simulation with the system serving 4,300 ERU's. The minimum desired fire flow for evaluation purposes was 1,000 gpm. The City of Edgewood has indicated that peak fire flow requirement of 1,500 gpm for 120-minute duration is appropriate for the residential areas within the Water Company's service area. Higher demands are required in the commercial areas. A minimum value of 2,500 gpm is required for commercial areas. The maximum flow to be evaluated was 3,000 gpm.

The maximum available fire flow conditions assumed a minimum pressure of 20 psi at the fire node while maintaining this same minimum pressure throughout the rest of the system. The available fire flows results for the selected nodes are shown in Figure 3.3 of the 2017 Water System Plan. A summary of results for the lowest flow nodes follows:

The analysis demonstrates the system can satisfy a desired 1,000 gpm fire demand at most system nodes, however, there are a number of nodes where the flow is slightly less. These nodes are typically supplied by small diameter mains and/or are located on dead-end mains.

APPENDIX A
INPUT DATA

**TABLE 2.1
WELLS**

Number	SO2	SO3	SO4	SO5	SO6	SO7	SO8	SO9	SO10	SO11
Name	Well 1 Valley No.1	Leighton	Well 4 Lake Chalet No. 1	Well 5 Barth	Well 6 106th Avenue	Well 7 Lake Chalet No. 2	Well 8 Valley No. 1B	Well 9 Meyer	Well 1R Valley No. 1R	Well 9 Meyer 2
Pump Number				WP-5	WP-6	WP-7	WP-8	WP-9	WP-1R	WP-9
Casing (inches)				12"	16"	12"	12"	12"	12"	16"
Ground Elev. (feet)				160	360	360	72	235	84	235
PWL (feet)				100	197	263	43	55	42	55
Pump Mfr.				B Jackson	Goulds	Goulds	B Jackson	Goulds	Goulds	Goulds
Model				10" MQ "L"	7 WALC	9 CHC	10 GM	11 WAHC	11 CHC	11 CHC
Horsepower				100	10	40	60	100	20	150
Pumps To				Tank SW	Tank SW	Tank SW	Tank SW	Tank SW	Tank SW	Tank SW
Pump On Elev.				44.0	45.0	45.0	40.0	47.0	43.0	45.0
Pump Off Elev.				46.0	47.0	47.0	48.0	49.0	49.0	49.0
Notes:	Abandoned	Emergency	Emergency							

**TABLE 2.2
STORAGE FACILITIES**

Number	T1	T2	T3
Name	Tank SE South	Tank SW South	Tank N North
Base Elev. (feet)	500	500	359
Tank Height (feet)	50	50	29
Diameter (feet)	50	39	80
Max. Water Level	50	50	30
Min. Water Level	40.0	40.0	5.0
Volume (gals)	734,500	447,000.0	1,000,000

**TABLE 2.3
BOOSTER PUMPING STATIONS**

Number	BP N	BP S
Name	North Station	South Station
Pump Number	PMP-N1	PMP-S1
Pump Mfr.	Cornell	Grundfos
Model	3WB-3600	CR10-3
Horsepower	30	3
Pump Control	J-68	J-824
Pump On Elev.	538.0	608.0
Pump Off Elev.	557.0	638.0
Pump Number	PMP-N2	PMP-S2 & S3
Pump Mfr.	Cornell	Grundfos
Model	3YB-3600	CR32-2
Horsepower	50	7.5
Pump Control	J-68	J-824
Pump On Elev.	502.2	601.1
Pump Off Elev.	520.7	638.0
Pump Number	PMP-N3	PMP-S3
Pump Mfr.	Cornell	Grundfos
Model	3YB-3600	CR64-1
Horsepower	50	15
Pump Control	J-68	J-824
Pump On Elev.	485.8	585.0
Pump Off Elev.	497.4	640.0
Pump Number		PMP-S4
Pump Mfr.		Cornell
Model		4RB
Horsepower		25
Pump Control		J-824
Pump On Elev.		564.2
Pump Off Elev.		587.2

**TABLE 2.4
PRESSURE REDUCING STATIONS**

Number	PRV-1	PRV-2	PRV-3
Name	48th St. E & 110th Ave. E	36th St. E & 96th Ave. E.	35th St. E & 90th Ave. E.
Pump Number	275	223	225
Pump Mfr.	6	4	4
Model	413.4	363.7	363
Horsepower	60	61	60
Pump Control			
Pump On Elev.			
Pump Off Elev.			
Pump Number	PRV-4	PRV-5	PRV-6
Pump Mfr.			
Model	48th Street E & Edgewood Drive E	86th Avenue E & 31st Street E	86th Avenue E (North)
Horsepower	450	254	285
Pump Control	6	6	6
Pump On Elev.	533.1	422	425
Pump Off Elev.	36	72	61
Pump Number			
Pump Mfr.			
Model			
Horsepower			
Pump Control			
Pump On Elev.			
Pump Off Elev.			

**MT. VIEW-EDGEWOOD WATER COMPANY
HYDRAULIC ANALYSIS
RUN 1**

SUMMARY OF INPUT DATA - NODES

Run Description: Input Data
Drawing: Mt-View

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-5		Source	506	P - 1
J-10		Source	359	P - 1
J-43		Zone-2	207	P - 1
J-44		Zone-2	300	P - 1
J-45		Zone-2	320	P - 1
J-46		Zone-2	260	P - 1
J-50		Zone-1	385	P - 1
J-52		Zone-1	390	P - 1
J-54		Zone-1	365	P - 1
J-56		Zone-1	328	P - 1
J-58		Zone-1	338	P - 1
J-60		Zone-1	357	P - 1
J-62		Zone-1	420	P - 1
J-64		Zone-1	415	P - 1
J-66		Zone-1	415	P - 1
J-68		Zone-1	366	P - 1
J-70		Zone-1	320	P - 1
J-72		Zone-1	375	P - 1
J-74		Zone-1	375	P - 1
J-76		Zone-1	395	P - 1
J-78		Zone-1	275	P - 1
J-80		Zone-1	435	P - 1
J-82		Zone-1	435	P - 1
J-84		Zone-1	185	P - 1
J-86		Zone-1	185	P - 1
J-88		Zone-1	380	P - 1
J-90		Zone-1	370	P - 1
J-92		Zone-1	410	P - 1
J-94		Zone-1	405	P - 1
J-96		Zone-1	403	P - 1
J-98		Zone-1	375	P - 1
J-100		Zone-1	335	P - 1
J-101		Zone-1	225	P - 1
J-102		Zone-1	225	P - 1
J-103		Zone-1	245	P - 1
J-104		Zone-1	306	P - 1
J-105		Zone-1	300	P - 1
J-106		Zone-1	300	P - 1
J-107		Zone-1	300	P - 1
J-108		Zone-1	325	P - 1
J-109		Zone-1	300	P - 1
J-110		Zone-1	335	P - 1

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-111		Zone-1	300	P - 1
J-112		Zone-1	360	P - 1
J-114		Zone-1	250	P - 1
J-115		Zone-1	275	P - 1
J-116		Zone-1	230	P - 1
J-117		Zone-1	250	P - 1
J-118		Zone-1	275	P - 1
J-119		Zone-1	350	P - 1
J-120		Zone-1	400	P - 1
J-121		Zone-1	445	P - 1
J-122		Zone-1	375	P - 1
J-123		Zone-1	375	P - 1
J-124		Zone-1	350	P - 1
J-125		Zone-1	400	P - 1
J-126		Zone-1	375	P - 1
J-128		Zone-1	450	P - 1
J-130		Zone-1	150	P - 1
J-131		Zone-1	275	P - 1
J-132		Zone-1	325	P - 1
J-133		Zone-1	400	P - 1
J-142		Zone-1	275	P - 1
J-143		Zone-1	275	P - 1
J-144		Zone-1	250	P - 1
J-145		Zone-1	400	P - 1
J-146		Zone-1	411	P - 1
J-147		Zone-1	340	P - 1
J-148		Zone-1	462	P - 1
J-149		Zone-1	482	P - 1
J-150		Zone-1	451	P - 1
J-152		Zone-1	429	P - 1
J-153		Zone-1	463	P - 1
J-154		Zone-1	440	P - 1
J-155		Zone-1	458	P - 1
J-156		Zone-1	450	P - 1
J-157		Zone-1	424	P - 1
J-158		Zone-1	427	P - 1
J-159		Zone-1	429	P - 1
J-160		Zone-1	433	P - 1
J-161		Zone-1	381	P - 1
J-162		Zone-1	400	P - 1
J-163		Zone-1	420	P - 1
J-164		Zone-1	437	P - 1
J-165		Zone-1	385	P - 1
J-166		Zone-1	350	P - 1
J-167		Zone-1	271	P - 1
J-168		Zone-1	250	P - 1
J-169		Zone-1	275	P - 1
J-170		Zone-1	140	P - 1
J-171		Zone-1	100	P - 1
J-172		Zone-1	200	P - 1
J-173		Zone-1	225	P - 1

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-174		Zone-1	247	P - 1
J-175		Zone-1	275	P - 1
J-176		Zone-1	357	P - 1
J-177		Zone-1	373	P - 1
J-178		Zone-1	310	P - 1
J-179		Zone-1	400	P - 1
J-180		Zone-1	397	P - 1
J-181		Zone-1	374	P - 1
J-182		Zone-1	407	P - 1
J-183		Zone-1	416	P - 1
J-184		Zone-1	415	P - 1
J-185		Zone-1	410	P - 1
J-186		Zone-1	416	P - 1
J-187		Zone-1	421	P - 1
J-188		Zone-1	415	P - 1
J-189		Zone-1	420	P - 1
J-190		Zone-1	418	P - 1
J-191		Zone-1	418	P - 1
J-192		Zone-1	383	P - 1
J-193		Zone-1	384	P - 1
J-194		Zone-1	421	P - 1
J-195		Zone-1	429	P - 1
J-196		Zone-1	412	P - 1
J-197		Zone-1	429	P - 1
J-198		Zone-1	435	P - 1
J-199		Zone-1	411	P - 1
J-200		Zone-1	425	P - 1
J-201		Zone-1	432	P - 1
J-202		Zone-1	430	P - 1
J-203		Zone-1	422	P - 1
J-204		Zone-1	455	P - 1
J-205		Zone-1	338	P - 1
J-206		Zone-1	415	P - 1
J-207		Zone-1	396	P - 1
J-208		Zone-1	402	P - 1
J-209		Zone-1	374	P - 1
J-210		Zone-1	416	P - 1
J-211		Zone-1	440	P - 1
J-212		Zone-1	422	P - 1
J-213		Zone-1	436	P - 1
J-214		Zone-1	458	P - 1
J-216		Zone-1	445	P - 1
J-217		Zone-1	405	P - 1
J-218		Zone-1	412	P - 1
J-219		Zone-1	395	P - 1
J-220		Zone-1	381	P - 1
J-221		Zone-1	373	P - 1
J-222		Zone-1	394	P - 1
J-225		Zone-1	383	P - 1
J-226		Zone-1	386	P - 1
J-227		Zone-1	385	P - 1

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-228		Zone-1	397	P - 1
J-230		Zone-1	406	P - 1
J-231		Zone-1	402	P - 1
J-232		Zone-1	390	P - 1
J-233		Zone-1	406	P - 1
J-235		Zone-1	406	P - 1
J-236		Zone-1	414	P - 1
J-237		Zone-1	400	P - 1
J-238		Zone-1	414	P - 1
J-239		Zone-1	408	P - 1
J-240		Zone-1	408	P - 1
J-241		Zone-1	392	P - 1
J-245		Zone-1	285	P - 1
J-246		Zone-1	410	P - 1
J-247		Zone-1	250	P - 1
J-248		Zone-1	100	P - 1
J-249		Zone-1	275	P - 1
J-250		Zone-1	275	P - 1
J-251		Zone-1	225	P - 1
J-252		Zone-1	275	P - 1
J-253		Zone-1	285	P - 1
J-254		Zone-1	325	P - 1
J-255		Zone-1	325	P - 1
J-256		Zone-1	356	P - 1
J-257		Zone-1	393	P - 1
J-258		Zone-1	343	P - 1
J-259		Zone-1	337	P - 1
J-260		Zone-1	300	P - 1
J-261		Zone-1	250	P - 1
J-262		Zone-1	290	P - 1
J-264		Zone-1	306	P - 1
J-265		Zone-1	290	P - 1
J-266		Zone-1	275	P - 1
J-267		Zone-1	195	P - 1
J-268		Zone-1	125	P - 1
J-269		Zone-1	355	P - 1
J-270		Zone-1	342	P - 1
J-271		Zone-1	377	P - 1
J-272		Zone-1	375	P - 1
J-273		Zone-1	375	P - 1
J-274		Zone-1	300	P - 1
J-277		Zone-1	224	P - 1
J-278		Zone-1	207	P - 1
J-279		Zone-1	175	P - 1
J-280		Zone-1	224	P - 1
J-281		Zone-1	200	P - 1
J-283		Zone-1	385	P - 1
J-284		Zone-1	379	P - 1
J-285		Zone-1	380	P - 1
J-287		Zone-1	377	P - 1
J-288		Zone-1	360	P - 1

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-289		Zone-1	363	P - 1
J-290		Zone-1	360	P - 1
J-291		Zone-1	363	P - 1
J-292		Zone-1	373	P - 1
J-293		Zone-1	378	P - 1
J-294		Zone-1	375	P - 1
J-295		Zone-1	345	P - 1
J-296		Zone-1	360	P - 1
J-298		Zone-1	399	P - 1
J-300		Zone-1	395	P - 1
J-303		Zone-1	375	P - 1
J-304		Zone-1	301	P - 1
J-305		Zone-1	325	P - 1
J-308		Zone-1	335	P - 1
J-309		Zone-1	365	P - 1
J-310		Zone-1	290	P - 1
J-312		Zone-1	339	P - 1
J-313		Zone-1	325	P - 1
J-314		Zone-1	298	P - 1
J-315		Zone-1	225	P - 1
J-316		Zone-1	225	P - 1
J-317		Zone-1	200	P - 1
J-318		Zone-1	150	P - 1
J-319		Zone-1	132	P - 1
J-320		Zone-1	310	P - 1
J-321		Zone-1	300	P - 1
J-322		Zone-1	260	P - 1
J-323		Zone-1	247	P - 1
J-325		Zone-1	285	P - 1
J-326		Zone-1	345	P - 1
J-327		Zone-1	310	P - 1
J-328		Zone-1	275	P - 1
J-329		Zone-1	275	P - 1
J-330		Zone-1	280	P - 1
J-331		Zone-1	272	P - 1
J-332		Zone-1	307	P - 1
J-333		Zone-1	300	P - 1
J-334		Zone-1	297	P - 1
J-335		Zone-1	295	P - 1
J-336		Zone-1	280	P - 1
J-337		Zone-1	338	P - 1
J-338		Zone-1	330	P - 1
J-343		Zone-1	380	P - 1
J-344		Zone-1	360	P - 1
J-345		Zone-1	369	P - 1
J-346		Zone-1	360	P - 1
J-347		Zone-1	364	P - 1
J-348		Zone-1	365	P - 1
J-349		Zone-1	392	P - 1
J-350		Zone-1	422	P - 1
J-351		Zone-1	419	P - 1

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-352		Zone-1	422	P - 1
J-353		Zone-1	395	P - 1
J-354		Zone-1	398	P - 1
J-355		Zone-1	415	P - 1
J-356		Zone-1	414	P - 1
J-357		Zone-1	437	P - 1
J-358		Zone-1	438	P - 1
J-359		Zone-1	423	P - 1
J-360		Zone-1	420	P - 1
J-361		Zone-1	414	P - 1
J-362		Zone-1	398	P - 1
J-363		Zone-1	407	P - 1
J-365		Zone-1	403	P - 1
J-367		Zone-1	381	P - 1
J-368		Zone-1	423	P - 1
J-369		Zone-1	422	P - 1
J-370		Zone-1	400	P - 1
J-371		Zone-1	375	P - 1
J-372		Zone-1	353	P - 1
J-373		Zone-1	341	P - 1
J-374		Zone-1	342	P - 1
J-375		Zone-1	341	P - 1
J-376		Zone-1	341	P - 1
J-377		Zone-1	354	P - 1
J-378		Zone-1	347	P - 1
J-379		Zone-1	348	P - 1
J-381		Zone-1	362	P - 1
J-382		Zone-1	358	P - 1
J-383		Zone-1	381	P - 1
J-384		Zone-1	401	P - 1
J-385		Zone-1	408	P - 1
J-386		Zone-1	407	P - 1
J-392		Zone-1	377	P - 1
J-394		Zone-1	379	P - 1
J-396		Zone-1	387	P - 1
J-397		Zone-1	370	P - 1
J-398		Zone-1	339	P - 1
J-399		Zone-1	366	P - 1
J-400		Zone-1	336	P - 1
J-402		Zone-1	335	P - 1
J-403		Zone-1	365	P - 1
J-404		Zone-1	360	P - 1
J-405		Zone-1	336	P - 1
J-407		Zone-1	350	P - 1
J-408		Zone-1	362	P - 1
J-409		Zone-1	348	P - 1
J-410		Zone-1	399	P - 1
J-411		Zone-1	399	P - 1
J-412		Zone-1	395	P - 1
J-413		Zone-1	397	P - 1
J-414		Zone-1	365	P - 1

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-415		Zone-1	350	P - 1
J-416		Zone-1	332	P - 1
J-417		Zone-1	325	P - 1
J-418		Zone-1	323	P - 1
J-419		Zone-1	350	P - 1
J-422		Zone-1	350	P - 1
J-423		Zone-1	352	P - 1
J-424		Zone-1	462	P - 1
J-425		Zone-1	395	P - 1
J-426		Zone-1	395	P - 1
J-427		Zone-1	385	P - 1
J-428		Zone-1	370	P - 1
J-429		Zone-1	357	P - 1
J-430		Zone-1	346	P - 1
J-431		Zone-1	345	P - 1
J-432		Zone-1	337	P - 1
J-433		Zone-1	352	P - 1
J-434		Zone-1	366	P - 1
J-435		Zone-1	370	P - 1
J-437		Zone-1	376	P - 1
J-438		Zone-1	366	P - 1
J-439		Zone-1	259	P - 1
J-440		Zone-1	375	P - 1
J-442		Zone-1	365	P - 1
J-444		Zone-1	359	P - 1
J-445		Zone-1	375	P - 1
J-446		Zone-1	357	P - 1
J-447		Zone-1	357	P - 1
J-449		Zone-1	362	P - 1
J-452		Zone-1	361	P - 1
J-454		Zone-1	348	P - 1
J-455		Zone-1	342	P - 1
J-456		Zone-1	341	P - 1
J-457		Zone-1	330	P - 1
J-458		Zone-1	324	P - 1
J-463		Zone-1	337	P - 1
J-466		Zone-1	342	P - 1
J-467		Zone-1	320	P - 1
J-468		Zone-1	316	P - 1
J-469		Zone-1	345	P - 1
J-470		Zone-1	348	P - 1
J-471		Zone-1	355	P - 1
J-472		Zone-1	275	P - 1
J-473		Zone-1	300	P - 1
J-474		Zone-1	277	P - 1
J-476		Zone-1	325	P - 1
J-477		Zone-1	322	P - 1
J-490		Zone-1	360	P - 1
J-494		Zone-1	420	P - 1
J-495		Zone-1	495	P - 1
J-496		Zone-1	495	P - 1

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-497		Zone-1	0	P - 1
J-498		Zone-1	313	P - 1
J-500		Zone-1	345	P - 1
J-501		Zone-1	458	P - 1
J-502		Zone-1	360	P - 1
J-504		Zone-1	360	P - 1
J-506		Zone-1	362	P - 1
J-508		Zone-1	365	P - 1
J-509		Zone-1	482	P - 1
J-510		Zone-1	463	P - 1
J-512		Zone-1	390	P - 1
J-513		Zone-1	400	P - 1
J-516		Zone-1	420	P - 1
J-518		Zone-1	400	P - 1
J-519		Zone-1	300	P - 1
J-520		Zone-1	300	P - 1
J-521		Zone-1	350	P - 1
J-522		Zone-1	340	P - 1
J-523		Zone-1	348	P - 1
J-524		Zone-1	348	P - 1
J-525		Zone-1	320	P - 1
J-527		Zone-1	460	P - 1
J-550		Zone-1	325	P - 1
J-800		Zone-2	506	P - 1
J-801		Zone-2	506	P - 1
J-804		Zone-2	482	P - 1
J-808		Zone-2	451	P - 1
J-812		Zone-2	485	P - 1
J-816		Zone-2	485	P - 1
J-820		Zone-2	445	P - 1
J-824		Zone-2	495	P - 1
J-836		Zone-2	403	P - 1
J-840		Zone-2	463	P - 1
J-844		Zone-2	450	P - 1
J-848		Zone-2	445	P - 1
J-852		Zone-2	475	P - 1
J-856		Zone-2	479	P - 1
J-860		Zone-2	485	P - 1
J-864		Zone-2	485	P - 1
J-868		Zone-2	495	P - 1
J-872		Zone-2	479	P - 1
J-876		Zone-2	460	P - 1
J-880		Zone-2	462	P - 1
J-874		Zone-3	275	P - 1
J-878		Zone-3	260	P - 1
J-882		Zone-3	257	P - 1
J-886		Zone-3	254	P - 1
J-890		Zone-3	248	P - 1
J-894		Zone-3	246	P - 1
J-898		Zone-3	244	P - 1
J-902		Zone-3	243	P - 1

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Pattern
J-906		Zone-3	235	P - 1
J-910		Zone-3	232	P - 1
J-914		Zone-3	228	P - 1
J-918		Zone-3	225	P - 1
J-922		Zone-3	226	P - 1
J-926		Zone-3	221	P - 1
J-930		Zone-3	210	P - 1
J-934		Zone-3	205	P - 1
J-938		Zone-3	198	P - 1
J-942		Zone-3	194	P - 1
J-946		Zone-3	185	P - 1
J-950		Zone-3	188	P - 1
J-954		Zone-3	192	P - 1
J-958		Zone-3	195	P - 1
J-962		Zone-3	205	P - 1
J-966		Zone-3	225	P - 1
J-970		Zone-3	230	P - 1
J-974		Zone-3	235	P - 1
J-978		Zone-3	243	P - 1
J-982		Zone-3	255	P - 1
J-986		Zone-3	259	P - 1
J-990		Zone-3	261	P - 1
J-994		Zone-3	265	P - 1
J-998		Zone-3	275	P - 1
J-1002		Zone-3	280	P - 1
J-1006		Zone-3	288	P - 1
J-1010		Zone-3	294	P - 1
J-1014		Zone-3	279	P - 1
J-1018		Zone-1	380	P - 1
J-1022		Zone-1	376	P - 1
J-1026		Zone-1	375	P - 1
J-1030		Zone-1	374	P - 1
J-1034		Zone-1	365	P - 1
J-1038		Zone-1	364	P - 1
J-1042		Zone-1	360	P - 1
J-1046		Zone-1	359	P - 1
J-1050		Zone-1	355	P - 1
J-1054		Zone-1	354	P - 1
J-1058		Zone-1	354	P - 1
J-1062		Zone-1	355	P - 1
J-415		Zone-1	350	P - 1

**MT. VIEW-EDGEWOOD WATER COMPANY
HYDRAULIC ANALYSIS
RUN 1**

SUMMARY OF INPUT DATA - PIPE SUMMARY

Run Description: Input Data
Drawing: Mt-View

Pipe Number	Node Nos.		Pipe Diameter (inches)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-2	J-125	J-50	179	8.0	130	0.0
P-3	J-50	J-52	292	8.0	130	0.0
P-5	J-414	J-54	139	8.0	130	0.1
P-6	J-416	J-56	547	4.0	130	0.4
P-7	J-56	J-417	225	4.0	130	0.3
P-9	J-412	J-54	154	8.0	130	0.1
P-10	J-417	J-58	1047	8.0	130	0.1
P-12	J-422	J-58	718	8.0	130	0.1
P-13	J-446	J-60	103	8.0	130	0.1
P-15	J-428	J-60	331	8.0	130	0.1
P-18	J-183	J-62	360	8.0	130	0.0
P-19	J-188	J-64	165	8.0	130	0.1
P-20	J-195	J-66	1036	8.0	130	0.3
P-21	J-66	J-196	789	8.0	130	0.2
P-22	J-64	J-66	267	8.0	130	0.1
P-23	J-201	J-204	1145	8.0	130	0.2
P-25	J-10	T3	53	12.0	130	0.0
P-28	J-68	J-438	122	12.0	130	0.0
P-35	J-519	J-70	658	8.0	130	0.0
P-36	J-70	J-477	313	8.0	130	0.0
P-37	J-440	J-72	545	8.0	130	0.1
P-38	J-72	J-74	247	8.0	130	0.1
P-39	J-74	J-442	552	8.0	130	0.1
P-40	J-72	J-445	192	8.0	130	0.0
P-41	J-106	J-104	493	6.0	130	0.1
P-42	J-119	J-76	541	4.0	130	0.1
P-43	J-76	J-120	308	4.0	130	0.0
P-44	J-52	J-76	658	8.0	130	0.0
P-45	J-118	J-78	714	8.0	130	0.0
P-46	J-78	J-142	594	8.0	130	0.0
P-47	J-156	J-80	244	8.0	130	0.0
P-48	J-80	J-157	263	8.0	130	0.0
P-49	J-80	J-82	630	8.0	130	0.0
P-50	J-267	J-84	393	6.0	130	0.1
P-51	J-84	J-268	1798	6.0	130	0.1
P-52	J-84	J-86	334	8.0	130	0.0
P-53	J-496	J-5	160	10.0	130	0.0
P-55	J-425	J-88	496	8.0	130	0.4
P-56	J-88	J-427	221	8.0	130	0.4
P-57	J-427	J-90	388	8.0	130	0.4
P-58	J-90	J-382	386	8.0	130	0.4
P-59	J-236	J-92	78	8.0	130	0.5
P-60	J-92	J-237	252	8.0	130	0.3
P-62	J-94	J-386	693	8.0	130	0.1
P-63	J-92	J-94	495	8.0	130	0.2
P-64	J-237	J-96	261	8.0	130	0.1
P-65	J-96	J-94	209	8.0	130	0.1
P-66	J-413	J-98	219	4.0	130	0.4
P-67	J-98	J-414	267	8.0	130	0.1
P-69	J-100	J-56	214	8.0	130	0.2

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-70	J-54	J-500	234	8	130	0.2
P-71	J-500	J-100	363	8	130	0.2
P-72	J-416	J-405	557	4	130	0.6
P-73	J-452	J-502	305	8	130	0.5
P-74	J-502	J-454	342	8	130	0.5
P-75	J-502	J-504	800	8	130	0.0
P-76	J-449	J-506	338	8	130	0.5
P-77	J-506	J-452	169	8	130	0.5
P-78	J-506	J-508	1070	8	130	0.0
P-92	J-155	J-501	100	8	130	0.0
P-93	J-362	J-836	888	6	130	0.4
P-101	J-101	J-102	108	8	130	0.1
P-102	J-101	J-103	844	8	130	0.1
P-103	J-103	J-104	314	6	130	0.1
P-104	J-102	J-105	625	8	130	0.1
P-105	J-102	J-106	316	6	130	0.1
P-106	J-105	J-107	242	8	130	0.0
P-107	J-107	J-108	253	8	130	0.0
P-108	J-107	J-109	229	4	130	0.1
P-109	J-108	J-110	198	4	130	0.1
P-110	J-108	J-112	1338	8	130	0.1
P-111	J-111	J-112	408	8	130	0.1
P-114	J-103	J-114	650	8	130	0.2
P-115	J-114	J-115	167	4	130	0.8
P-116	J-115	J-116	656	6	130	0.5
P-117	J-116	J-117	721	6	130	0.6
P-118	J-117	J-118	566	6	130	0.6
P-119	J-111	J-119	950	4	130	0.1
P-121	J-120	J-121	770	4	130	0.1
P-122	J-105	J-498	435	8	130	0.1
P-123	J-122	J-123	327	8	130	0.1
P-124	J-123	J-124	493	6	130	0.1
P-125	J-124	J-125	524	6	130	0.1
P-126	J-125	J-126	297	4	130	0.1
P-127	J-123	J-121	1227	8	130	0.0
P-128	J-128	J-121	249	6	130	0.0
P-132	J-130	J-131	209	4	130	0.3
P-134	J-132	J-131	748	4	130	0.2
P-135	J-132	J-122	1307	8	130	0.0
P-136	J-133	J-130	1155	6	130	0.1
P-147	J-142	J-143	52	8	130	0.0
P-148	J-143	J-144	258	4	130	0.1
P-149	J-143	J-145	845	4	130	0.2
P-150	J-145	J-146	1438	4	130	0.2
P-151	J-118	J-147	678	6	130	0.6
P-152	J-147	J-513	505	8	130	0.4
P-153	J-148	J-149	841	8	130	0.4
P-155	J-149	J-150	193	8	130	0.9
P-156	J-150	J-146	335	8	130	0.9
P-158	J-146	J-152	1069	8	130	0.8
P-159	J-149	J-510	975	12	130	1.1
P-160	J-153	J-154	225	12	130	1.0
P-161	J-154	J-155	740	6	130	0.5
P-162	J-155	J-156	504	6	130	0.5
P-164	J-156	J-158	1444	6	130	0.5
P-165	J-152	J-159	378	8	130	0.8
P-166	J-159	J-160	543	8	130	0.0
P-167	J-159	J-161	807	8	130	0.8
P-168	J-161	J-162	957	8	130	0.3

0.1

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-169	J-162	J-163	347	8.0	130	0.1
P-170	J-163	J-164	515	8.0	130	0.0
P-171	J-163	J-158	493	8.0	130	0.1
P-172	J-161	J-165	135	10.0	130	0.3
P-173	J-165	J-166	739	8.0	130	0.1
P-174	J-166	J-167	418	8.0	130	0.1
P-175	J-165	J-167	502	10.0	130	0.2
P-176	J-167	J-168	788	10.0	130	0.3
P-177	J-168	J-169	468	6.0	130	0.1
P-178	PRV-1	J-170	1054	6.0	130	0.1
P-178a	J-169	PRV-1	10	6.0	130	0.1
P-179	J-170	J-171	315	6.0	130	0.0
P-180	J-170	J-172	587	6.0	130	0.1
P-181	J-172	J-173	709	6.0	130	0.0
P-182	J-168	J-174	1020	10.0	130	0.2
P-183	J-174	J-175	326	6.0	130	0.2
P-184	J-175	J-176	211	6.0	130	0.2
P-185	J-176	J-177	713	4.0	130	0.3
P-186	J-175	J-178	321	4.0	130	0.1
P-187	J-177	J-179	733	4.0	130	0.0
P-188	J-179	J-180	343	6.0	130	0.2
P-189	J-180	J-181	336	6.0	130	0.2
P-190	J-181	J-162	1329	6.0	130	0.3
P-191	J-179	J-182	172	6.0	130	0.2
P-192	J-182	J-183	626	8.0	130	0.0
P-193	J-182	J-184	329	6.0	130	0.1
P-194	J-184	J-185	511	6.0	130	0.0
P-195	J-184	J-186	647	6.0	130	0.1
P-196	J-186	J-187	364	6.0	130	0.0
P-197	J-187	J-188	1139	8.0	130	0.1
P-198	J-177	J-518	294	4.0	130	0.2
P-199	J-189	J-190	725	8.0	130	0.0
P-200	J-190	J-191	575	6.0	130	0.0
P-201	J-191	J-192	847	6.0	130	0.0
P-202	J-192	J-193	668	8.0	130	0.1
P-203	J-193	J-194	689	6.0	130	0.1
P-204	J-194	J-187	447	6.0	130	0.1
P-205	J-158	J-195	647	8.0	130	0.3
P-206	PRV-4	J-128	15	6.0	130	0.0
P-207	J-196	J-193	1315	8.0	130	0.1
P-208	J-154	J-197	486	12.0	130	0.9
P-209	J-197	J-198	936	6.0	130	0.0
P-210	J-197	J-199	636	12.0	130	0.9
P-211	J-133	J-200	622	6.0	130	0.2
P-212	J-200	J-201	837	8.0	130	0.1
P-213	J-201	J-494	579	8.0	130	0.4
P-215	J-199	J-202	1343	12.0	130	0.7
P-216	J-202	J-203	361	12.0	130	0.6
P-217	J-203	J-527	898	6.0	130	0.4
P-218	J-202	J-205	850	6.0	130	0.4
P-219	J-205	J-206	975	6.0	130	0.1
P-220	J-206	J-207	679	6.0	130	0.0
P-221	J-206	J-196	844	6.0	130	0.0
P-222	J-205	J-208	1171	8.0	130	0.2
P-223	J-196	J-209	1355	8.0	130	0.4
P-224	J-208	J-210	727	6.0	130	0.3
P-225	J-209	J-211	976	8.0	130	0.2
P-226	J-211	J-210	650	8.0	130	0.2
P-227	J-211	J-212	897	4.0	130	0.1

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-226	J-211	J-210	650	8.0	130	0.2
P-227	J-211	J-212	897	4.0	130	0.1
P-228	J-203	J-213	990	12.0	130	0.7
P-229	J-213	J-210	1000	6.0	130	0.0
P-230	J-213	J-214	611	6.0	130	0.1
P-231	J-214	J-424	957	6.0	130	0.0
P-232	J-213	J-216	597	12.0	130	0.7
P-234	J-216	J-218	379	12.0	130	0.7
P-235	J-218	J-219	793	4.0	130	0.1
P-236	J-209	J-220	675	8.0	130	0.5
P-237	J-220	J-221	604	8.0	130	0.0
P-238	J-192	J-222	1336	2.0	130	0.2
P-239	J-222	J-221	693	8.0	130	0.2
P-242	J-221	J-225	415	8.0	130	0.1
P-243	J-225	J-226	813	8.0	130	0.1
P-244	J-220	J-227	1481	8.0	130	0.5
P-245	J-227	J-228	605	8.0	130	0.5
P-246	J-68	J-437	390	12.0	130	0.0
P-247	J-228	J-230	522	8.0	130	0.5
P-248	J-230	J-235	72	8.0	130	1.0
P-249	J-230	J-231	943	12.0	130	0.2
P-250	J-231	J-232	700	12.0	130	0.2
P-251	J-131	J-550	755	4.0	130	0.0
P-252	J-236	J-233	603	8.0	130	0.5
P-254	J-236	J-238	43	4.0	130	0.3
P-255	J-238	J-239	188	4.0	130	0.6
P-256	J-239	J-240	147	4.0	130	0.1
P-257	J-240	J-235	343	4.0	130	0.2
P-258	J-238	J-241	753	4.0	130	0.2
P-260	J-226	J-239	1361	4.0	130	0.5
P-262	J-115	J-111	834	4.0	130	0.4
P-264	J-176	J-245	449	4.0	130	0.1
P-265	J-180	J-246	599	4.0	130	0.1
P-266	J-174	J-247	199	10.0	130	0.2
P-267	J-247	J-248	1368	10.0	130	0.1
P-268	J-247	J-249	397	6.0	130	0.3
P-269	J-249	J-250	95	8.0	130	0.0
P-270	J-250	J-251	591	8.0	130	0.0
P-271	J-250	J-252	526	8.0	130	0.0
P-272	J-249	J-253	473	6.0	130	0.2
P-273	J-253	J-254	278	8.0	130	0.1
P-274	J-254	J-255	225	8.0	130	0.1
P-275	J-255	J-256	732	8.0	130	0.0
P-276	J-256	J-257	394	8.0	130	0.0
P-277	J-255	J-258	332	8.0	130	0.0
P-278	J-258	J-259	319	8.0	130	0.0
P-279	J-259	J-260	597	6.0	130	0.1
P-280	J-260	J-261	851	4.0	130	0.1
P-281	J-261	J-262	302	4.0	130	0.1
P-283	J-260	J-264	304	4.0	130	0.0
P-284	J-264	J-265	541	4.0	130	0.1
P-285	J-264	J-266	520	4.0	130	0.1
P-286	J-266	J-267	1214	6.0	130	0.1
P-288	J-259	J-269	903	8.0	130	0.0
P-289	J-269	J-270	638	8.0	130	0.1
P-290	J-270	J-271	607	8.0	130	0.1
P-291	J-271	J-272	579	6.0	130	0.0
P-292	J-266	J-272	950	6.0	130	0.0
P-293	J-271	J-273	1080	6.0	130	1.4

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-294	J-273	J-274	768	6	130	1.4
P-297	J-274	J-277	501	6	130	4.5
P-298	J-277	J-278	265	6	130	4.5
P-299	J-278	J-279	622	8	130	2.6
P-300	J-277	J-280	102	6	130	0.1
P-301	PRV-2	J-281	955	4	130	0.1
P-301a	J-280	PRV-2	10	4	130	0.1
P-303	J-271	J-283	1573	6	130	0.2
P-304	J-283	J-192	407	6	130	0.2
P-305	J-271	J-284	1281	10	130	0.4
P-306	J-284	J-285	1331	8	130	0.5
P-308	J-285	J-287	895	6	130	0.5
P-309	J-287	J-288	793	6	130	0.1
P-310	J-288	J-289	170	8	130	0.3
P-311	J-288	J-490	260	8	130	0.2
P-312	J-290	J-490	95	4	130	0.9
P-313	J-289	J-292	406	8	130	0.3
P-314	J-284	J-293	533	8	130	0.7
P-315	J-293	J-294	212	8	130	0.7
P-316	J-294	J-295	351	8	130	0.6
P-317	J-295	J-296	317	8	130	0.7
P-318	J-510	J-840	183	6	130	0.0
P-319	J-284	J-298	698	8	130	0.6
P-320	J-133	J-820	221	6	130	0.0
P-321	J-298	J-300	329	8	130	0.4
P-324	J-298	J-303	612	8	130	1.0
P-326	J-304	J-305	208	8	130	0.4
P-327	J-495	J-496	54	10	130	0.7
P-328	J-496	J-497	36	10	130	0.7
P-329	J-305	J-308	152	8	130	0.3
P-330	J-308	J-309	460	8	130	0.3
P-331	J-309	J-310	911	6	130	0.6
P-332	J-310	J-296	1088	6	130	0.5
P-333	J-300	J-296	448	6	130	0.7
P-335	J-285	J-222	658	8	130	0.2
P-336	J-304	J-312	1370	6	130	0.1
P-337	J-312	J-313	324	4	130	0.2
P-338	J-313	J-314	915	4	130	0.0
P-339	J-314	J-315	1001	4	130	0.0
P-340	J-315	J-313	326	4	130	0.1
P-341	J-312	J-316	1289	12	130	0.0
P-342	PRV-3	J-317	599	8	130	0.0
P-342a	J-316	PRV-3	100	8	130	0.0
P-343	J-317	J-318	690	8	130	0.0
P-344	J-318	J-319	540	8	130	0.0
P-345	J-312	J-320	336	6	130	0.3
P-346	J-320	J-321	785	4	130	0.1
P-347	J-321	J-322	712	4	130	0.1
P-348	J-320	J-322	665	6	130	0.2
P-349	J-322	J-323	314	6	130	0.2
P-350	J-801	J-824	127	10	130	0.0
P-351	J-323	J-325	825	6	130	0.2
P-352	J-312	J-326	347	4	130	0.4
P-353	J-326	J-327	613	6	130	0.1
P-354	J-327	J-328	479	6	130	0.1
P-355	J-328	J-329	130	6	130	0.0
P-356	J-329	J-330	221	6	130	0.0
P-357	J-328	J-331	310	6	130	0.0
P-358	J-329	J-332	1037	6	130	0.0

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-359	J-332	J-333	587	6.0	130	0.0
P-360	J-333	J-325	605	6.0	130	0.1
P-361	J-332	J-325	358	6.0	130	0.1
P-362	J-332	J-334	530	6.0	130	0.1
P-363	J-334	J-335	486	8.0	130	0.0
P-364	J-335	J-336	410	8.0	130	0.0
P-365	J-326	J-337	641	4.0	130	0.1
P-366	J-337	J-338	412	4.0	130	0.1
P-367	J-316	J-43	89	10.0	130	0.0
P-368	J-337	J-326	1256	4.0	130	0.1
P-369	J-800	J-801	73	6.0	130	0.0
P-370	J-43	WP-9	101	10.0	130	0.0
P-371	SO11	PMP-11	190	8.0	130	0.0
P-372	J-291	J-343	1180	6.0	130	0.4
P-373	J-292	J-344	855	8.0	130	1.0
P-374	J-344	J-345	807	8.0	130	1.0
P-375	J-345	J-343	411	8.0	130	0.8
P-376	J-287	J-346	1256	6.0	130	0.6
P-377	J-346	J-347	427	6.0	130	0.5
P-378	J-347	J-348	133	8.0	130	0.6
P-379	J-348	J-343	902	8.0	130	0.6
P-380	J-218	J-349	688	12.0	130	0.6
P-381	J-349	J-350	557	6.0	130	0.1
P-382	J-350	J-351	592	8.0	130	0.0
P-383	J-351	J-352	542	4.0	130	0.1
P-384	J-349	J-353	427	12.0	130	0.6
P-385	J-353	J-354	557	12.0	130	0.6
P-386	J-354	J-232	1489	12.0	130	0.4
P-387	J-354	J-355	583	6.0	130	0.4
P-388	J-355	J-356	709	6.0	130	0.4
P-389	J-356	J-357	1009	6.0	130	0.1
P-390	J-357	J-358	82	6.0	130	0.1
P-391	J-358	J-359	884	6.0	130	0.1
P-392	J-360	J-359	314	6.0	130	0.1
P-393	J-360	J-361	891	4.0	130	0.1
P-394	J-361	J-362	1166	4.0	130	0.1
P-395	J-362	J-363	429	6.0	130	0.1
P-396	WP-7	J-289	280	8.0	130	0.0
P-397	J-363	J-365	502	6.0	130	0.0
P-398	J-274	J-44	737	8.0	130	1.7
P-399	J-303	J-45	880	12.0	130	0.4
P-400	J-362	J-367	660	6.0	130	0.4
P-401	J-356	J-360	360	6.0	130	0.2
P-402	J-359	J-368	320	6.0	130	0.2
P-403	J-368	J-369	758	4.0	130	0.4
P-404	J-369	J-370	502	4.0	130	0.3
P-405	J-370	J-371	520	8.0	130	0.1
P-406	J-371	J-372	743	8.0	130	0.1
P-407	J-372	J-373	612	8.0	130	0.0
P-408	J-367	J-374	707	6.0	130	0.5
P-409	J-374	J-375	1337	4.0	130	0.2
P-410	J-375	J-376	490	4.0	130	0.2
P-411	J-376	J-377	970	8.0	130	0.0
P-412	J-377	J-378	882	8.0	130	0.0
P-413	J-374	J-373	75	6.0	130	0.3
P-414	J-373	J-379	641	6.0	130	0.4
P-415	J-379	J-378	537	6.0	130	0.4
P-416	J-45	J-304	475	12.0	130	0.3
P-417	J-367	J-381	357	8.0	130	0.1

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-418	J-381	J-382	856	8.0	130	0.1
P-419	J-382	J-383	1433	8.0	130	0.3
P-420	J-383	J-384	653	8.0	130	0.2
P-421	J-233	J-385	1376	8.0	130	0.4
P-422	J-236	J-386	950	6.0	130	0.2
P-423	J-44	J-45	860	8.0	130	1.7
P-424	J-304	J-312	1400	12.0	130	0.1
P-425	J-804	J-808	400	4.0	130	0.1
P-426	J-439	J-10	1000	3.0	130	0.0
P-427	J-473	J-46	350	4.0	130	0.0
P-428	J-439	J-10	10000	0.3	130	0.0
P-429	J-345	J-392	402	10.0	130	1.1
P-431	J-392	J-394	400	10.0	130	0.1
P-433	J-394	J-396	611	10.0	130	0.1
P-434	J-396	J-397	879	10.0	130	0.1
P-435	J-397	J-398	426	10.0	130	0.1
P-436	J-398	J-399	742	4.0	130	0.2
P-437	J-399	J-400	529	4.0	130	0.3
P-439	J-399	J-402	734	8.0	130	0.0
P-440	J-400	J-403	475	8.0	130	0.0
P-441	J-403	J-404	471	8.0	130	0.1
P-442	J-400	J-405	361	4.0	130	0.2
P-444	J-405	J-407	245	6.0	130	0.2
P-445	J-407	J-408	666	8.0	130	0.1
P-446	J-398	J-409	461	10.0	130	0.1
P-447	J-386	J-410	398	6.0	130	0.4
P-448	J-410	J-411	332	6.0	130	0.2
P-449	J-411	J-385	322	6.0	130	0.3
P-450	J-410	J-412	327	4.0	130	0.4
P-451	J-410	J-413	183	6.0	130	0.4
P-453	J-413	J-415	327	6.0	130	0.2
P-454	J-415	J-416	1252	4.0	130	0.3
P-456	J-417	J-384	1176	4.0	130	0.3
P-457	J-385	J-384	640	8.0	130	0.2
P-458	J-383	J-418	671	8.0	130	0.4
P-459	J-418	J-419	1019	8.0	130	0.4
P-461	J-419	J-422	549	8.0	130	0.1
P-464	J-232	J-425	613	8.0	130	0.4
P-465	J-425	J-426	588	6.0	130	0.0
P-467	J-408	J-428	599	8.0	130	0.1
P-468	J-408	J-404	285	8.0	130	0.1
P-469	J-404	J-429	347	4.0	130	0.3
P-470	J-429	J-430	924	4.0	130	0.2
P-471	J-409	J-430	365	10.0	130	0.1
P-472	J-430	J-431	335	10.0	130	0.1
P-473	J-431	J-432	471	10.0	130	0.1
P-474	J-432	J-433	985	10.0	130	0.1
P-475	J-433	J-434	413	8.0	130	0.1
P-476	J-434	J-435	333	8.0	130	0.2
P-478	J-435	J-437	263	8.0	130	0.2
P-480	J-438	J-439	185	12.0	130	0.0
P-481	J-437	J-440	431	6.0	130	0.4
P-483	J-440	J-442	250	6.0	130	0.2
P-485	J-442	J-423	334	6.0	130	0.3
P-486	J-423	J-444	782	8.0	130	0.1
P-487	J-444	J-445	590	4.0	130	0.2
P-488	J-444	J-446	381	8.0	130	0.1
P-489	J-423	J-447	177	8.0	130	0.4
P-491	J-419	J-449	428	8.0	130	0.5

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-497	J-454	J-521	693	8.0	130	0.2
P-498	J-455	J-447	889	8.0	130	0.4
P-499	J-378	J-456	395	6.0	130	0.4
P-500	J-456	J-457	666	6.0	130	0.4
P-501	J-457	J-458	215	8.0	130	0.2
P-507	J-458	J-463	564	8.0	130	0.2
P-510	J-463	J-466	329	8.0	130	0.2
P-511	J-466	J-467	643	6.0	130	0.1
P-512	J-467	J-468	254	8.0	130	0.0
P-513	J-468	J-469	314	8.0	130	0.0
P-514	J-466	J-470	598	8.0	130	0.1
P-515	J-470	J-471	590	8.0	130	0.1
P-516	J-471	J-454	491	8.0	130	0.0
P-517	J-467	J-472	621	6.0	130	0.1
P-518	J-472	J-474	153	4.0	130	0.1
P-519	J-473	J-474	445	4.0	130	0.1
P-521	J-473	J-476	617	8.0	130	0.0
P-522	J-473	J-477	732	4.0	130	0.1
P-527a	WP-9	SO9	190	10.0	130	0.0
P-528	J-291	J-290	463	4.0	130	0.9
P-536	J-294	J-292	143	8.0	130	1.3
P-543	J-248	J-268	80	10.0	130	0.0
P-544	J-199	J-494	400	8.0	130	0.4
P-547	J-497	J-509	175	10.0	130	2.4
P-548	J-497	T2	70	10.0	130	1.6
P-549	J-495	T1	70	8.0	130	1.2
P-550	J-122	J-498	409	8.0	130	0.1
P-551	J-305	J-309	658	4.0	130	0.2
P-570	J-149	J-509	75	10.0	130	2.3
P-571	J-153	J-510	310	12.0	130	1.0
P-576	J-237	J-512	343	8.0	130	0.3
P-577	J-512	J-347	571	8.0	130	0.3
P-578	J-241	J-347	478	4.0	130	0.2
P-579	J-148	J-513	390	8.0	130	0.4
P-582	J-216	J-516	514	8.0	130	0.0
P-583	J-516	J-217	254	8.0	130	0.0
P-585	J-189	J-518	215	8.0	130	0.0
P-587	J-454	J-524	203	8.0	130	0.3
P-588	J-519	J-520	661	8.0	130	0.1
P-589	J-455	J-521	251	8.0	130	0.4
P-590	J-520	J-522	406	8.0	130	0.1
P-591	J-521	J-522	214	8.0	130	0.2
P-592	J-522	J-523	554	8.0	130	0.1
P-593	J-519	J-524	429	8.0	130	0.1
P-594	J-523	J-524	131	8.0	130	0.1
P-595	J-336	J-525	300	8.0	130	0.0
P-596	J-525	J-338	350	8.0	130	0.0
P-598	J-204	J-527	520	6.0	130	0.4
P-806	J-804	J-880	908	6.0	130	0.0
P-810	J-804	J-840	473	6.0	130	0.0
P-814	J-808	J-872	428	4.0	130	0.0
P-818	J-812	J-816	342	6.0	130	0.0
P-822	J-820	J-848	267	6.0	130	0.0
P-826	J-824	J-868	10	8.0	130	0.1
P-830	J-824	HT-1	5	12.0	130	0.1
P-834	J-824	J-804	327	6.0	130	0.1
P-838	J-836	J-354	506	6.0	130	0.4
P-842	J-844	J-128	78	6.0	130	0.0
P-846	J-844	PRV-4	15	6.0	130	0.0

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-850	J-844	J-848	1004	6.0	130	0.1
P-854	J-844	J-860	493	8.0	130	0.0
P-858	J-848	J-852	588	6.0	130	0.0
P-862	J-852	J-856	290	4.0	130	0.0
P-866	J-856	J-840	100	6.0	130	0.0
P-870	J-860	J-864	567	8.0	130	0.0
P-874	J-860	J-868	286	8.0	130	0.1
P-878	J-868	J-495	109	8.0	130	0.0
P-882	J-868	J-812	677	8.0	130	0.0
P-890	J-876	J-880	271	4.0	130	0.0
P-1000	J-235	J-233	83	8.0	130	0.5
P-1005	J-235	J-233	503	8.0	130	0.5
P-1010	J-323	J-870	518	8.0	130	0.0
P-1015	J-870	J-874	484	8.0	130	0.0
P-1020	J-874	J-878	169	8.0	130	0.0
P-1025	J-878	J-882	258	8.0	130	0.0
P-1030	J-882	J-886	54	8.0	130	0.0
P-1035	J-886	J-890	337	8.0	130	0.0
P-1040	J-890	J-894	370	8.0	130	0.0
P-1045	J-894	J-898	345	8.0	130	0.0
P-1050	J-898	J-902	58	8.0	130	0.0
P-1055	J-902	J-906	458	8.0	130	0.0
P-1060	J-906	J-910	204	8.0	130	0.0
P-1065	J-910	J-914	140	8.0	130	0.0
P-1070	J-914	J-918	30	8.0	130	0.0
P-1075	J-918	J-922	88	8.0	130	0.0
P-1080	J-922	J-926	100	8.0	130	0.0
P-1085	J-926	J-930	316	8.0	130	0.0
P-1090	J-930	J-934	330	8.0	130	0.0
P-1095	J-934	J-938	209	8.0	130	0.0
P-1100	J-938	J-942	180	8.0	130	0.0
P-1105	J-942	J-946	162	8.0	130	0.0
P-1110	J-946	J-950	850	8.0	130	0.0
P-1115	J-950	J-954	190	8.0	130	0.0
P-1120	J-954	J-958	80	8.0	130	0.0
P-1125	J-958	J-962	137	8.0	130	0.0
P-1130	J-962	J-966	172	8.0	130	0.0
P-1135	J-966	J-970	184	8.0	130	0.0
P-1140	J-970	J-974	303	8.0	130	0.0
P-1145	J-974	J-978	28	8.0	130	0.0
P-1150	J-978	J-982	109	8.0	130	0.0
P-1155	J-982	J-986	297	8.0	130	0.0
P-1160	J-986	J-990	46	8.0	130	0.0
P-1165	J-990	J-994	93	8.0	130	0.0
P-1170	J-994	J-998	530	8.0	130	0.0
P-1175	J-998	J-1002	463	8.0	130	0.0
P-1180	J-1002	J-1006	318	8.0	130	0.0
P-1185	J-1006	J-1010	149	8.0	130	0.0
P-1190	J-1010	J-1014	370	8.0	130	0.0
P-1195	J-1014	J-1018	191	8.0	130	0.0
P-1200	J-1018	J-1022	173	8.0	130	0.0
P-1205	J-1022	J-1026	1130	8.0	130	0.0
P-1210	J-1026	J-1030	1221	8.0	130	0.0
P-1215	J-1030	J-1034	731	8.0	130	0.0
P-1220	J-1034	J-1038	309	8.0	130	0.0
P-1225	J-1038	J-1042	1700	8.0	130	0.0
P-1230	J-1042	J-1046	335	8.0	130	0.0
P-1235	J-1046	J-1050	924	8.0	130	0.0

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Roughness Coefficient	Minor Loss Coefficient
	From	To				
P-1240	J-1050	J-1054	1750	8.0	130	0.0
P-1245	J-1054	J-1058	1262	8.0	130	0.0
P-1250	J-1058	J-1062	696	8.0	130	0.0
P-N1i	J-10	PMP-N1	69	6.0	130	0.0
P-N1o	PMP-N1	J-438	122	6.0	130	0.0
P-N2i	J-10	PMP-N2	120	8.0	130	0.0
P-N2o	PMP-N2	J-68	100	8.0	130	0.0
P-N3i	J-10	PMP-N3	100	8.0	130	0.0
P-N3o	PMP-N3	J-68	100	8.0	130	0.0
P-S1i	J-5	PMP-S1	50	2.0	130	0.0
P-S1o	PMP-S1	J-800	50	2.0	130	0.0
P-S2i	J-5	PMP-S2	50	4.0	130	0.0
P-S2o	PMP-S2	J-800	50	4.0	130	0.0
P-S3i	J-5	PMP-S3	50	4.0	130	0.0
P-S3o	PMP-S3	J-800	50	4.0	130	0.0
P-S4i	J-5	PMP-S4	50	4.0	130	0.0
P-S4o	PMP-S4	J-800	48	4.0	130	0.0
WP-1Ri	SO10	WP-1R	100	6.0	130	0.0
WP-1Ro	WP-1R	J-268	30	10.0	130	0.0
WP-3i	SO4	WP-3	136	6.0	130	0.0
WP-3o	J-290	WP-3	136	6.0	130	0.0
WP-5i	SO5	WP-5	250	6.0	130	4.6
WP-5o	WP-5	J-279	121	8.0	130	2.6
WP-6i	SO6	WP-6	200	4.0	130	0.0
WP-6o	WP-6	J-346	100	4.0	130	0.0
WP-7i	SO7	WP-7	193	8.0	130	0.0
WP-8i	SO8	WP-8	101	8.0	130	0.0
WP-8o	WP-8	J-248	30	8.0	130	0.0
WP-11	PMP-11	J-43	150	8.0	130	0.0
WP11	WP-11	J43	150	8.0	130	0.0

APPENDIX B

**RUN 1 RESULTS. MAXIMUM DAY DEMAND
(4,300 ERU'S)**

MT. VIEW-EDGEWOOD WATER COMPANY
HYDRAULIC ANALYSIS

RUN 1

SUMMARY OF INPUT DATA - NODES

Run Description: Output Data
Drawing: Mt-View

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-5		Source	506	17.1
J-10		Source	359	79.3
J-43		Zone-2	207	146.1
J-44		Zone-2	300	236.4
J-45		Zone-2	320	235.9
J-46		Zone-2	260	122.4
J-50		Zone-1	385	68.8
J-52		Zone-1	390	66.6
J-54		Zone-1	365	77.0
J-56		Zone-1	328	93.0
J-58		Zone-1	338	88.6
J-60		Zone-1	357	80.2
J-62		Zone-1	420	53.6
J-64		Zone-1	415	55.7
J-66		Zone-1	415	55.7
J-68		Zone-1	366	76.3
J-70		Zone-1	320	96.3
J-72		Zone-1	375	72.4
J-74		Zone-1	375	72.4
J-76		Zone-1	395	64.5
J-78		Zone-1	275	116.8
J-80		Zone-1	435	47.2
J-82		Zone-1	435	47.2
J-84		Zone-1	185	155.5
J-86		Zone-1	185	155.5
J-88		Zone-1	380	70.6
J-90		Zone-1	370	74.9
J-92		Zone-1	410	57.5
J-94		Zone-1	405	59.7
J-96		Zone-1	403	60.6
J-98		Zone-1	375	72.6
J-100		Zone-1	335	90.0
J-101		Zone-1	225	138.2
J-102		Zone-1	225	138.2
J-103		Zone-1	245	129.5
J-104		Zone-1	306	103.1
J-105		Zone-1	300	105.7
J-106		Zone-1	300	105.7
J-107		Zone-1	300	105.7
J-108		Zone-1	325	94.8
J-109		Zone-1	300	105.7
J-110		Zone-1	335	90.5

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-111		Zone-1	300	105.7
J-112		Zone-1	360	79.7
J-114		Zone-1	250	127.4
J-115		Zone-1	275	116.6
J-116		Zone-1	230	136.2
J-117		Zone-1	250	127.6
J-118		Zone-1	275	116.8
J-119		Zone-1	350	84.0
J-120		Zone-1	400	62.3
J-121		Zone-1	445	42.8
J-122		Zone-1	375	73.2
J-123		Zone-1	375	73.1
J-124		Zone-1	350	84.0
J-125		Zone-1	400	62.3
J-126		Zone-1	375	73.1
J-128		Zone-1	450	40.6
J-130		Zone-1	150	170.7
J-131		Zone-1	275	116.5
J-132		Zone-1	325	94.8
J-133		Zone-1	400	62.3
J-142		Zone-1	275	116.8
J-143		Zone-1	275	116.8
J-144		Zone-1	250	127.7
J-145		Zone-1	400	62.7
J-146		Zone-1	411	57.9
J-147		Zone-1	340	88.7
J-148		Zone-1	462	35.9
J-149		Zone-1	482	27.3
J-150		Zone-1	451	40.7
J-152		Zone-1	429	49.9
J-153		Zone-1	463	35.3
J-154		Zone-1	440	45.4
J-155		Zone-1	458	37.3
J-156		Zone-1	450	40.7
J-157		Zone-1	424	52.0
J-158		Zone-1	427	50.6
J-159		Zone-1	429	49.9
J-160		Zone-1	433	48.1
J-161		Zone-1	381	70.5
J-162		Zone-1	400	62.3
J-163		Zone-1	420	53.6
J-164		Zone-1	437	46.2
J-165		Zone-1	385	68.8
J-166		Zone-1	350	84.0
J-167		Zone-1	271	118.4
J-168		Zone-1	250	127.3
J-169		Zone-1	275	116.5
J-170		Zone-1	140	118.5
J-171		Zone-1	100	135.9
J-172		Zone-1	200	92.5
J-173		Zone-1	225	81.7

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-174		Zone-1	247	128.6
J-175		Zone-1	275	116.5
J-176		Zone-1	357	80.9
J-177		Zone-1	373	73.9
J-178		Zone-1	310	101.3
J-179		Zone-1	400	62.2
J-180		Zone-1	397	63.5
J-181		Zone-1	374	73.5
J-182		Zone-1	407	59.2
J-183		Zone-1	416	55.3
J-184		Zone-1	415	55.7
J-185		Zone-1	410	57.9
J-186		Zone-1	416	55.3
J-187		Zone-1	421	53.1
J-188		Zone-1	415	55.7
J-189		Zone-1	420	53.6
J-190		Zone-1	418	54.4
J-191		Zone-1	418	54.4
J-192		Zone-1	383	69.6
J-193		Zone-1	384	69.2
J-194		Zone-1	421	53.1
J-195		Zone-1	429	49.7
J-196		Zone-1	412	57.0
J-197		Zone-1	429	49.9
J-198		Zone-1	435	47.3
J-199		Zone-1	411	57.6
J-200		Zone-1	425	51.5
J-201		Zone-1	432	48.5
J-202		Zone-1	430	49.3
J-203		Zone-1	422	52.7
J-204		Zone-1	455	38.5
J-205		Zone-1	338	89.1
J-206		Zone-1	415	55.7
J-207		Zone-1	396	63.9
J-208		Zone-1	402	61.3
J-209		Zone-1	374	73.7
J-210		Zone-1	416	55.2
J-211		Zone-1	440	44.8
J-212		Zone-1	422	52.6
J-213		Zone-1	436	46.6
J-214		Zone-1	458	37.0
J-216		Zone-1	445	42.6
J-217		Zone-1	405	60.0
J-218		Zone-1	412	57.1
J-219		Zone-1	395	64.3
J-220		Zone-1	381	70.4
J-221		Zone-1	373	73.8
J-222		Zone-1	394	64.7
J-225		Zone-1	383	69.5
J-226		Zone-1	386	68.2
J-227		Zone-1	385	68.5

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-228		Zone-1	397	63.3
J-230		Zone-1	406	59.3
J-231		Zone-1	402	61.1
J-232		Zone-1	390	66.2
J-233		Zone-1	406	59.3
J-235		Zone-1	406	59.3
J-236		Zone-1	414	55.8
J-237		Zone-1	400	61.9
J-238		Zone-1	414	55.8
J-239		Zone-1	408	58.4
J-240		Zone-1	408	58.4
J-241		Zone-1	392	65.3
J-245		Zone-1	285	112.1
J-246		Zone-1	410	57.9
J-247		Zone-1	250	127.3
J-248		Zone-1	100	192.3
J-249		Zone-1	275	116.5
J-250		Zone-1	275	116.5
J-251		Zone-1	225	138.1
J-252		Zone-1	275	116.5
J-253		Zone-1	285	112.1
J-254		Zone-1	325	94.8
J-255		Zone-1	325	94.8
J-256		Zone-1	356	81.3
J-257		Zone-1	393	65.3
J-258		Zone-1	343	87.0
J-259		Zone-1	337	89.6
J-260		Zone-1	300	105.6
J-261		Zone-1	250	127.3
J-262		Zone-1	290	109.9
J-264		Zone-1	306	103.0
J-265		Zone-1	290	109.9
J-266		Zone-1	275	116.4
J-267		Zone-1	195	151.1
J-268		Zone-1	125	181.5
J-269		Zone-1	355	81.8
J-270		Zone-1	342	87.4
J-271		Zone-1	377	72.2
J-272		Zone-1	375	73.1
J-273		Zone-1	375	73.8
J-274		Zone-1	300	106.9
J-277		Zone-1	224	142.9
J-278		Zone-1	207	151.6
J-279		Zone-1	175	166.4
J-280		Zone-1	224	142.9
J-281		Zone-1	200	71.0
J-283		Zone-1	385	68.7
J-284		Zone-1	379	71.3
J-285		Zone-1	380	70.9
J-287		Zone-1	377	72.2
J-288		Zone-1	360	79.4

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-289		Zone-1	363	78.1
J-290		Zone-1	360	79.3
J-291		Zone-1	363	77.8
J-292		Zone-1	373	73.8
J-293		Zone-1	378	71.7
J-294		Zone-1	375	73.0
J-295		Zone-1	345	86.0
J-296		Zone-1	360	79.5
J-298		Zone-1	399	62.7
J-300		Zone-1	395	64.4
J-303		Zone-1	375	73.3
J-304		Zone-1	301	105.4
J-305		Zone-1	325	95.0
J-308		Zone-1	335	90.6
J-309		Zone-1	365	77.6
J-310		Zone-1	290	110.0
J-312		Zone-1	339	89.0
J-313		Zone-1	325	94.9
J-314		Zone-1	298	106.7
J-315		Zone-1	225	138.3
J-316		Zone-1	225	138.3
J-317		Zone-1	200	70.8
J-318		Zone-1	150	92.5
J-319		Zone-1	132	100.3
J-320		Zone-1	310	101.4
J-321		Zone-1	300	105.8
J-322		Zone-1	260	123.1
J-323		Zone-1	247	129.0
J-325		Zone-1	285	112.3
J-326		Zone-1	345	86.5
J-327		Zone-1	310	101.4
J-328		Zone-1	275	116.6
J-329		Zone-1	275	116.6
J-330		Zone-1	280	114.4
J-331		Zone-1	272	117.9
J-332		Zone-1	307	102.7
J-333		Zone-1	300	105.8
J-334		Zone-1	297	107.1
J-335		Zone-1	295	107.9
J-336		Zone-1	280	114.4
J-337		Zone-1	338	89.1
J-338		Zone-1	330	92.7
J-343		Zone-1	380	70.4
J-344		Zone-1	360	79.2
J-345		Zone-1	369	75.1
J-346		Zone-1	360	79.2
J-347		Zone-1	364	77.4
J-348		Zone-1	365	77.0
J-349		Zone-1	392	65.5
J-350		Zone-1	422	52.5
J-351		Zone-1	419	53.8

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-352		Zone-1	422	52.5
J-353		Zone-1	395	64.2
J-354		Zone-1	398	63.0
J-355		Zone-1	415	55.5
J-356		Zone-1	414	55.9
J-357		Zone-1	437	45.9
J-358		Zone-1	438	45.4
J-359		Zone-1	423	51.9
J-360		Zone-1	420	53.2
J-361		Zone-1	414	55.8
J-362		Zone-1	398	62.8
J-363		Zone-1	407	58.9
J-365		Zone-1	403	60.6
J-367		Zone-1	381	70.3
J-368		Zone-1	423	51.9
J-369		Zone-1	422	52.3
J-370		Zone-1	400	61.8
J-371		Zone-1	375	72.6
J-372		Zone-1	353	82.2
J-373		Zone-1	341	87.4
J-374		Zone-1	342	87.1
J-375		Zone-1	341	87.3
J-376		Zone-1	341	87.3
J-377		Zone-1	354	81.7
J-378		Zone-1	347	84.7
J-379		Zone-1	348	84.3
J-381		Zone-1	362	78.6
J-382		Zone-1	358	80.2
J-383		Zone-1	381	70.1
J-384		Zone-1	401	61.4
J-385		Zone-1	408	58.4
J-386		Zone-1	407	58.8
J-392		Zone-1	377	71.5
J-394		Zone-1	379	70.7
J-396		Zone-1	387	67.2
J-397		Zone-1	370	74.6
J-398		Zone-1	339	88.0
J-399		Zone-1	366	76.3
J-400		Zone-1	336	89.3
J-402		Zone-1	335	89.7
J-403		Zone-1	365	76.8
J-404		Zone-1	360	78.9
J-405		Zone-1	336	89.4
J-407		Zone-1	350	83.3
J-408		Zone-1	362	78.1
J-409		Zone-1	348	84.3
J-410		Zone-1	399	62.5
J-411		Zone-1	399	62.5
J-412		Zone-1	395	64.0
J-413		Zone-1	397	63.1
J-414		Zone-1	365	77.0

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-415		Zone-1	350	83.5
J-416		Zone-1	332	91.2
J-417		Zone-1	325	94.3
J-418		Zone-1	323	95.2
J-419		Zone-1	350	83.3
J-422		Zone-1	350	83.4
J-423		Zone-1	352	82.4
J-424		Zone-1	462	35.3
J-425		Zone-1	395	64.1
J-426		Zone-1	395	64.1
J-427		Zone-1	385	68.4
J-428		Zone-1	370	74.6
J-429		Zone-1	357	80.2
J-430		Zone-1	346	85.0
J-431		Zone-1	345	85.6
J-432		Zone-1	337	88.9
J-433		Zone-1	352	82.4
J-434		Zone-1	366	76.3
J-435		Zone-1	370	74.6
J-437		Zone-1	376	72.2
J-438		Zone-1	366	76.3
J-439		Zone-1	259	122.7
J-440		Zone-1	375	72.4
J-442		Zone-1	365	76.8
J-444		Zone-1	359	79.2
J-445		Zone-1	375	72.4
J-446		Zone-1	357	80.2
J-447		Zone-1	357	80.3
J-449		Zone-1	362	78.2
J-452		Zone-1	361	78.6
J-454		Zone-1	348	84.2
J-455		Zone-1	342	86.8
J-456		Zone-1	341	87.3
J-457		Zone-1	330	92.0
J-458		Zone-1	324	94.5
J-463		Zone-1	337	89.0
J-466		Zone-1	342	86.8
J-467		Zone-1	320	96.3
J-468		Zone-1	316	98.1
J-469		Zone-1	345	85.5
J-470		Zone-1	348	84.4
J-471		Zone-1	355	81.2
J-472		Zone-1	275	115.9
J-473		Zone-1	300	105.0
J-474		Zone-1	277	115.0
J-476		Zone-1	325	94.2
J-477		Zone-1	322	95.5
J-490		Zone-1	360	79.4
J-494		Zone-1	420	53.7
J-495		Zone-1	495	21.9
J-496		Zone-1	495	21.9

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-497		Zone-1	495	21.9
J-498		Zone-1	313	100.0
J-500		Zone-1	345	85.6
J-501		Zone-1	458	37.3
J-502		Zone-1	360	79.0
J-504		Zone-1	360	79.0
J-506		Zone-1	362	78.2
J-508		Zone-1	365	76.9
J-509		Zone-1	482	27.3
J-510		Zone-1	463	35.3
J-512		Zone-1	390	66.2
J-513		Zone-1	400	62.8
J-516		Zone-1	420	53.5
J-518		Zone-1	400	62.2
J-519		Zone-1	300	105.0
J-520		Zone-1	300	105.0
J-521		Zone-1	350	83.3
J-522		Zone-1	340	87.7
J-523		Zone-1	348	84.2
J-524		Zone-1	348	84.2
J-525		Zone-1	320	97.1
J-527		Zone-1	460	36.3
J-550		Zone-1	325	94.8
J-800		Zone-2	506	49.4
J-801		Zone-2	506	49.4
J-804		Zone-2	482	59.8
J-808		Zone-2	451	73.3
J-812		Zone-2	485	58.5
J-816		Zone-2	485	58.5
J-820		Zone-2	445	75.9
J-824		Zone-2	495	54.2
J-836		Zone-2	403	60.7
J-840		Zone-2	463	68.1
J-844		Zone-2	450	73.7
J-848		Zone-2	445	75.9
J-852		Zone-2	475	62.8
J-856		Zone-2	479	61.1
J-860		Zone-2	485	58.7
J-864		Zone-2	485	58.5
J-868		Zone-2	495	54.2
J-872		Zone-2	479	61.1
J-876		Zone-2	460	69.4
J-880		Zone-2	462	68.5
J-874		Zone-3	275	63.7
J-878		Zone-3	260	70.2
J-882		Zone-3	257	71.5
J-886		Zone-3	254	72.8
J-890		Zone-3	248	75.4
J-894		Zone-3	246	76.3
J-898		Zone-3	244	77.1
J-902		Zone-3	243	77.6

Junction Number	Junction Title	Zone Number	Junction Elevation (feet)	Junction Pressure (psi)
J-906		Zone-3	235	81.0
J-910		Zone-3	232	82.3
J-914		Zone-3	228	84.0
J-918		Zone-3	225	85.3
J-922		Zone-3	226	84.9
J-926		Zone-3	221	87.1
J-930		Zone-3	210	91.8
J-934		Zone-3	205	94.0
J-938		Zone-3	198	97.0
J-942		Zone-3	194	98.8
J-946		Zone-3	185	102.7
J-950		Zone-3	188	101.4
J-954		Zone-3	192	99.6
J-958		Zone-3	195	98.3
J-962		Zone-3	205	94.0
J-966		Zone-3	225	85.3
J-970		Zone-3	230	83.2
J-974		Zone-3	235	81.0
J-978		Zone-3	243	77.6
J-982		Zone-3	255	72.4
J-986		Zone-3	259	70.6
J-990		Zone-3	261	69.8
J-994		Zone-3	265	68.0
J-998		Zone-3	275	63.7
J-1002		Zone-3	280	61.5
J-1006		Zone-3	288	58.1
J-1010		Zone-3	294	55.5
J-1014		Zone-3	279	62.0
J-1018		Zone-1	380	70.2
J-1022		Zone-1	376	71.9
J-1026		Zone-1	375	72.4
J-1030		Zone-1	374	72.8
J-1034		Zone-1	365	76.7
J-1038		Zone-1	364	77.1
J-1042		Zone-1	360	78.8
J-1046		Zone-1	359	79.3
J-1050		Zone-1	355	81.0
J-1054		Zone-1	354	81.4
J-1058		Zone-1	354	81.4
J-1062		Zone-1	355	81.0
J-415		Zone-1	350	83.2

**MT. VIEW-EDGEWOOD WATER COMPANY
HYDRAULIC ANALYSIS
RUN 1**

SUMMARY OF OUTPUT DATA - PIPE SUMMARY

Run Description: Output Data
Drawing: Mt-View

Pipe Number	Node Nos.		Pipe Diameter (inches)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-2	J-125	J-50	179	8.0	0.0	0.0
P-3	J-50	J-52	292	8.0	0.0	0.0
P-5	J-414	J-54	139	8.0	0.0	0.1
P-6	J-416	J-56	547	4.0	0.2	0.4
P-7	J-56	J-417	225	4.0	0.1	0.3
P-9	J-412	J-54	154	8.0	0.0	0.1
P-10	J-417	J-58	1047	8.0	0.0	0.1
P-12	J-422	J-58	718	8.0	0.0	0.1
P-13	J-446	J-60	103	8.0	0.0	0.1
P-15	J-428	J-60	331	8.0	0.0	0.1
P-18	J-183	J-62	360	8.0	0.0	0.0
P-19	J-188	J-64	165	8.0	0.0	0.1
P-20	J-195	J-66	1036	8.0	0.1	0.3
P-21	J-66	J-196	789	8.0	0.0	0.2
P-22	J-64	J-66	267	8.0	0.0	0.1
P-23	J-201	J-204	1145	8.0	0.0	0.2
P-25	J-10	T3	53	12.0	0.0	0.0
P-28	J-68	J-438	122	12.0	0.0	0.0
P-35	J-519	J-70	658	8.0	0.0	0.0
P-36	J-70	J-477	313	8.0	0.0	0.0
P-37	J-440	J-72	545	8.0	0.0	0.1
P-38	J-72	J-74	247	8.0	0.0	0.1
P-39	J-74	J-442	552	8.0	0.0	0.1
P-40	J-72	J-445	192	8.0	0.0	0.0
P-41	J-106	J-104	493	6.0	0.0	0.1
P-42	J-119	J-76	541	4.0	0.0	0.1
P-43	J-76	J-120	308	4.0	0.0	0.0
P-44	J-52	J-76	658	8.0	0.0	0.0
P-45	J-118	J-78	714	8.0	0.0	0.0
P-46	J-78	J-142	594	8.0	0.0	0.0
P-47	J-156	J-80	244	8.0	0.0	0.0
P-48	J-80	J-157	263	8.0	0.0	0.0
P-49	J-80	J-82	630	8.0	0.0	0.0
P-50	J-267	J-84	393	6.0	0.0	0.1
P-51	J-84	J-268	1798	6.0	0.0	0.1
P-52	J-84	J-86	334	8.0	0.0	0.0
P-53	J-496	J-5	160	10.0	0.0	0.0
P-55	J-425	J-88	496	8.0	0.1	0.4
P-56	J-88	J-427	221	8.0	0.1	0.4
P-57	J-427	J-90	388	8.0	0.1	0.4
P-58	J-90	J-382	386	8.0	0.1	0.4
P-59	J-236	J-92	78	8.0	0.1	0.5
P-60	J-92	J-237	252	8.0	0.1	0.3
P-62	J-94	J-386	693	8.0	0.0	0.1
P-63	J-92	J-94	495	8.0	0.0	0.2
P-64	J-237	J-96	261	8.0	0.0	0.1
P-65	J-96	J-94	209	8.0	0.0	0.1
P-66	J-413	J-98	219	4.0	0.3	0.4
P-67	J-98	J-414	267	8.0	0.0	0.1
P-69	J-100	J-56	214	8.0	0.0	0.2

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-70	J-54	J-500	234	8	0.0	0.2
P-71	J-500	J-100	363	8	0.0	0.2
P-72	J-416	J-405	557	4	0.6	0.6
P-73	J-452	J-502	305	8	0.1	0.5
P-74	J-502	J-454	342	8	0.1	0.5
P-75	J-502	J-504	800	8	0.0	0.0
P-76	J-449	J-506	338	8	0.1	0.5
P-77	J-506	J-452	169	8	0.1	0.5
P-78	J-506	J-508	1070	8	0.0	0.0
P-92	J-155	J-501	100	8	0.0	0.0
P-93	J-362	J-836	888	6	0.2	0.4
P-101	J-101	J-102	108	8	0.0	0.1
P-102	J-101	J-103	844	8	0.0	0.1
P-103	J-103	J-104	314	6	0.0	0.1
P-104	J-102	J-105	625	8	0.0	0.1
P-105	J-102	J-106	316	6	0.0	0.1
P-106	J-105	J-107	242	8	0.0	0.0
P-107	J-107	J-108	253	8	0.0	0.0
P-108	J-107	J-109	229	4	0.0	0.1
P-109	J-108	J-110	198	4	0.0	0.1
P-110	J-108	J-112	1338	8	0.0	0.1
P-111	J-111	J-112	408	8	0.0	0.1
P-114	J-103	J-114	650	8	0.0	0.2
P-115	J-114	J-115	167	4	0.9	0.8
P-116	J-115	J-116	656	6	0.3	0.5
P-117	J-116	J-117	721	6	0.3	0.6
P-118	J-117	J-118	566	6	0.3	0.6
P-119	J-111	J-119	950	4	0.0	0.1
P-121	J-120	J-121	770	4	0.0	0.1
P-122	J-105	J-498	435	8	0.0	0.1
P-123	J-122	J-123	327	8	0.0	0.1
P-124	J-123	J-124	493	6	0.0	0.1
P-125	J-124	J-125	524	6	0.0	0.1
P-126	J-125	J-126	297	4	0.0	0.1
P-127	J-123	J-121	1227	8	0.0	0.0
P-128	J-128	J-121	249	6	0.0	0.0
P-132	J-130	J-131	209	4	0.1	0.3
P-134	J-132	J-131	748	4	0.1	0.2
P-135	J-132	J-122	1307	8	0.0	0.0
P-136	J-133	J-130	1155	6	0.0	0.1
P-147	J-142	J-143	52	8	0.0	0.0
P-148	J-143	J-144	258	4	0.0	0.1
P-149	J-143	J-145	845	4	0.0	0.2
P-150	J-145	J-146	1438	4	0.1	0.2
P-151	J-118	J-147	678	6	0.3	0.6
P-152	J-147	J-513	505	8	0.1	0.4
P-153	J-148	J-149	841	8	0.1	0.4
P-155	J-149	J-150	193	8	0.5	0.9
P-156	J-150	J-146	335	8	0.5	0.9
P-158	J-146	J-152	1069	8	0.4	0.8
P-159	J-149	J-510	975	12	0.4	1.1
P-160	J-153	J-154	225	12	0.4	1.0
P-161	J-154	J-155	740	6	0.3	0.5
P-162	J-155	J-156	504	6	0.2	0.5
P-164	J-156	J-158	1444	6	0.2	0.5
P-165	J-152	J-159	378	8	0.4	0.8
P-166	J-159	J-160	543	8	0.0	0.0
P-167	J-159	J-161	807	8	0.4	0.8
P-168	J-161	J-162	957	8	0.1	0.3

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-169	J-162	J-163	347	8.0	0.0	0.1
P-170	J-163	J-164	515	8.0	0.0	0.0
P-171	J-163	J-158	493	8.0	0.0	0.1
P-172	J-161	J-165	135	10.0	0.1	0.3
P-173	J-165	J-166	739	8.0	0.0	0.1
P-174	J-166	J-167	418	8.0	0.0	0.1
P-175	J-165	J-167	502	10.0	0.0	0.2
P-176	J-167	J-168	788	10.0	0.0	0.3
P-177	J-168	J-169	468	6.0	0.0	0.1
P-178	PRV-1	J-170	1054	6.0	0.0	0.1
P-178a	J-169	PRV-1	10	6.0	0.0	0.1
P-179	J-170	J-171	315	6.0	0.0	0.0
P-180	J-170	J-172	587	6.0	0.0	0.1
P-181	J-172	J-173	709	6.0	0.0	0.0
P-182	J-168	J-174	1020	10.0	0.0	0.2
P-183	J-174	J-175	326	6.0	0.0	0.2
P-184	J-175	J-176	211	6.0	0.0	0.2
P-185	J-176	J-177	713	4.0	0.1	0.3
P-186	J-175	J-178	321	4.0	0.0	0.1
P-187	J-177	J-179	733	4.0	0.0	0.0
P-188	J-179	J-180	343	6.0	0.0	0.2
P-189	J-180	J-181	336	6.0	0.1	0.2
P-190	J-181	J-162	1329	6.0	0.1	0.3
P-191	J-179	J-182	172	6.0	0.0	0.2
P-192	J-182	J-183	626	8.0	0.0	0.0
P-193	J-182	J-184	329	6.0	0.0	0.1
P-194	J-184	J-185	511	6.0	0.0	0.0
P-195	J-184	J-186	647	6.0	0.0	0.1
P-196	J-186	J-187	364	6.0	0.0	0.0
P-197	J-187	J-188	1139	8.0	0.0	0.1
P-198	J-177	J-518	294	4.0	0.1	0.2
P-199	J-189	J-190	725	8.0	0.0	0.0
P-200	J-190	J-191	575	6.0	0.0	0.0
P-201	J-191	J-192	847	6.0	0.0	0.0
P-202	J-192	J-193	668	8.0	0.0	0.1
P-203	J-193	J-194	689	6.0	0.0	0.1
P-204	J-194	J-187	447	6.0	0.0	0.1
P-205	J-158	J-195	647	8.0	0.1	0.3
P-206	PRV-4	J-128	15	6.0	0.0	0.0
P-207	J-196	J-193	1315	8.0	0.0	0.1
P-208	J-154	J-197	486	12.0	0.3	0.9
P-209	J-197	J-198	936	6.0	0.0	0.0
P-210	J-197	J-199	636	12.0	0.3	0.9
P-211	J-133	J-200	622	6.0	0.0	0.2
P-212	J-200	J-201	837	8.0	0.0	0.1
P-213	J-201	J-494	579	8.0	0.1	0.4
P-215	J-199	J-202	1343	12.0	0.2	0.7
P-216	J-202	J-203	361	12.0	0.2	0.6
P-217	J-203	J-527	898	6.0	0.1	0.4
P-218	J-202	J-205	850	6.0	0.2	0.4
P-219	J-205	J-206	975	6.0	0.0	0.1
P-220	J-206	J-207	679	6.0	0.0	0.0
P-221	J-206	J-196	844	6.0	0.0	0.0
P-222	J-205	J-208	1171	8.0	0.0	0.2
P-223	J-196	J-209	1355	8.0	0.1	0.4
P-224	J-208	J-210	727	6.0	0.1	0.3
P-225	J-209	J-211	976	8.0	0.0	0.2
P-226	J-211	J-210	650	8.0	0.0	0.2
P-227	J-211	J-212	897	4.0	0.0	0.1

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-226	J-211	J-210	650	8.0	0.2	0.7
P-227	J-211	J-212	897	4.0	0.0	0.0
P-228	J-203	J-213	990	12.0	0.0	0.1
P-229	J-213	J-210	1000	6.0	0.0	0.0
P-230	J-213	J-214	611	6.0	0.2	0.7
P-231	J-214	J-424	957	6.0	0.2	0.7
P-232	J-213	J-216	597	12.0	0.0	0.1
P-234	J-216	J-218	379	12.0	0.2	0.5
P-235	J-218	J-219	793	4.0	0.0	0.0
P-236	J-209	J-220	675	8.0	0.2	0.2
P-237	J-220	J-221	604	8.0	0.0	0.2
P-238	J-192	J-222	1336	2.0	0.0	0.1
P-239	J-222	J-221	693	8.0	0.0	0.1
P-242	J-221	J-225	415	8.0	0.2	0.5
P-243	J-225	J-226	813	8.0	0.2	0.5
P-244	J-220	J-227	1481	8.0	0.0	0.0
P-245	J-227	J-228	605	8.0	0.2	0.5
P-246	J-68	J-437	390	12.0	0.5	1.0
P-247	J-228	J-230	522	8.0	0.0	0.2
P-248	J-230	J-235	72	8.0	0.0	0.2
P-249	J-230	J-231	943	12.0	0.0	0.0
P-250	J-231	J-232	700	12.0	0.2	0.5
P-251	J-131	J-550	755	4.0	0.1	0.3
P-252	J-236	J-233	603	8.0	0.4	0.6
P-254	J-236	J-238	43	4.0	0.0	0.1
P-255	J-238	J-239	188	4.0	0.1	0.2
P-256	J-239	J-240	147	4.0	0.1	0.2
P-257	J-240	J-235	343	4.0	0.3	0.5
P-258	J-238	J-241	753	4.0	0.2	0.4
P-260	J-226	J-239	1361	4.0	0.0	0.1
P-262	J-115	J-111	834	4.0	0.0	0.1
P-264	J-176	J-245	449	4.0	0.0	0.2
P-265	J-180	J-246	599	4.0	0.0	0.1
P-266	J-174	J-247	199	10.0	0.1	0.3
P-267	J-247	J-248	1368	10.0	0.0	0.0
P-268	J-247	J-249	397	6.0	0.0	0.0
P-269	J-249	J-250	95	8.0	0.0	0.0
P-270	J-250	J-251	591	8.0	0.0	0.2
P-271	J-250	J-252	526	8.0	0.0	0.1
P-272	J-249	J-253	473	6.0	0.0	0.1
P-273	J-253	J-254	278	8.0	0.0	0.0
P-274	J-254	J-255	225	8.0	0.0	0.0
P-275	J-255	J-256	732	8.0	0.0	0.0
P-276	J-256	J-257	394	8.0	0.0	0.0
P-277	J-255	J-258	332	8.0	0.0	0.1
P-278	J-258	J-259	319	8.0	0.0	0.1
P-279	J-259	J-260	597	6.0	0.0	0.1
P-280	J-260	J-261	851	4.0	0.0	0.0
P-281	J-261	J-262	302	4.0	0.0	0.1
P-283	J-260	J-264	304	4.0	0.0	0.1
P-284	J-264	J-265	541	4.0	0.0	0.1
P-285	J-264	J-266	520	4.0	0.0	0.0
P-286	J-266	J-267	1214	6.0	0.0	0.1
P-288	J-259	J-269	903	8.0	0.0	0.1
P-289	J-269	J-270	638	8.0	0.0	0.0
P-290	J-270	J-271	607	8.0	0.0	0.0
P-291	J-271	J-272	579	6.0	1.6	1.4
P-292	J-266	J-272	950	6.0	1.6	1.4
P-293	J-271	J-273	1080	6.0	13.1	4.5

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-294	J-273	J-274	768	6	1.6	1.4
P-297	J-274	J-277	501	6	13.1	4.5
P-298	J-277	J-278	265	6	13.5	4.5
P-299	J-278	J-279	622	8	3.4	2.6
P-300	J-277	J-280	102	6	0.0	0.1
P-301	PRV-2	J-281	955	4	0.0	0.1
P-301a	J-280	PRV-2	10	4	0.0	0.1
P-303	J-271	J-283	1573	6	0.0	0.2
P-304	J-283	J-192	407	6	0.0	0.2
P-305	J-271	J-284	1281	10	0.1	0.4
P-306	J-284	J-285	1331	8	0.1	0.5
P-308	J-285	J-287	895	6	0.2	0.5
P-309	J-287	J-288	793	6	0.0	0.1
P-310	J-288	J-289	170	8	0.1	0.3
P-311	J-288	J-490	260	8	0.0	0.2
P-312	J-290	J-490	95	4	1.1	0.9
P-313	J-289	J-292	406	8	0.1	0.3
P-314	J-284	J-293	533	8	0.3	0.7
P-315	J-293	J-294	212	8	0.3	0.7
P-316	J-294	J-295	351	8	0.3	0.6
P-317	J-295	J-296	317	8	0.3	0.7
P-318	J-510	J-840	183	6	0.0	0.0
P-319	J-284	J-298	698	8	0.2	0.6
P-320	J-133	J-820	221	6	0.0	0.0
P-321	J-298	J-300	329	8	0.1	0.4
P-324	J-298	J-303	612	8	0.6	1.0
P-326	J-304	J-305	208	8	0.1	0.4
P-327	J-495	J-496	54	10	0.3	0.7
P-328	J-496	J-497	36	10	0.3	0.7
P-329	J-305	J-308	152	8	0.1	0.3
P-330	J-308	J-309	460	8	0.1	0.3
P-331	J-309	J-310	911	6	0.3	0.6
P-332	J-310	J-296	1088	6	0.3	0.5
P-333	J-300	J-296	448	6	0.4	0.7
P-335	J-285	J-222	658	8	0.0	0.2
P-336	J-304	J-312	1370	6	0.0	0.1
P-337	J-312	J-313	324	4	0.0	0.2
P-338	J-313	J-314	915	4	0.0	0.0
P-339	J-314	J-315	1001	4	0.0	0.0
P-340	J-315	J-313	326	4	0.0	0.1
P-341	J-312	J-316	1289	12	0.0	0.0
P-342	PRV-3	J-317	599	8	0.0	0.0
P-342a	J-316	PRV-3	100	8	0.0	0.0
P-343	J-317	J-318	690	8	0.0	0.0
P-344	J-318	J-319	540	8	0.0	0.0
P-345	J-312	J-320	336	6	0.1	0.3
P-346	J-320	J-321	785	4	0.0	0.1
P-347	J-321	J-322	712	4	0.0	0.1
P-348	J-320	J-322	665	6	0.0	0.2
P-349	J-322	J-323	314	6	0.0	0.2
P-350	J-801	J-824	127	10	0.0	0.0
P-351	J-323	J-325	825	6	0.0	0.2
P-352	J-312	J-326	347	4	0.2	0.4
P-353	J-326	J-327	613	6	0.0	0.1
P-354	J-327	J-328	479	6	0.0	0.1
P-355	J-328	J-329	130	6	0.0	0.0
P-356	J-329	J-330	221	6	0.0	0.0
P-357	J-328	J-331	310	6	0.0	0.0
P-358	J-329	J-332	1037	6	0.0	0.0

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-359	J-332	J-333	587	6.0	0.0	0.0
P-360	J-333	J-325	605	6.0	0.0	0.1
P-361	J-332	J-325	358	6.0	0.0	0.1
P-362	J-332	J-334	530	6.0	0.0	0.1
P-363	J-334	J-335	486	8.0	0.0	0.0
P-364	J-335	J-336	410	8.0	0.0	0.0
P-365	J-326	J-337	641	4.0	0.0	0.1
P-366	J-337	J-338	412	4.0	0.0	0.1
P-367	J-316	J-43	89	10.0	0.0	0.0
P-368	J-337	J-326	1256	4.0	0.0	0.1
P-369	J-800	J-801	73	6.0	0.0	0.0
P-370	J-43	WP-9	101	10.0	0.0	0.0
P-371	SO 11	PMP-11	190	8.0	0.0	0.0
P-372	J-291	J-343	1180	6.0	0.1	0.4
P-373	J-292	J-344	855	8.0	0.6	1.0
P-374	J-344	J-345	807	8.0	0.6	1.0
P-375	J-345	J-343	411	8.0	0.4	0.8
P-376	J-287	J-346	1256	6.0	0.3	0.6
P-377	J-346	J-347	427	6.0	0.3	0.5
P-378	J-347	J-348	133	8.0	0.3	0.6
P-379	J-348	J-343	902	8.0	0.3	0.6
P-380	J-218	J-349	688	12.0	0.2	0.6
P-381	J-349	J-350	557	6.0	0.0	0.1
P-382	J-350	J-351	592	8.0	0.0	0.0
P-383	J-351	J-352	542	4.0	0.0	0.1
P-384	J-349	J-353	427	12.0	0.2	0.6
P-385	J-353	J-354	557	12.0	0.2	0.6
P-386	J-354	J-232	1489	12.0	0.1	0.4
P-387	J-354	J-355	583	6.0	0.1	0.4
P-388	J-355	J-356	709	6.0	0.1	0.4
P-389	J-356	J-357	1009	6.0	0.0	0.1
P-390	J-357	J-358	82	6.0	0.0	0.1
P-391	J-358	J-359	884	6.0	0.0	0.1
P-392	J-360	J-359	314	6.0	0.0	0.1
P-393	J-360	J-361	891	4.0	0.0	0.1
P-394	J-361	J-362	1166	4.0	0.0	0.1
P-395	J-362	J-363	429	6.0	0.0	0.1
P-396	WP-7	J-289	280	8.0	0.0	0.0
P-397	J-363	J-365	502	6.0	0.0	0.0
P-398	J-274	J-44	737	8.0	1.6	1.7
P-399	J-303	J-45	880	12.0	0.1	0.4
P-400	J-362	J-367	660	6.0	0.1	0.4
P-401	J-356	J-360	360	6.0	0.1	0.2
P-402	J-359	J-368	320	6.0	0.0	0.2
P-403	J-368	J-369	758	4.0	0.2	0.4
P-404	J-369	J-370	502	4.0	0.2	0.3
P-405	J-370	J-371	520	8.0	0.0	0.1
P-406	J-371	J-372	743	8.0	0.0	0.1
P-407	J-372	J-373	612	8.0	0.0	0.0
P-408	J-367	J-374	707	6.0	0.2	0.5
P-409	J-374	J-375	1337	4.0	0.1	0.2
P-410	J-375	J-376	490	4.0	0.1	0.2
P-411	J-376	J-377	970	8.0	0.0	0.0
P-412	J-377	J-378	882	8.0	0.0	0.0
P-413	J-374	J-373	75	6.0	0.1	0.3
P-414	J-373	J-379	641	6.0	0.1	0.4
P-415	J-379	J-378	537	6.0	0.1	0.4
P-416	J-45	J-304	475	12.0	0.0	0.3
P-417	J-367	J-381	357	8.0	0.0	0.1

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-418	J-381	J-382	856	8.0	0.0	0.1
P-419	J-382	J-383	1433	8.0	0.1	0.3
P-420	J-383	J-384	653	8.0	0.0	0.2
P-421	J-233	J-385	1376	8.0	0.1	0.4
P-422	J-236	J-386	950	6.0	0.0	0.2
P-423	J-44	J-45	860	8.0	1.6	1.7
P-424	J-304	J-312	1400	12.0	0.0	0.1
P-425	J-804	J-808	400	4.0	0.0	0.1
P-426	J-439	J-10	1000	3.0	0.0	0.0
P-427	J-473	J-46	350	4.0	0.0	0.0
P-428	J-439	J-10	10000	0.3	0.0	0.0
P-429	J-345	J-392	402	10.0	0.6	1.1
P-431	J-392	J-394	400	10.0	0.0	0.1
P-433	J-394	J-396	611	10.0	0.0	0.1
P-434	J-396	J-397	879	10.0	0.0	0.1
P-435	J-397	J-398	426	10.0	0.0	0.1
P-436	J-398	J-399	742	4.0	0.1	0.2
P-437	J-399	J-400	529	4.0	0.1	0.3
P-439	J-399	J-402	734	8.0	0.0	0.0
P-440	J-400	J-403	475	8.0	0.0	0.0
P-441	J-403	J-404	471	8.0	0.0	0.1
P-442	J-400	J-405	361	4.0	0.1	0.2
P-444	J-405	J-407	245	6.0	0.0	0.2
P-445	J-407	J-408	666	8.0	0.0	0.1
P-446	J-398	J-409	461	10.0	0.0	0.1
P-447	J-386	J-410	398	6.0	0.1	0.4
P-448	J-410	J-411	332	6.0	0.1	0.2
P-449	J-411	J-385	322	6.0	0.1	0.3
P-450	J-410	J-412	327	4.0	0.3	0.4
P-451	J-410	J-413	183	6.0	0.1	0.4
P-453	J-413	J-415	327	6.0	0.0	0.2
P-454	J-415	J-416	1252	4.0	0.2	0.3
P-456	J-417	J-384	1176	4.0	0.1	0.3
P-457	J-385	J-384	640	8.0	0.0	0.2
P-458	J-383	J-418	671	8.0	0.1	0.4
P-459	J-418	J-419	1019	8.0	0.1	0.4
P-461	J-419	J-422	549	8.0	0.0	0.1
P-464	J-232	J-425	613	8.0	0.1	0.4
P-465	J-425	J-426	588	6.0	0.0	0.0
P-467	J-408	J-428	599	8.0	0.0	0.1
P-468	J-408	J-404	285	8.0	0.0	0.1
P-469	J-404	J-429	347	4.0	0.1	0.3
P-470	J-429	J-430	924	4.0	0.1	0.2
P-471	J-409	J-430	365	10.0	0.0	0.1
P-472	J-430	J-431	335	10.0	0.0	0.1
P-473	J-431	J-432	471	10.0	0.0	0.1
P-474	J-432	J-433	985	10.0	0.0	0.1
P-475	J-433	J-434	413	8.0	0.0	0.1
P-476	J-434	J-435	333	8.0	0.0	0.2
P-478	J-435	J-437	263	8.0	0.0	0.2
P-480	J-438	J-439	185	12.0	0.0	0.0
P-481	J-437	J-440	431	6.0	0.1	0.4
P-483	J-440	J-442	250	6.0	0.0	0.2
P-485	J-442	J-423	334	6.0	0.1	0.3
P-486	J-423	J-444	782	8.0	0.0	0.1
P-487	J-444	J-445	590	4.0	0.1	0.2
P-488	J-444	J-446	381	8.0	0.0	0.1
P-489	J-423	J-447	177	8.0	0.1	0.4
P-491	J-419	J-449	428	8.0	0.2	0.5

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-497	J-454	J-521	693	8.0	0.0	0.2
P-498	J-455	J-447	889	8.0	0.1	0.4
P-499	J-378	J-456	395	6.0	0.1	0.4
P-500	J-456	J-457	666	6.0	0.1	0.4
P-501	J-457	J-458	215	8.0	0.0	0.2
P-507	J-458	J-463	564	8.0	0.0	0.2
P-510	J-463	J-466	329	8.0	0.0	0.2
P-511	J-466	J-467	643	6.0	0.0	0.1
P-512	J-467	J-468	254	8.0	0.0	0.0
P-513	J-468	J-469	314	8.0	0.0	0.0
P-514	J-466	J-470	598	8.0	0.0	0.1
P-515	J-470	J-471	590	8.0	0.0	0.1
P-516	J-471	J-454	491	8.0	0.0	0.0
P-517	J-467	J-472	621	6.0	0.0	0.1
P-518	J-472	J-474	153	4.0	0.0	0.1
P-519	J-473	J-474	445	4.0	0.0	0.1
P-521	J-473	J-476	617	8.0	0.0	0.0
P-522	J-473	J-477	732	4.0	0.0	0.1
P-527a	WP-9	SO9	190	10.0	0.0	0.0
P-528	J-291	J-290	463	4.0	1.0	0.9
P-536	J-294	J-292	143	8.0	1.0	1.3
P-543	J-248	J-268	80	10.0	0.0	0.0
P-544	J-199	J-494	400	8.0	0.1	0.4
P-547	J-497	J-509	175	10.0	2.2	2.4
P-548	J-497	T2	70	10.0	1.1	1.6
P-549	J-495	T1	70	8.0	0.8	1.2
P-550	J-122	J-498	409	8.0	0.0	0.1
P-551	J-305	J-309	658	4.0	0.1	0.2
P-570	J-149	J-509	75	10.0	2.2	2.3
P-571	J-153	J-510	310	12.0	0.4	1.0
P-576	J-237	J-512	343	8.0	0.1	0.3
P-577	J-512	J-347	571	8.0	0.1	0.3
P-578	J-241	J-347	478	4.0	0.1	0.2
P-579	J-148	J-513	390	8.0	0.1	0.4
P-582	J-216	J-516	514	8.0	0.0	0.0
P-583	J-516	J-217	254	8.0	0.0	0.0
P-585	J-189	J-518	215	8.0	0.0	0.0
P-587	J-454	J-524	203	8.0	0.1	0.3
P-588	J-519	J-520	661	8.0	0.0	0.1
P-589	J-455	J-521	251	8.0	0.1	0.4
P-590	J-520	J-522	406	8.0	0.0	0.1
P-591	J-521	J-522	214	8.0	0.0	0.2
P-592	J-522	J-523	554	8.0	0.0	0.1
P-593	J-519	J-524	429	8.0	0.0	0.1
P-594	J-523	J-524	131	8.0	0.0	0.1
P-595	J-336	J-525	300	8.0	0.0	0.0
P-596	J-525	J-338	350	8.0	0.0	0.0
P-598	J-204	J-527	520	6.0	0.1	0.4
P-806	J-804	J-880	908	6.0	0.0	0.0
P-810	J-804	J-840	473	6.0	0.0	0.0
P-814	J-808	J-872	428	4.0	0.0	0.0
P-818	J-812	J-816	342	6.0	0.0	0.0
P-822	J-820	J-848	267	6.0	0.0	0.0
P-826	J-824	J-868	10	8.0	0.0	0.1
P-830	J-824	HT-1	5	12.0	0.0	0.1
P-834	J-824	J-804	327	6.0	0.0	0.1
P-838	J-836	J-354	506	6.0	0.2	0.4
P-842	J-844	J-128	78	6.0	0.0	0.0
P-846	J-844	PRV-4	15	6.0	0.0	0.0

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-850	J-844	J-848	1004	6.0	0.0	0.1
P-854	J-844	J-860	493	8.0	0.0	0.0
P-858	J-848	J-852	588	6.0	0.0	0.0
P-862	J-852	J-856	290	4.0	0.0	0.0
P-866	J-856	J-840	100	6.0	0.0	0.0
P-870	J-860	J-864	567	8.0	0.0	0.0
P-874	J-860	J-868	286	8.0	0.0	0.1
P-878	J-868	J-495	109	8.0	0.0	0.0
P-882	J-868	J-812	677	8.0	0.0	0.0
P-890	J-876	J-880	271	4.0	0.0	0.0
P-1000	J-235	J-233	83	8.0	0.1	0.5
P-1005	J-235	J-233	503	8.0	0.1	0.5
P-1010	J-323	J-870	518	8.0	0.0	0.4
P-1015	J-870	J-874	484	8.0	0.0	0.4
P-1020	J-874	J-878	169	8.0	0.0	0.4
P-1025	J-878	J-882	258	8.0	0.0	0.4
P-1030	J-882	J-886	54	8.0	0.0	0.4
P-1035	J-886	J-890	337	8.0	0.0	0.4
P-1040	J-890	J-894	370	8.0	0.0	0.4
P-1045	J-894	J-898	345	8.0	0.0	0.4
P-1050	J-898	J-902	58	8.0	0.0	0.4
P-1055	J-902	J-906	458	8.0	0.0	0.4
P-1060	J-906	J-910	204	8.0	0.0	0.4
P-1065	J-910	J-914	140	8.0	0.0	0.4
P-1070	J-914	J-918	30	8.0	0.0	0.4
P-1075	J-918	J-922	88	8.0	0.0	0.4
P-1080	J-922	J-926	100	8.0	0.0	0.4
P-1085	J-926	J-930	316	8.0	0.0	0.4
P-1090	J-930	J-934	330	8.0	0.0	0.4
P-1095	J-934	J-938	209	8.0	0.0	0.4
P-1100	J-938	J-942	180	8.0	0.0	0.4
P-1105	J-942	J-946	162	8.0	0.0	0.4
P-1110	J-946	J-950	850	8.0	0.0	0.4
P-1115	J-950	J-954	190	8.0	0.0	0.4
P-1120	J-954	J-958	80	8.0	0.0	0.4
P-1125	J-958	J-962	137	8.0	0.0	0.4
P-1130	J-962	J-966	172	8.0	0.0	0.4
P-1135	J-966	J-970	184	8.0	0.0	0.4
P-1140	J-970	J-974	303	8.0	0.0	0.4
P-1145	J-974	J-978	28	8.0	0.0	0.4
P-1150	J-978	J-982	109	8.0	0.0	0.4
P-1155	J-982	J-986	297	8.0	0.0	0.4
P-1160	J-986	J-990	46	8.0	0.0	0.4
P-1165	J-990	J-994	93	8.0	0.0	0.4
P-1170	J-994	J-998	530	8.0	0.0	0.4
P-1175	J-998	J-1002	463	8.0	0.0	0.4
P-1180	J-1002	J-1006	318	8.0	0.0	0.4
P-1185	J-1006	J-1010	149	8.0	0.0	0.4
P-1190	J-1010	J-1014	370	8.0	0.0	0.4
P-1195	J-1014	J-1018	191	8.0	0.0	0.4
P-1200	J-1018	J-1022	173	8.0	0.0	0.4
P-1205	J-1022	J-1026	1130	8.0	0.0	0.4
P-1210	J-1026	J-1030	1221	8.0	0.0	0.4
P-1215	J-1030	J-1034	731	8.0	0.0	0.4
P-1220	J-1034	J-1038	309	8.0	0.0	0.4
P-1225	J-1038	J-1042	1700	8.0	0.0	0.4
P-1230	J-1042	J-1046	335	8.0	0.0	0.4
P-1235	J-1046	J-1050	924	8.0	0.0	0.4

Pipe Number	Node Nos.		Pipe Length (feet)	Pipe Diameter (inches)	Headloss (feet)	Flow Velocity (fps)
	From	To				
P-1240	J-1050	J-1054	1750	8.0	0.0	0.4
P-1245	J-1054	J-1058	1262	8.0	0.0	0.4
P-1250	J-1058	J-1062	696	8.0	0.0	0.4
P-N1i	J-10	PMP-N1	69	6.0	0.0	0.4
P-N1o	PMP-N1	J-438	122	6.0	0.0	0.4
P-N2i	J-10	PMP-N2	120	8.0	0.0	0.4
P-N2o	PMP-N2	J-68	100	8.0	0.0	0.4
P-N3i	J-10	PMP-N3	100	8.0	0.0	0.4
P-N3o	PMP-N3	J-68	100	8.0	0.0	0.4
P-S1i	J-5	PMP-S1	50	2.0	0.0	0.4
P-S1o	PMP-S1	J-800	50	2.0	0.0	0.4
P-S2i	J-5	PMP-S2	50	4.0	0.0	0.4
P-S2o	PMP-S2	J-800	50	4.0	0.0	0.4
P-S3i	J-5	PMP-S3	50	4.0	0.0	0.4
P-S3o	PMP-S3	J-800	50	4.0	0.0	0.4
P-S4i	J-5	PMP-S4	50	4.0	0.0	0.4
P-S4o	PMP-S4	J-800	48	4.0	0.0	0.4
WP-1Ri	SO10	WP-1R	100	6.0	0.0	0.4
WP-1Ro	WP-1R	J-268	30	10.0	0.0	0.4
WP-3i	SO4	WP-3	136	6.0	0.0	0.4
WP-3o	J-290	WP-3	136	6.0	0.0	0.4
WP-5i	SO5	WP-5	250	6.0	0.0	0.4
WP-5o	WP-5	J-279	121	8.0	0.0	0.4
WP-6i	SO6	WP-6	200	4.0	0.0	0.4
WP-6o	WP-6	J-346	100	4.0	0.0	0.4
WP-7i	SO7	WP-7	193	8.0	0.0	0.4
WP-8i	SO8	WP-8	101	8.0	0.0	0.4
WP-8o	WP-8	J-248	30	8.0	0.0	0.4
WP-11	PMP-11	J-43	150	8.0	0.0	0.4
WP11	WP-11	J43	150	8.0	0.0	0.4

PEAK HOUR DEMAND PEAKING FACTOR

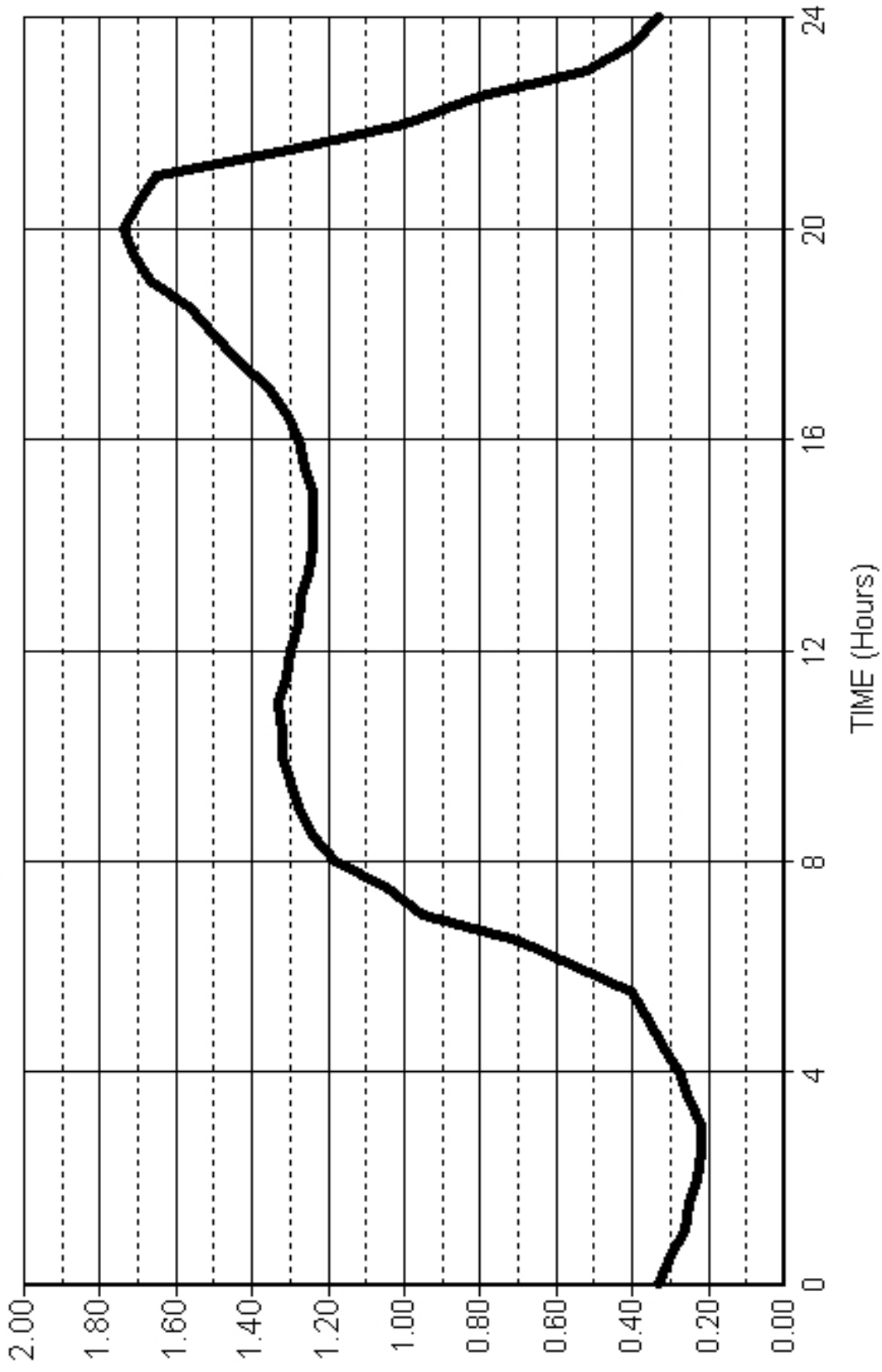


FIGURE 1

SOUTH RESERVOIRS WATER LEVELS (T1 & T2)

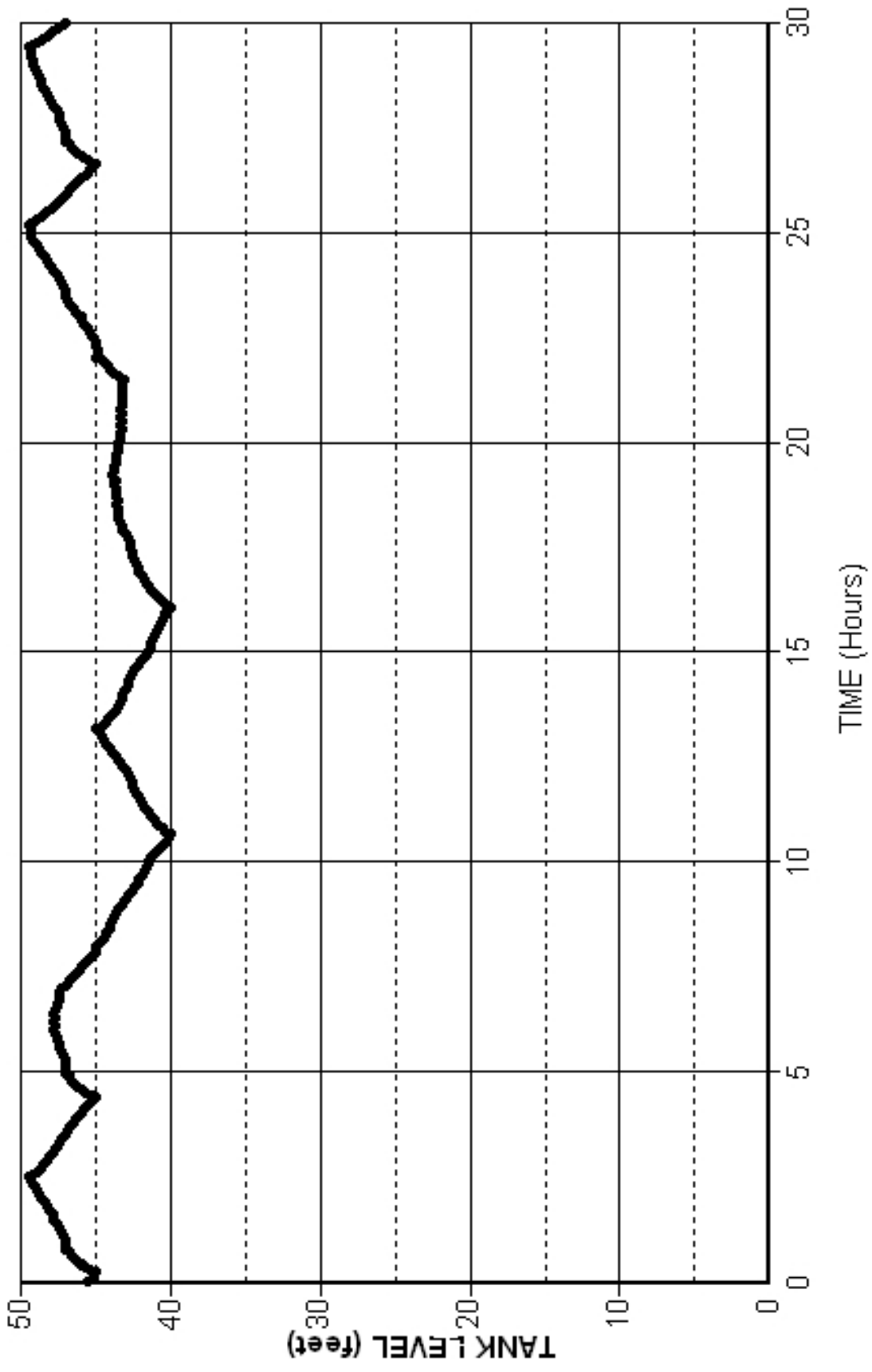


FIGURE 2
RUN 1 - MAXIMUM DAY DEMAND
STORAGE TANK WATER LEVELS
EXTENDED PERIOD SIMULATION
4300 ERU'S

NORTH RESERVOIR WATER LEVELS (T3)

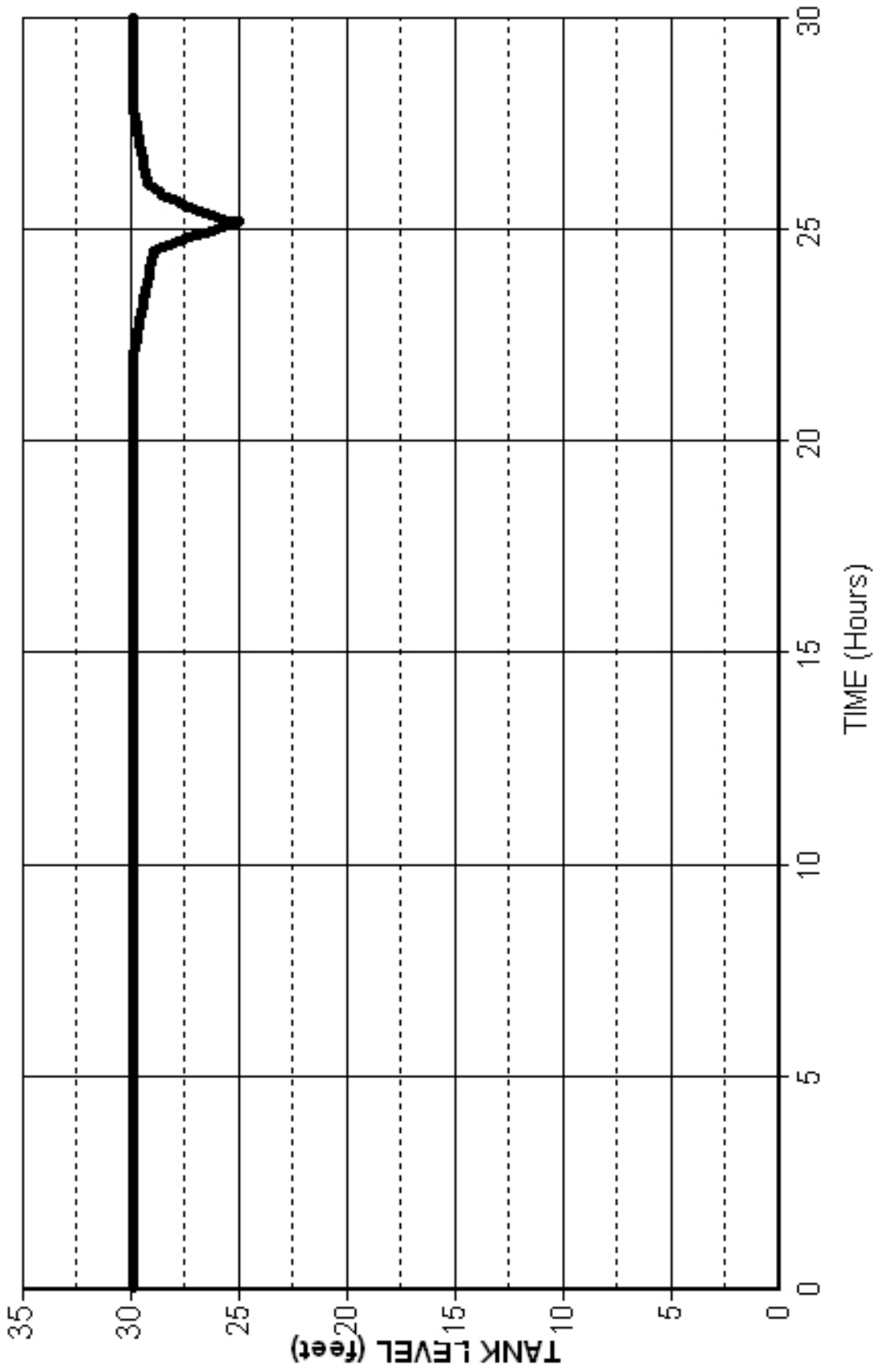


FIGURE 3
RUN 1 - MAXIMUM DAY DEMAND
STORAGE TANK WATER LEVELS
EXTENDED PERIOD SIMULATION
4300 ERU'S

JUNCTION NODE PRESSURE (J153)

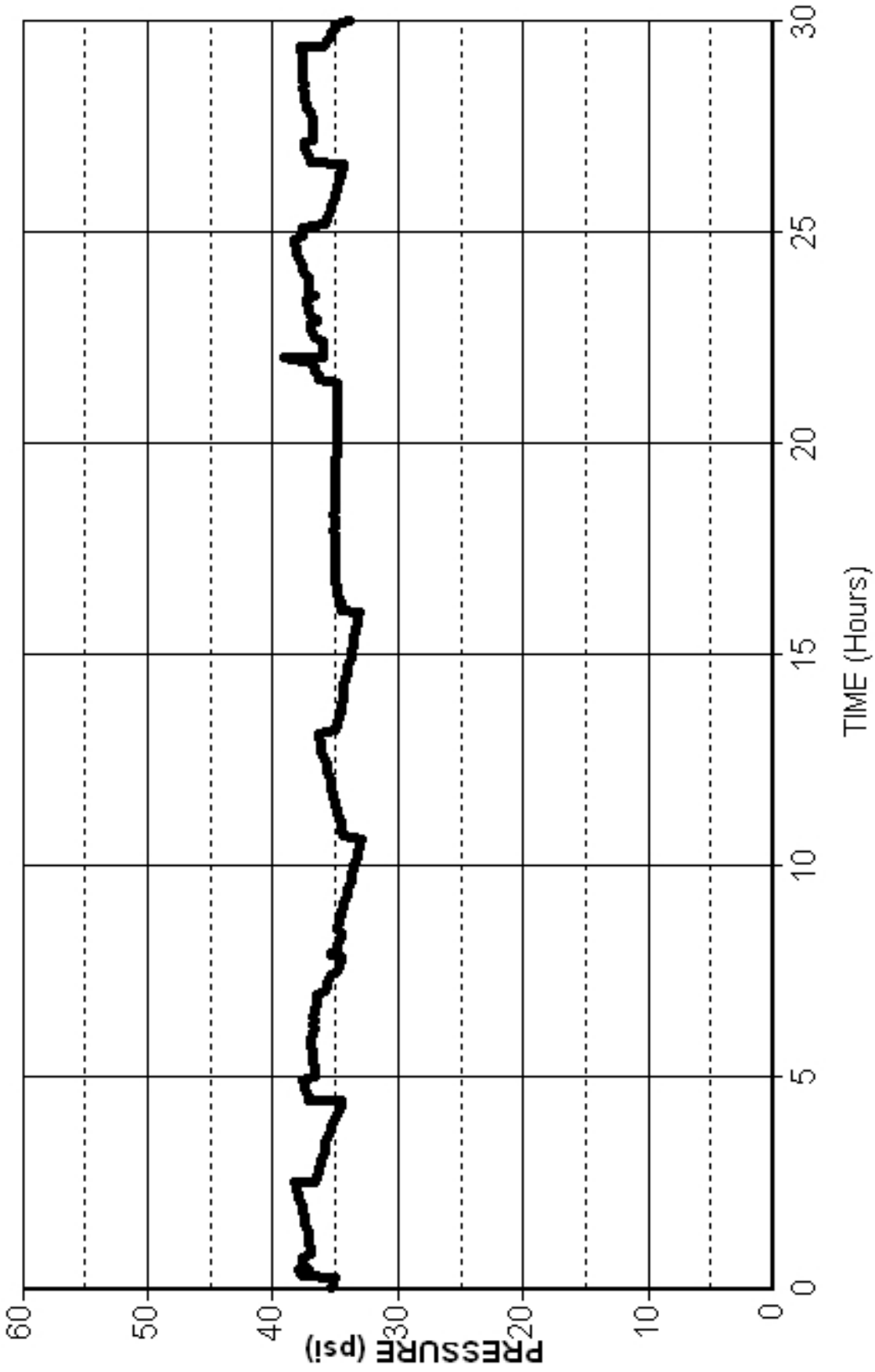


FIGURE 4
RUN 2 - MAXIMUM DAY DEMAND
EXTENDED PERIOD SIMULATION
4300 ERU'S

JUNCTION NODE PRESSURE (J868)

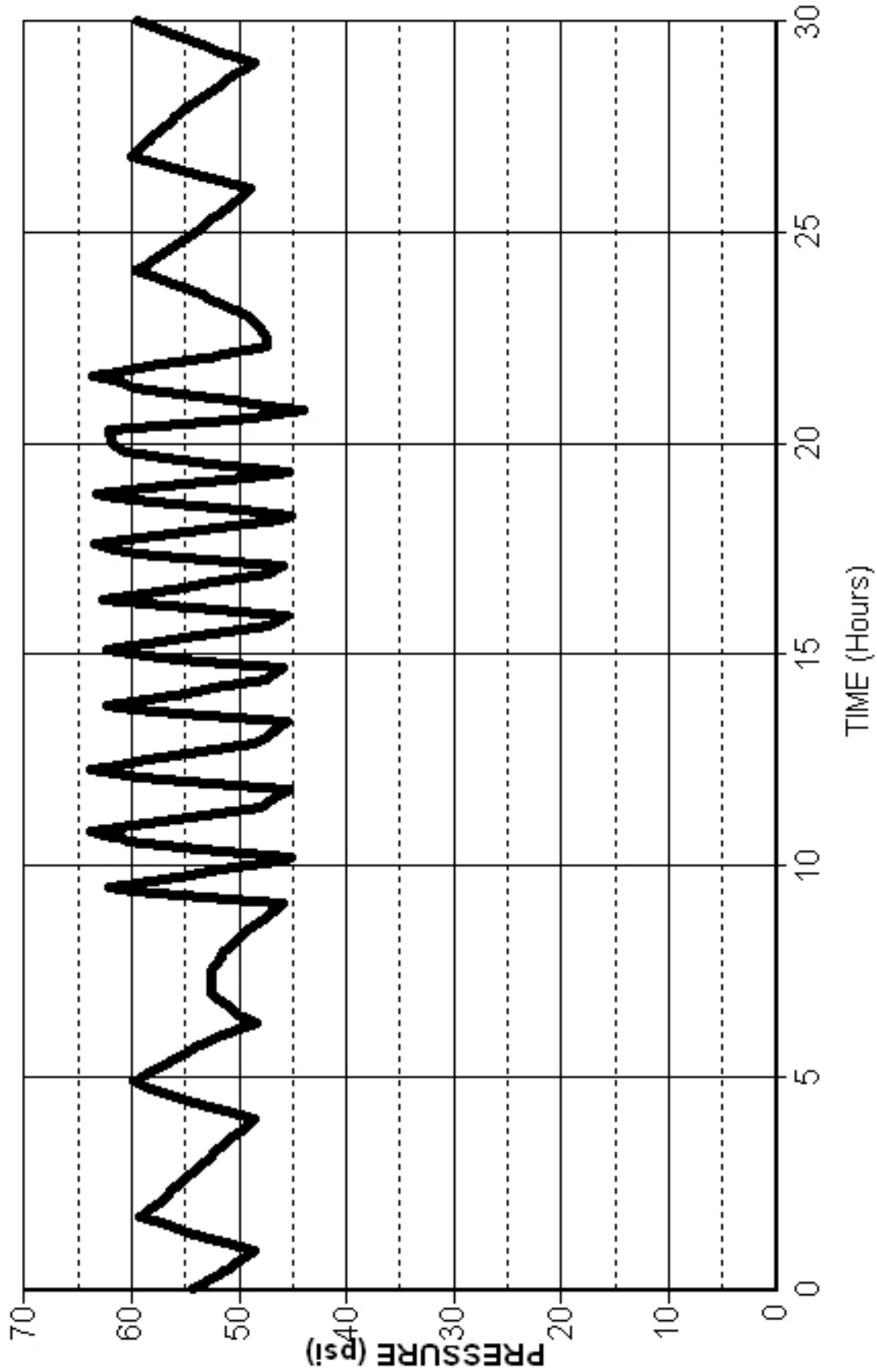


FIGURE 5
RUN 2 - MAXIMUM DAY DEMAND
EXTENDED PERIOD SIMULATION
4300 ERU'S

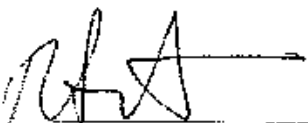
Appendix I

Wellhead Protection Plan

MOUNTAIN VIEW-EDGEWOOD
WATER COMPANY
WELLHEAD PROTECTION PLAN

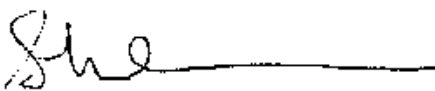
MARCH 2005

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Mountain View-Edgewood Water Company
WELLHEAD PROTECTION PLAN

March 2005

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EXECUTIVE SUMMARY

Wellhead Protection Area Definition

A wellhead protection area (WHPA) is a representation of where the water produced by a given well comes from. It is based upon capture zones, which describe the area of an aquifer that can contribute water to the well in a given period of time. Capture zones are typically defined for time-of-travel periods of six-months, and one, five, and ten years. Mountain View-Edgewood Water Company (Company) wellhead protection areas were defined using a six-layer numerical computer model that was developed for Lakehaven Utility District to describe the Federal Way Upland. A numerical model is a highly detailed, three-dimensional representation of water flow through the identified hydrogeologic layers.

The capture-zone modeling results indicate a generally southwesterly trending groundwater flow within the Company's primary aquifer system, the Vashon advance aquifer (Qva; Layer 2 of the Lakehaven model). The proximity of the Company's wells resulted in the definition of three capture zones: one large WHPA for Wells 3, 5, 6, 7 and 9, a WHPA for the combined area of Wells 1R and 8, and a small WHPA for Well 2. Well 5, which is completed in intermediate aquifer system, is combined into the larger WHPA of Wells 3, 6, 7 and 9, simply due the overlap of the capture zones. Well 2 is also completed in the intermediate system, but stands alone due to its northerly location.

Existing and Potential Contamination Hazard Identification

The inventory of potential contamination sources within the WHPA was performed according to the Washington State Department of Health guidance document: *Inventory of Potential Contaminant Sources in Washington's Wellhead Protection Areas* (1993). Track Info Services, LLC, an environmental database research company, reviewed 18 federal and state environmental databases for any known or potential contaminant sites within the study area. Also, an evaluation of various land-use categories and activities was performed and the results included in the list of potential hazards. In order to verify the current land-use activities and potential contamination sites identified by Track Info Services, a field survey was performed on September 23, 2004.

From this process, 24 sites or categories of land-use activities were identified as known or potential hazards to the Company's wells. These were prioritized and ranked such that the Wellhead Protection Plan implementation process can address each site or land use in a systematic manner. Each site was ranked according to four factors: proximity of potential hazard to the WHPA, type of contamination, straight-line distance from the wells to the potential hazard, and type of contaminated media.

Protection Strategies and Implementation Tasks

The completion of wellhead protection planning provides no safeguards unless effective management strategies are implemented to prevent potential contamination of groundwater sources. With the hazards identified, the Wellhead Protection Plan provides for six strategies and 26 specific tasks for the Company to undertake to complete the process. Also included is a detailed review of the State spill response plan and a contingency plan to address the possible loss of one or more water sources.

INTRODUCTION

Wellhead Protection Program

In response to the 1986 Amendments to Section 1428 of the Federal Safe Drinking Water Act, the Washington Administrative Code (WAC) was modified in July 1994 to include mandatory wellhead protection measures¹ for Group A public water systems (WAC 246-290). The overall goal of the state wellhead protection program is to prevent the contamination of ground waters used by Group A public water systems. This is to be accomplished by the definition of management zones around public wells, detection of any existing ground water contamination sources, and through the management of potential sources of groundwater contamination prior to their entry into the drinking water system. The state requires that a Wellhead Protection Plan (WHPP) shall, at a minimum, include the following aspects:

- A completed susceptibility assessment
- A delineated wellhead protection area
- An inventory of potential contamination threats
- Distribution of findings to required entities
- Contingency plans for alternative sources of drinking water
- Appropriate spill/incident response measures

Under the WAC, local public water systems have primary responsibility for developing and implementing local wellhead protection programs. Due to the limited jurisdictional and regulatory authority afforded most purveyors; it is essential that they work with other local, state, and federal agencies possessing the appropriate authority. The State Department of Health (Health) oversees the wellhead protection program.

Scope of the Mountain View-Edgewood Water Company Wellhead Protection Plan

This wellhead protection plan focuses on three primary areas:

- A hydrologic evaluation of the aquifers used by the Company and the delineation of the zone of contribution and wellhead protection areas (WHPAs) for each Company production well,
- An inventory of potentially hazardous materials inside the delineated WHPAs, and
- The development of management, spill response, and contingency plans.

Mountain View-Edgewood Water Company Overview

The Company's service area is located north of the Puyallup River valley and south of the King County - Pierce County boundary (Figure 1). The majority of the service area exists on the upland area formed between Puget Sound, the Puyallup River and the White River (in the southeastern corner of an area known as the Federal Way Upland) and generally serves the incorporated area of the City of Edgewood. Edgewood is bordered by the Cities of Milton, Puyallup and Sumner and currently has a population of 10,830 residents.

¹ The legislative authority to require wellhead protection planning can be found in the Revised Code of Washington (RCW) Chapters 43.20.050, 70.119A.060, and 70.119A.080.

The Company relies on groundwater sources to serve its needs. The Company oversees the entire water distribution system and serves water to an area slightly smaller than the incorporated area of the City of Edgewood. Approximately 7,300 customers are served through 2,812 connections. Six production wells are currently used to supply the Company's needs. An additional well exists as a possible supply source. At the present time and into the near future, the use of ground water constitutes the Company's primary and most economical guaranteed source of supply.

The Company has maintained an excellent water quality record in the 80 years it has been in service. They have never found need to treat the water they provide to their customers. This is partially due to the encapsulated recharge zone of the Qva aquifer it depends upon, the nature of the geologic materials protecting the aquifer and the lack of industrial and commercial development within the zone of contribution of these aquifers. Risks associated with commercial activity and land use are concentrated along the Meridian Avenue transportation corridor. The rest of the City of Edgewood is largely low-density residential properties. All but one of the Company's existing wells produce water from a shallow aquifer protected from contamination by a pervasive glacial till cap.

HYDROGEOLOGIC ASSESSMENT

Introduction

The basis for the wellhead protection process is the delineation of production well capture zones. A capture zone represents the total area of contribution from which a well derives ground water in a given period of time. The process of delineating wellhead capture zones quantifies aquifer characteristics in order to determine the area of an aquifer (and all overlying material) that can contribute water to the well. Capture zones are typically defined for time-of-travel periods of six-months, and one, five, and ten years. There are several methods to define the capture zones, as listed in the Wellhead Protection Program Guidance Document (Health, 1995). For this plan, a numerical model of the Federal Way Upland developed for Lakehaven Utility District (Robinson & Noble, 1992) was used to define the capture zones. A numerical model is a highly detailed, three-dimensional representation of water flow through the identified hydrogeologic layers.

The basis for the proper modeling of a complex system such as flow through aquifer systems is the creation of a conceptual model. This process attempts to identify all of the physical processes that must be represented in the numerical model and describe their relationship(s) to one another. Once a conceptual model is completed, the hydrogeologic layers identified can be translated into model layers for the numerical model. The model is then constructed and tested against known data sets to calibrate the model's performance. Once calibrated, the model can then be used to predict flow paths and timing, and thus, provides an accurate method for defining capture zones.

Database

The primary source of information for this WHPP was a series of projects and reports generated for Lakehaven Utility District by Robinson, Noble & Saltbush. Two major projects evolved from Robinson, Noble & Saltbush's studies that are pertinent to the Edgewood area, a regional aquifer description (Robinson & Noble, 1987) and a numerical computer model of the upland (Robinson & Noble, 1992). The data set generated by these three reports is extensive, and has formed the foundation for all our subsequent work on the upland area.

The raw data forming the database are mainly water well construction reports (logs) for wells drilled throughout the upland and surrounding valley areas. This includes construction reports for all of the Company's wells. These logs were cataloged and analyzed to create the conceptual hydrogeologic model of the upland (discussed below). The hydrogeologic characteristics for each data point were then summarized during the computer modeling process in order to identify the model layers.

For this project, Robinson, Noble & Saltbush performed a thorough search of both the Company and Robinson, Noble & Saltbush's files to collect all pertinent information on the Company's wells. Additionally, logs were collected for new wells drilled in the surrounding area after 1992. This data was added to the Lakehaven model data set and used to revise the model where needed.

Study Area Physiography

The study area is composed of the southernmost tip of the Federal Way Upland. The upland area is essentially a glacial-drift plain typical of the Puget Sound Lowlands, characterized by steep gullies and high bluffs along the margins and relatively low-relief on the upland itself. The study area is sharply defined by the bluffs dividing the Puyallup River to the south and the Auburn-Sumner valley to the east. The maximum elevation in Edgewood is 500 feet in the southeast. Numerous lakes and swamps are found in these interiors reflecting the poorly drained nature of the surface sediments (Luzier, 1969 and Walters and Kimmel, 1968).

The Edgewood area, like most of the Puget Lowland, is characterized as a mid-latitude, humid-marine climate (Jones, 1999). The near proximity of Puget Sound moderates temperatures in the area providing relatively cool summers and warm winters. Precipitation falls almost exclusively as rain. Onshore storms from the Pacific occur most frequently in the winter months. The wet season is typically October through March and average annual precipitation averages 39 to 40 inches per year (Western Regional Climate Center, 1995).

Conceptual Model

In order to represent all of the variable conditions of the study area properly in a numerical model, a conceptual model is first constructed. The conceptual model of the Federal Way Upland defines the hydrogeologic units that make up the upland (three aquifers and three non-aquifer/confining units) and surrounding valley areas (two valley aquifers; Robinson & Noble, 1987). This model was modified for the Lakehaven Utility District's modeling effort (Robinson & Noble, 1992) in order to add additional detail and to re-define the hydrogeologic layers as model layers (see below).

Hydrogeologic Overview

The southeast portion of the Federal Way Upland consists of a thick sequence of unconsolidated sediments. The Company's source wells are all associated with aquifers beneath the upland, though two the wells are located along the upland's southern edge. The core of the upland is comprised of pre-Vashon glacial and interglacial sediments which are found at relatively high elevations at the eastern margin of the upland. These sediments dip to the west.

The Vashon glaciation deposited a broad sheet of outwash material as the glacier advanced towards the Edgewood area (Vashon advance outwash or Qva). This thick sequence of sand and gravel serves as a primary aquifer of the upland region and is a substantial source for the major purveyors of the area (including Lakehaven Utility District, and the City of Milton). Particular to the Federal Way upland is a channel feature within the Qva materials extending from the Redondo area north of Federal Way to the Milton area where the Hylebos drainage joins the Redondo-Milton Channel (RMC) Aquifer (Robinson & Noble, 1987). Remnants of RMC deposits are found along the southern tip of the upland where erosion or re-working by the Puyallup River has truncated the deposits and left them separated from the RMC deposits further to the north (along the Hylebos drainage near Interstate 5). Figure 2 shows the surface geology of the subject area, Figure 3 depicts the well and cross-section locations and Figure 4 provides a schematic cross-sectional interpretation of subsurface relationships beneath the area.

The upland area that underlies Edgewood and Milton is the recharge area for the Qva aquifer system tapped by most of the Company's wells. A semi-permeable till surface caps most of the recharge area on the upland. Much of the surface water tends to flow to local depressions on the

till surface rather than runoff to drainages that would escort the water off of the upland. The limited areas where recessional outwash sediments are present represent portions of the upland that are more suited to recharge than most other places (Figure 2). This is because a trough in the till that was subsequently filled with the recessional sediments allows water to move vertically into the more permeable recessional material more rapidly and provides a better opportunity for that water to infiltrate through the underlying till over time. Between the leakage from local depressions and the contributions from the recessional sediments leaking ground water through the till, a substantial amount of recharge reaches the underlying Qva sediments.

The basal material of the Qva is dominated by silt and clay deposits which transition into proglacial lake clays. These lower permeability materials serve as the base of the Qva aquifer system. Once water enters the Qva material, it moves vertically to the water table. The preponderance of the water then moves southwestward toward the Puyallup Valley where it discharges as springs or through subsurface discharge to the shallow sediments of the Puyallup River alluvium. The Qva aquifer can be envisioned as a westward-thickening wedge of sediments laid over an erosional ramp carved into the older, generally lower-permeability pre-Vashon sediments. To some degree, the physical presence of the ramp dictates the flow of ground water through the upland materials. The water table in the advance sediments reflects the variability of permeability between the fine-sand, coarse-sand and, sand and gravel facies of these sediments.

The Company's major production wells are completed in the gravel or sand and gravel deposits within the Qva aquifer. The western margin of the Milton/Edgewood upland area is dominated by very coarse material ranging from sand and gravel to relatively clean (sand-free) gravel and are remnant deposits of the RMC depositional event discussed above. Wells 1R, 8, and 9 are all completed in the RMC deposits. Though the wells at the Lake Chalet site (Wells 3 and 7) are completed in similar gravel material, this location appears to be more laterally limited as would be expected from a pocket of gravel surrounded by sand. The water level responses observed in this aquifer through many years of production appear to support that interpretation. The remainder of the Company's wells are completed in materials that represent lower-transmissivity facies of the advance material or deeper but related unconsolidated aquifers of pre-Vashon age. These wells have the lowest production potentials of the Company's wells.

Most water discharge from the upland aquifer is into the shallow alluvium of the Puyallup Valley along the western edge of the upland. Though some ground water would be expected to drain eastward off of the back-side of the "ramp" formed by the older lower permeability material, this has not been well documented nor is it expected to be a significant component of the water resource development in the Edgewood/Milton area.

A deep well drilled along the eastern edge of the upland in 1981 by Dr. Tim Jolley encountered an aquifer substantially below the elevation of the valley floor comprised of older sediments that pre-date the Vashon glaciation. This well did not identify sufficient production potential above the elevation of the valley which, therefore, required the deeper exploration. This supports an interpretation that the low-permeability transition clays and silts serve as a local base for the advance aquifer and tend to force water to flow to the west or southwest to discharge from the upland.

Physical Definition of the Hydrogeologic System

Based on our modeling effort for Lakehaven Utility District, the hydrogeology of the study area is described by model layers; each model layer representing a different hydrostratigraphic unit

(Robinson & Noble, 1992). The nomenclature used is shown on Table 1. In total, there are six major hydrostratigraphic units delineated on the Federal Way upland down to 700 feet below sea level. Beneath these are hundreds of feet of additional unconsolidated sediments that have not been differentiated.

Table 1: Layer/Unit Nomenclature

Model Layer	Hydrostratigraphic Unit	Notes
1	Vashon Till	Also contains, at some locations, a thin recessional outwash at the top of the unit.
2	Vashon Advance Aquifer System	Also known as the Qva unit; locally equivalent to the RMC. This unit is the primary source of ground water for Mountain View Edgewood.
3	Lower Confining Layer	Confining layer beneath the Qva and RMC
4	Intermediate Aquifer System	Well 5 and the Jolley Well withdraw water from this aquifer.
5	Deep Confining Layer	Confining layer beneath the MLA, above the deep aquifer.
6	Deep Aquifer System	Contains the Federal Way Deep Aquifer.

Each of the model layers is briefly described below based on the definitions made during the modeling process. Additional detail for each layer and their respective interactions can be found in the model report.

Layer 1, Vashon Till

Layer 1 includes the Vashon till and the Vashon recessional deposits that overlie the till in some areas. The unit is generally less than 150 feet thick and covers most of the upland. The till is a compact mixture of sand and gravel in a silt and clay matrix. The till has a low permeability, which retards groundwater flow through it. The recessional deposits are typically coarse sand and gravel which supply perched water in some areas.

Layer 2, Vashon Advance Aquifer System

Across most of the Edgewood upland, Vashon advance outwash deposits exist beneath the Vashon till. These deposits form the Vashon advance aquifer system, with distinct aquifers formed in the higher permeability portions of the unit. The most prominent aquifer is the Redondo-Milton Channel (RMC), which extends southward into the Mountain-View Edgewood area. With the exception of Well 5, Layer 2 is the primary source for all of the Company's wells.

The outwash deposits which make up the unit are varied, ranging from silty sand to very clean, sandy gravel. The unit's thickness varies from absent to more than 200 feet at the thickest portion of the RMC.

Layer 3, Lower Confining Unit

Layer 3 is the lower confining unit for the Qva and RMC. It represents the aquitard between the Vashon advance aquifer system and the intermediate aquifer system. It is formed by a thick sequence of silt and clay-rich sediments, including the Lawton Clay member of the Vashon Drift and, in places, a till. At many locations, the unit is predominantly silt and clay; at other locations, it is primarily a mixture of sand and gravel with silt and clay included as a matrix. The unit varies widely in thickness. Where the RMC reaches its maximum thickness, Layer 3 is very thin to absent. Elsewhere, the layer can exceed 300 feet thick.

Layer 4, Intermediate Aquifer System

The intermediate aquifer system is a mixture of isolated aquifers and lower-permeability sediments laterally deposited (as opposed to deposition above or below the layer) between the aquifers. The most significant aquifer in the unit is the Mirror Lake Aquifer located in Federal Way. The aquifer system also includes smaller, isolated aquifers on both sides of the upland, collectively referred to as the Eastern Upland Aquifers and the North Shore Aquifers. The unit has upper and lower aquifer zones within it. This zonation is particularly evident in the Eastern Upland Aquifers.

Layer 5, Deep Confining Unit

Layer 5, (the deep confining unit) is the aquitard between the intermediate aquifer system and the deep aquifer system. It is the most substantial confining layer on the upland. It is found throughout the upland and is 200 to 400 feet thick at most locations. It consists largely of low permeability materials ranging from clay to silty, fine sand.

Layer 6, Deep Aquifer Unit

Little is known about the deep aquifer system, which contains the Federal Way Deep Aquifer (FWDA), but it is probable that the system is hydraulically connected to the deep aquifers in the Puyallup Valley. The unit includes the fine-to-medium sand deposits of the Federal Way Deep Aquifer, as well as lower permeability sediments found elsewhere on the upland where the FWDA is missing. The unit is probably also in direct continuity with Puget Sound.

WHPA DELINEATION

The capture-zone modeling results indicate a generally southwesterly trending groundwater flow regime within the Company's primary aquifer system (the Qva/RMC, or Layer 2 of the model). The proximity of the Company's wells to one another and their common completion within the Qva (except for Well 5) results in wellhead protection areas (WHPAs) that overlap and orient into two distinct zones: one composed of the Wells 1R and 8 WHPA and the other composed of the remaining wells. The WHPAs and particle track travel times calculated for the Company's wells are shown on Figure 5. A comparison of the modeled production values for each well with the Company's pumping records and water rights data is located on Table 2.

Table 2: Comparison of the WHPP model production parameters with pumping records and water rights data

Well	Water Rights			Production (in gallons)				Modeled	
	Qi (gpm)	Qa (ac-ft)	WR type	Historical Use*	%	2003	%	Production**	%
1R	500	672	P	1,197,391,000	22.8	182,577,000	53.0	310,540,550	55.4
2	150	240	S	-	-	-	-	-	-
3	350	560	S	102,734,100	2.0	-	-	-	-
5	390	570	S	358,072,600	6.8	12,609,000	3.7	20,380,985	3.6
6	250	375	S	614,919,490	11.7	16,030,500	4.7	8,338,059	1.5
7	1,200	550/1226	P/S	871,033,800	16.6	5,414,000	1.6	22,526,538	4.0
8	750	554	P	984,562,200	18.8	27,828,000	8.1	46,662,028	8.3
9	1,000	800	S	1,121,298,000	21.4	99,984,000	29.0	151,783,890	27.1
Total	4,590	1,776		5,250,011,190		344,442,500		560,232,050	

*represents the sum of pumping records compiled over the past seventeen water years

**modeled production rates were determined by distributing the Company's primary water rights between the wells in proportion to the 2003 production rates

Wells 1R and 8

The Company's southernmost wells, Wells 1R and 8, located at the foot of the Federal Way Upland near Meridian Avenue, form their own distinct WHPA. The wells are located within 40 feet of each other and are completed less than 100 feet below ground surface (bgs) in materials connected to the RMC. Historical pumping records show Wells 1R and 8 have pumped 41.6% of the Company's total production in the past seventeen years. The 2003 pumping records indicate these wells account for 61.1% of the Company's current production.

These wells are particularly vulnerable to traffic accidents on the Meridian transportation corridor. Trucks carrying hazardous materials down Meridian Avenue could potentially have an accident on the steep hill. The shoulders on either side of the road may channel spilled materials toward the wells located at the foot of the hill.

Well 2

Well 2, the Company's northernmost well, is located on the northeast side of the intersection of Meridian and 8th Street East near the King County boundary. Well 2 is currently a backup well that is available for emergency use. The well is completed at 397 feet below ground surface, and is

well protected from surface contamination due to the presence of two confining layers (non-aquifer material). No historical pumping records are available for this well.

Wells 3 and 7

Also known as the Lake Chalet Wellfield, Wells 3 and 7 are located on the east side of Meridian Avenue in the center of Edgewood. The two wells are similarly constructed and are completed in the Qva aquifer at approximately 240 feet bgs. Well 3 is used only in the event of an emergency and has not been utilized in the previous two years on record. Historical pumping records indicate Well 7 supplied 16.6% of the company's total production in the past seventeen years.

These wells appear to be well protected from contaminant sources despite their proximity to the Meridian commercial corridor.

Well 5

Well 5, also known as the Barth Well, is located on the southwest boundary of the district and is the only major production well that is completed in the intermediate aquifer system. The 10-year capture zone for this well lies within the capture zones delineated for Wells 3, 6, 7 and 9. Over the last eighteen years, Well 5 has produced about 6.6% of the Company's annual production. In the last few years the annual production has diminished to between 1.0% and 2.7% of the Company's total production or 8,894,000 gallons in the most recent water year.

This well is better protected from possible contaminant sources than the Company's other sources due to its completion in the intermediate aquifer.

Well 6

The Chalet North Well, or Well 6, is located east of Meridian Avenue near the center of the contribution zone of the wellhead protection areas. Well 6 is completed 385 feet bgs in the Qva aquifer. This well has produced 11.7% of the Company's annual production in the past seventeen years. Recent production rates have decreased to around 4.0% of the company's production.

The only known contaminated location determined by this study, the Shell station at 2325 Meridian East, is located 1,200 feet west of Well 6. Three vapor extraction wells are currently remediating the site.

Well 9

Well 9, or the Fred Meyer Well, is the Company's westernmost point of withdrawal and the most prolific well the Company operates. The transmissivity of the near well aquifer has been calculated at 2,500,000 gpd/ft. This well is completed at 248 feet bgs in the RMC aquifer.

The high volume of water withdrawn from the well and its location next to the Josties Pit, adjacent and to the east of the well elevates the potential for contamination from activities at the pit site. The Josties Pit is the second highest ranked, non-land-use potential contaminant source determined from this study.

CONTAMINANT SOURCE INVENTORY

The inventory of potential contamination sources within the WHPA was performed according to the guidance document entitled *Inventory of Potential Contaminant Sources in Washington's Wellhead Protection Areas* (Heath, 1993). This section summarizes the basic steps for conducting an inventory, including:

- Review and identification of potential and known contaminant sources
- Data management
- Prioritizing risks to the WHPA

A summary of common sources of groundwater contamination is presented in Table 3. These sources were considered when performing the contamination inventory for the Company's WHPA.

Potential Contamination Ranking

The potential hazardous sites and land uses discovered through the zoning map examination, database search, and field survey were ranked as to the highest potential for contamination of the well sources. This process will better allow the Company to concentrate its wellhead protection efforts on issues of the highest concern.

Methodology for Establishing Risk Priority

The methodology for prioritizing risks in the Company's WHPA was partially based on the EPA Guidance document entitled *Managing Ground Water Contamination Sources in Wellhead Protection Areas: a Priority Setting Approach* (1991). The ranking effort was also based on the level of confidence in data and information that is currently available for known and potential contamination sites.

Each site was ranked according to four factors called decision levels. The decision levels are listed below in Table 4 (Level I represents the highest hazard risk criteria, Level IV is the lowest).

Contaminant Source Inventory Methodology

Track Info Services, LLC, a database research company, reviewed the federal and state environmental databases listed in Table 3 for any known or potential contaminant sites within the boundaries of the WHPA. The Environmental FirstSearch Report is presented in the Appendix. To evaluate the potential impact of land use on water quality, a copy of the Department of Planning and Land Services' (DPLS) Generalized Proposed Land Use for Pierce County (effective March 30, 1998) was obtained. To verify both the potential contamination sites identified by Track Info Services and land use, a windshield survey was performed on September 23, 2004.

Table 3 - Potential Contaminant Sources Listed by Type

Category I

Sources Designed to Discharge Substances

- Subsurface Percolation (e.g. septic tanks and cess-pools)
- Injection Wells
 - Hazardous waste
 - Non-hazardous waste (e.g. brine disposal and drainage)
 - Non-waste (e.g. enhanced recovery, artificial recharge solution mining, and *in situ* mining)
- Land Application
 - Wastewater (e.g. spray irrigation)
 - Wastewater byproducts (e.g. sludge)
 - Hazardous waster
 - Non-hazardous waste

Category II

Sources Designed to Store, Treat, and/or Dispose of Substances; Discharge through Unplanned Release

- Landfills
 - Industrial hazardous waste
 - Industrial non-hazardous waste
 - Municipal sanitary
- Open Dumps, Including Illegal Dumping (Waste)
- Residential (or Local) Disposal (Waste)
- Surface Impoundments
 - Hazardous waste
 - Non-hazardous waste
- Waste Tailings
- Waste Piles
 - Hazardous waste
 - Non-hazardous waste
- Materials Stockpiles (Non-waste)
- Graveyards
- Animal Burial
- Above-ground Storage Tanks
 - Hazardous waste
 - Non-hazardous waste
 - Non-waste
- Underground Storage Tanks
 - Hazardous waste
 - Non-hazardous waste
 - Non-waste
- Containers
 - Hazardous waste
 - Non-hazardous waste
 - Non-waste
- Open Burning Sites
- Detonation Sites
- Radioactive Disposal Sites

Category III

Sources Designed to Retain Substances during Transport or Transmission

- Pipelines
 - Hazardous waste
 - Non-hazardous waste
 - Non-waste
- Materials Transport and Transfer Operations
 - Hazardous waste
 - Non-hazardous waste
 - Non-waste

Category IV

Sources Discharging Substances as a Consequence of Other Planned Activities

- Irrigation Practices (e.g. return flow)
- Pesticide Applications
- Fertilizer Applications
- Animal Feeding Operations
- De-Icing Salt Applications
- Urban Runoff
- Percolation of Atmospheric Pollutants
- Mining and Mine Drainage
 - Surface mine-related
 - Underground mine-related

Category V

Sources Providing Conduit or Inducing Discharge through Altered Flow Patterns

- Production Wells
 - Oil (and gas) wells
 - Geothermal and heat recovery wells
 - Water supply wells
- Other Wells (non-waste)
 - Monitoring wells
 - Exploration wells
- Construction Excavation

Category VI

Naturally Occurring Sources whose Discharge is Created and/or Exacerbated by Human Activity

- Ground Water - Surface Water Interactions
- Natural Leaching
- Saltwater Intrusion/Brackish Water
 - Upconing (or intrusion of other poor-quality natural water)

Table 4. Federal and State Environmental Databases searched by EDR

Database Acronym	Database Name	Database Source
NPL	National Priority List	U. S. Environmental Protection Agency (EPA)
RCRIS-TSD	Resource Conservation and Recovery Information System- Treatment, Storage, or Disposal Sites	EPA
CSCSL	Confirmed and Suspected Contaminated Sites List	Washington State Department of Ecology (Ecology)
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information	EPA
CERC-NFRAP	Comprehensive Environmental Response, Compensation, and Liability Information	EPA
RCRA-COR	RCRIS Corrective Action Report	EPA
SWF/LF	Solid Waste Facility Database	Ecology
LUST	Leaking Underground Storage Tank Database	Ecology
UST	Underground Storage Tank	Ecology
RCRIS-GEN	Resource Conservation and Recovery Information System- Small and Large Quantity Generators	EPA
HMIRS	Hazardous Material Information Reporting System	EPA
PADS	PCB Activity Database System	EPA
ERNS	Emergency Response Notification System	EPA
FINDS	Facility Index System	EPA/ National Technical Information Service (NTIS)
TRIS	Toxic Chemical Release Inventory System	EPA
NCDB	National Compliance Database	FTTS
NPDES	National Pollution Discharge Elimination System	EPA
NRDB	National Radon Database	EPA

Table 5: Overall Risk Prioritization

Decision Level	Available Data and Information
I	Proximity of potential hazard to the WHPA
II	Type of contamination
III	Straight-line distance from the wells to the potential hazard
IV	Type of contaminated media

Each known and potential hazard was first scored and then ranked using decision level one. Sites with equal level one rankings were then further scored and ranked using decision level two. If sites were still equal in priority, they were further sub-prioritized under decision level three, etc. Once sites were differentiated in priority, no further ranking was necessary. The criteria for scoring sites within each level are discussed below.

Decision Level I–Proximity to WHPA

For the first decision level, the sub-prioritization of contaminated sites was based on their location in the WHP zones; the shorter the travel time, the higher the priority. Scores for each site and hazard category are summarized on Table 5.

Table 6: Decision Level I: Proximity to Source

Sub-Priority Score	Proximity to Source
1	1-year time-of-travel from the source, Zone 1
2	5-year time-of-travel from the source, Zone 2
3	10-year time-of-travel from the source, Zone 3
4	Outside of Zone 3; upgradient from wells
5	Outside of Zone 3; downgradient from wells

Decision Level II–Type of Contamination

For the second decision level, the sites were ranked as either known contamination or potential contamination sites. Known contamination sites were defined as those with known releases of contaminants according to the environmental database survey results. Potential contamination sites are sites or land areas that are used in ways that could pose a risk to the ground water. This category's scoring is summarized on Table 6.

Table 7: Decision Level II: Type of Contamination

Sub-Priority Score	Known or Suspected Contamination	Type of Contaminated Site	Assumption
1	Known	Confirmed and Suspected Contaminated Sites (CSCSL) and Comprehensive Environmental Response, Compensation, and Liability Information (CERCLIS)	As a worst case scenario, contamination is assumed to be comprised of the most toxic chemical identified for the site, based on information contained in the Ecology and EPA databases.
2	Known	Leaking Underground Storage Tanks (LUST)	All contamination sites assumed to contain petroleum products.
3	Known	Washington Independent Cleanup Report (WA ICR)	Since not confirmed as totally cleaned, assumes cleanup not 100% effective.
4	Potential	Septic Systems	Nitrates and bacterial contamination are assumed to be health risks, along with potential chemical hazards, but it is not known what the likelihood is for sites to contaminate the wells.
5	Potential	Resource Conservation and Recovery Act Sites (RCRA)	It is assumed that hazardous chemicals may be stored on site, but contamination has not necessarily occurred. FINDS sites are included with this category.
6	Potential	Underground Storage Tanks (UST)	It is assumed that petroleum products are stored in underground storage tanks on site, but contamination is not eminent.
7	Potential	Accidental Spills	This category includes highways and railroad tracks that pass through the WHPA. The risk is based on the possibility of hazardous material spill (e.g., gasoline).
8	Potential	Pesticide Application	Pesticide use appears to be concentrated along transportation corridors and power lines.
9	Potential	Storm Water	This category includes the potential release of lead, petroleum products, and/or solvents.
10	Potential	Fertilized Sites	This category is predominantly represented by fertilized lawns and hobby farms.

Decision Level III–Straight–line Distance from Wells

For potentially hazardous sites with similar characteristics for prioritization decision levels one and two, the straight-line distance from the site to the closest Company well was used to further rank the sites. Those sites closest to the wells were given a higher priority.

Decision Level IV–Type of Contaminated Media

This decision level was not used, since all nine sites with known contamination could be ranked by the third decision level.

Land Use

Land zoning within the study area includes, (in order of prevalence): residential single family districts, business districts, residential multi-family districts, light manufacturing districts, a planned development district (including the gravel pit near I-5), open space districts, a residential moderate-density district, community facilities districts, and a mixed-use town center district (Figure 11). Since most of these zones share many features and types of uses, many of the potential contaminants will likewise be similar. The large majority will fall into one of the two categories listed below.

Residential Land Use

The Company is predominantly made up of residential districts. Potential contaminant issues related to residential land use include: nitrate loading from the disposal of household chemicals through septic systems, small livestock operations, fertilizer and pesticide applications, and petroleum hydrocarbons. The principal concern for residential areas is the impact of nitrogen. Properly maintained and used septic systems convert nitrogen to nitrates, which are then transported in the environment in the groundwater system. Livestock operations and other hobby farming can also add nitrates to the ground water. Hobby farms, lawns and flowerbeds represent potential hazards because they typically receive application of fertilizers, herbicides, and pesticides. The presence of multiple sources of pesticides can result in the potential for additive loading to the groundwater system resulting in a possible progressive decline in water quality.

Commercial and Light Manufacturing Land Use

The majority of the commercial and light manufacturing land use is found along the Meridian Avenue corridor. The most likely potential contaminants related to either commercial or industrial uses include, but are not limited to, petroleum hydrocarbons and metals. These potential contaminants are generally due to the historical or current presence of heating oil and fuel in underground storage tanks (USTs). Additional potential contaminants could also be associated with auto repair facilities, radiator repair, and metal fabricators.

Petroleum hydrocarbons can become a serious concern for wellhead protection in commercial and residential areas. There are numerous potential sources for petroleum hydrocarbons within the WHPA. These include gasoline stations, commercial operations that fuel and maintain equipment and vehicles, home/commercial heating oil tanks and bulk transport of such fuels. Petroleum hydrocarbons are typically stored in USTs in volumes ranging from 100 gallons (residential use) to up to 1,000 gallons per tank (gasoline service stations). Large spills involving petroleum hydrocarbons are a greater risk than small spills (leaks, etc.).

Groundwater contamination from metals is a potential threat at commercial and industrial sites which handle or use materials with significant metallic constituents (paints, waste oil, etc.) and historical pesticide use areas (historical pesticides were typically metal-based compounds).

Of additional concern are those portions of the WHPA that are not sewered; and thus use septic systems for waste disposal. Septic systems are considered to be a potential hazard because they deliver bacteria, nitrate-rich water, and other contaminants (if disposed of improperly into a drain

or toilet) directly into the subsurface. This is a particular concern for unsewered industrial and commercial areas where there is the potential for the use (and improper disposal) of numerous hazardous chemicals.

Undeveloped Areas

Though all the land within the WHPA is zoned, not all is developed. Undeveloped areas in the WHPA, including the designated open space districts and the planned development district are expected to have the lowest potential for contamination due to the nature and low impact of activities occurring there.

The one exception to this low-potential condition is the Josties Sand & Gravel Pit west of and adjacent to Well 9 (Site 5 in the contaminant inventory, see below). Openwork mining of sand and gravel deposits allows a direct route for potential contaminants to enter the groundwater system. While it is assumed that the pit operated under best-management practices and conformed to all appropriate state regulations, the lack of vegetated cover and continued disturbance of the pit when in operation makes it a potential site for contamination. Furthermore, recently fill has been imported to the site. The source of this fill has not been determined.

Identified Contaminant Sources

In all of the federal and state databases reviewed by Track Info Services, 16 sites within the WHPP study area were identified as either potential hazards (fifteen) or sites where actual contamination has occurred (one). Of these sites, seven were located during the windshield survey or during discussions with the Company. The windshield survey yielded nine additional potential hazard sites due to land use factors (Table A1). The 25 hazard sites² are mapped on Figure 5. The one reported contaminated site, the Shell service station at 2325 Meridian, is listed on the LUST database for a petroleum release and is ranked tenth on the hazard list.

Potential Groundwater Concerns

For wellhead protection planning, it is important to understand the potential sources and types of contamination to the WHPAs. However, potential pathways for contaminant migration are also important to understand because these contaminant pathways can increase the vulnerability of an aquifer by decreasing travel time from a source to a wellhead. The following section will briefly summarize the main mechanisms for transport of contaminants to the subsurface.

Discharge onto the Ground Surface: Direct discharge to the ground surface occurs when products or waste materials are spilled or placed onto the ground. With the help of rainfall infiltration, the materials percolate into the subsurface and, if a sufficient volume of material is released, they eventually reach the water table and migrate downgradient in the aquifer.

Direct Discharge to the Subsurface: Discharge to the subsurface occurs from septic systems and dry wells. Discharge into the subsurface is a more direct mechanism for transport because contaminants are discharged closer to the water table and because subsurface discharge bypasses the upper layers of soil which have the ability to absorb and disperse many types of contaminants.

² There are 3 actual and 25 potential hazards listed on Table A1.

Abandoned Wells: Old, improperly constructed, or improperly abandoned wells³ can act as direct conduits for contaminant transport to the aquifer. In such wells, transport can occur between the ground surface and aquifer zones because of lack of seals or inadequately constructed seals.

Stormwater Runoff: Rainfall onto the ground either induces infiltration into the subsurface or runoff. The quality of the water which infiltrates or runs off is dependent on the type of land use and the potential presence of contaminants which may be located on the ground surface. Stormwater infiltration issues are similar to those of discharge to the ground surface. Stormwater runoff is considered differently because it runs over the surface of the ground, picking up and dissolving potential contaminants, and may eventually discharge these contaminants to ground water via infiltration from ditches or ponds designed to percolate water.

The potential concerns due to water infiltration or runoff are diverse and reflect the land use activities in the area of interest. Improved roadways, parking areas, and residential developments can contribute heavy metals and petroleum hydrocarbons, which originate primarily from automobiles. Industrial and commercial areas can discharge the same constituents as automobiles in addition to a variety of organic pollutants commonly used business practices (e.g., solvents, paints, and dry cleaning solutions).

³ Washington State has standards for construction and abandonment of wells, WAC 173-160.

MANAGEMENT STRATEGIES AND IMPLEMENTATION TASKS

Introduction

The completion of wellhead protection planning provides no safeguards unless effective management strategies are implemented to prevent potential contamination of groundwater sources. The Company does not own or control all of the land within its WHPA. Maximum effectiveness can be achieved in implementing the WHPP through a cooperative effort between the Company, neighboring purveyors, and the state and local agencies that regulate potentially harmful activities within the WHPA. A key component to its management of the area will be the notification of the existence and extent of the management area to the proper agencies in Pierce County, King County, neighboring communities, and to local residents.

Wellhead Protection Management Strategies

The following sections detail proposed strategies developed to protect the integrity of the Company's water sources.

Long-Term Management and Cooperation

This WHP program is designed to be a continuing management activity to meet the Company's future planning needs or to adapt to changes in the physical conditions of the aquifer system. As such, the management strategies and practices outlined within this study provide a general direction, but will periodically need to be refined to fit specific conditions. Additional adaptations may be needed to address future activities and regulations, or changes in current regulations that may affect the WHPA.

Establish a WHP Committee:

The Company currently maintains an Emergency Management Committee to address community response to various potential emergency situations. The wellhead protection issues and spill response planning could naturally fall to this committee. It is recommended that this committee be expanded to address the following wellhead protection planning efforts:

1. Evaluate the implementation status of the WHP tasks
2. Review federal, state, and local programs regarding the WHP
3. Review changes in surface activities within the WHPA
4. Meet WHP regulations and requirements

The group should strive to focus on promoting existing or future water quality and quantity resource protection programs for the WHPA.

Land Management Activities:

The Company should encourage owners or agencies responsible for large land parcels and developments to use and monitor best management practices (BMP) for control, reduction, and restriction of potential contaminants into the WHPA.

WHP Land Use Strategies

The Company has no authority to directly control land use for those areas of the WHPA that are outside the Company limits. Therefore, the Company must develop a cooperative relationship with those state and local agencies that administer land use programs. At the present time, the best strategy for the Company is to seek special designations for the WHPA from pertinent agencies. The Company should evaluate and seek the different designations that may be most beneficial.

Possible Special Protection Area Designations:

- A *Special Protection Area* designation under the state ground water quality standards (WAC-173-200),
- A *Special Use Area* by the Department of Agriculture,
- An *Environmentally Sensitive Area* under various County-level programs.

WHP Regulatory Strategies

This WHPP is designed to use the existing statutory rules and regulations to protect ground water quality. The Company, in coordination with state and local agencies having statutory authority in the area, would monitor regulated activities within the WHPA. The following regulatory strategies are recommended.

Well Drilling Inspections inside the WHPA: The Company should encourage the continued delegation of well construction inspection authority be transferred from Washington State Department of Ecology to the Tacoma Pierce County Health Department (TPCHD). Regardless of the responsible agency, the Company should encourage more frequent well construction inspection than currently occurs.

Washington State Environmental Policy Act (SEPA)/Hydrogeologic Evaluations: The Company should request Pierce County Planning and Land Services (PALS) to require hydrogeologic evaluations that specifically address impacts to groundwater quality and quantity parameters for any development within the WHPA which requires SEPA action or seeks Determination of Non-Significance (DNS) designation. Additionally, the Company should enter into a Memorandum of Understanding (MOU) with PALS and the City of Edgewood seeking comment on the effects such development will have on the groundwater system. Designation of the area as a Special Protection Area will be the first step toward gaining such an agreement.

Septic Tanks: The Company should request Pierce County to require that as-builts, drafted by a septic design professional, of new septic systems be recorded with property deeds. Additionally, the Company should support the implementation of laws and regulations requiring proper inspection and maintenance of septic systems.

Planning Strategies

A substantial degree of future protection for the WHPA will be achieved through present-day planning and coordination. In order to accomplish the required level of future protection, the following strategies are recommended.

Sewers: The Company, in coordination with the managers of local sewer systems, should develop emergency plans to be implemented in the advent of sewage leaks or spills. The Company could encourage the appropriate county to require all industrial and commercial facilities within the WHPA to connect to sanitary sewers, if such services are reasonably available.

Storm Water Management: The Company should conduct or promote research on the impact of storm water discharge on water quantity and quality. Additionally, the Company, in coordination with the responsible agencies, should evaluate the adequacy of storm water facilities, including proper routing, retention, and detention. A balance must be found that allows optimum recharge of storm water to groundwater systems while adequately protecting the water quality of the aquifers.

Emergency Response for Transportation Corridors: The Company should notify the appropriate emergency response organizations of the location of the WHPA and establish formal communication protocols with the first-response emergency units.

Petroleum Pipelines: The Company should document the location and use of petroleum pipelines and to establish emergency response plans for pipeline failure. These efforts should be coordinated with the pipeline companies and the federal, state, and county agencies responsible for emergency, petroleum-product spill response.

Hazardous Material Transport: The Company should investigate the feasibility of re-routing the transport of hazardous materials away from the WHPA one-year time of travel zone. This option may necessarily have to exclude the I-5 corridor, since it represents a major regional transportation route.

Data Management Strategies

One of the principal goals of the WHPP is the development of a data collection network and analysis plan capable of providing the Company with advance warning of contamination to the Company's water supply. The following data management strategies seek to establish and maintain scientific data upon which future WHPP actions can be based.

Groundwater Monitoring Plan

The Company should actively participate in the collection and analysis of regional and local groundwater information. The development of a proper groundwater-monitoring plan will be crucial to the Company's capability to protect their water sources. This can be accomplished in cooperation with the Regional Water Associations of Pierce County, Tacoma-Pierce County Health Department (TPCHD), Department of Natural Resources (DNR), Washington State Department of Ecology (DOE), and other entities seeking to monitor the groundwater resources of the region.

Abandoned Well Inventory: The Company could locate and inventory decommissioned, abandoned, and unused wells. Owners of these wells could be notified of the potential liability such wells cause and be educated on the benefits of well decommissioning.

Herbicide and Pesticide Survey: The Company could inventory and monitor major herbicide and pesticide use within the WHPA. This inventory may be used to guide future groundwater monitoring and WHP-related education programs. In addition, the Company could encourage county, state, and private land managers to use vegetation management practices that protect groundwater quality.

Underground Storage Tanks Inventory: The Company could inventory and locate underground storage tanks (UST's). Besides those presently identified by the current hazard inventory, this

inventory should include new tanks placed after the hazard inventory was finished, and residential home heating oil USTS/and or other tanks that were not previously identified.

Drywell Monitoring: The Company should encourage King County and Pierce County Surface Water Management to develop an evaluation and monitoring plan for drywells within the WHPA.

Education Strategies

Education of the public and industrial/commercial occupants of the WHPA concerning groundwater protection is a critical portion of the WHPP. Through proper education, the degree and potential for future contamination can be greatly reduced; therefore, the following recommendations are made.

If not already begun, the Company should begin groundwater educational programs to educate the WHPA residents, particularly on groundwater quality issues. The WHPA could be targeted for distribution of literature regarding septic tank maintenance, fuel oil storage tank maintenance and abandonment, residential use of herbicides and pesticides, and hazardous material use, disposal and storage. TPCHD maintains a cooperative program to assist water purveyors in Pierce County with their WHPPs. This includes educational materials that will support this process. Included in the appendix is an example of an informational pamphlet to hand out or mail to water customers.

In addition to any programs offered by the City of Edgewood, the Company could participate in and support small-quantity waste disposal programs and actively work with state and local government in developing and creating public education programs concerning ground water.

Wellhead Protection Implementation Tasks

In order to accomplish the protection of the WHPA, it is recommended that the Company adopt the WHP Implementation Tasks listed below. These tasks have been ordered in their recommended priority of implementation. The Company may institute all or a portion of these tasks, depending upon available funding, time, or other concerns.

Task 1: The Company's Emergency Management Committee will include WHP planning. This group will:

- Promote adoption of the WHPA into the Tacoma-Pierce County Health Department database
- Focus applicable state and local programs to the area
- Review management strategies
- Incorporate new data
- Evaluate new requirements
- Oversee educational programs
- Evaluate new approaches to WHP

Task 2: Establish formal communication with first responders. This task is fully described in the Spill Response Section of the WHPP, as well as the Company emergency response plan.

Task 3: The Company will supply notification of the existence of the WHPA to TPCHD and Pierce County PALS. The Company will request that:

- 1) TPCHD assist small water systems with wellhead protection by initiating a small system WHP Coordination Program, and
- 2) Pierce County PALS consider the WHPA in their designations of critical areas regulations, susceptibility mapping, and development permitting.

The Company will provide susceptibility data to the County to update their maps.

Task 4: Consider seeking designation of the WHPA as a special protection area with the City of Edgewood. As mentioned previously, there are numerous special designations the Company may wish to seek in order to protect the WHPA. The Company should evaluate the protection offered by these designations and seek those most appropriate for the WHPA.

Task 5: Communicate the location of the WHPA, explain basic WHP concepts, and address specific WHP concerns to industrial/commercial site owners and local gravel mine owners.

Task 6: Increase public awareness of homeowners who are connected to the Company's water system through notification letters to customers within the WHPA. This notification letter should be given to homeowners either at the time of service hookup or as part of property escrow.

Task 7: Encourage the requirement that engineering as-builts of new septic systems be recorded with property deeds. These as-builts should be drawn and submitted by septic tank designers who are registered professional designers licensed by Washington State. Support the implementation of state laws and regulations regarding septic system inspection and maintenance programs. Participate in public education programs to notify public concerning the impact of septic systems on the WHPA. Promote and coordinate public education programs concerning proper septic tank maintenance and proper hazardous waste disposal.

Task 8: Review routine leak detection procedures for sewer lines. Request utilities use "leak proof" piping for new sewer construction and replace older lines. Develop emergency response procedures for sewer force main breaks within the 1-year travel zone of the WHPA.

Task 9: Document the location and use of petroleum pipelines and develop appropriate emergency procedures.

Task 10: Participate in a regional groundwater data development and management program. This will help assure that an adequate regional database is developed.

Task 11: Support Pierce County in maintaining a delegation of well drilling inspection authority. This could provide advance notice of drilling to the Company and allow more frequent inspection of wells drilled within the WHPA than currently occurs.

Task 12: Assure that the hydrogeologic impact of surface development is adequately evaluated during the SEPA process.

Task 13: Promote and coordinate the public education programs regarding household hazardous materials use, storage and disposal with the county local hazardous waste management program.

Task 14: The Company should develop data on the number and size of exempt underground tanks within the one-year WHPA. Promote and coordinate public education programs concerning underground tank hazards, leak detection methods, and proper removal and closure procedures. These programs should target owners of exempt underground tanks.

Task 15: Seek to have Washington State Department of Ecology prioritize the investigation of contaminated and potentially contaminated sites within the WHPA. This could assure that those areas with existing contamination within the WHPA and any subsequent contamination events are given highest priority in relation to the amount and type of contamination in clean-up activities and budgets.

Task 16: Encourage development and use of best management practices. This effort should focus upon large land units including large residential developments, schools, golf courses, parks, mining operations, and forest parcels.

Task 17: Request County, State, and private landowners to utilize vegetation management practices to protect water quality.

Task 18: Encourage thorough analysis of groundwater impacts for siting, operation and reclamation of mines. Seek to have the proper agencies require mine operators to install monitoring wells. These wells should be capable of monitoring for potential impacts from site operations for mines within and adjacent to the WHPA. Seek to have the owners document the use of hazardous materials in mining activities within and near the WHPA.

Task 19: The Company should inventory decommissioned, abandoned or unused wells in the one- and five-year time of travel zones. The owners of these wells should be informed about proper well decommissioning procedures.

Task 20: The Company could seek to have appropriate agencies require sewer hook-up for all industrial-commercial facilities within the WHPA if sewer service is reasonably available.

Task 21: Investigate the need for re-routing transport of hazardous materials through the WHPA.

Task 22: Work with responsible parties to assess adequacy of stormwater systems. This task should evaluate the existing stormwater detention facilities, establish priority for stormwater upgrades, and seek maximum infiltration of storm water where possible, given the limitations of the upland geology. An evaluation of local stormwater detention, retention, and routing priorities should likewise be considered. Promote research on the impacts of stormwater discharge from residential areas. Encourage the periodic monitoring of drywells. Review water quality data generated under general National Pollutant Discharge Elimination System (NPDES) Storm Water Permit.

SPILL RESPONSE PLAN

Introduction

The purpose of this section is to outline and evaluate spill response procedures and capabilities for the Company's WHPA. To conduct this evaluation, major spill response organizations were identified. Local response organizations were contacted to determine their response capabilities, back-up assistance, and general understanding of wellhead protection issues.

Spill events can be large or small, and can consist of highly toxic or inert materials. Events can occur under conditions where the spill is easily contained or where clean up time is ample, or they can occur where surface water, waterways, or ground water are under immediate threat. This range of possibilities has prompted a spill response (and emergency response) system that is nationwide in scope and can involve federal agencies, yet is designed to handle the more common, small-scale (yet potentially dangerous) spills. This assessment takes into account this range of possible spills and responses.

The ability of the Company to affect the protocols and procedures of the national and state response systems is limited. However, more common spills are small and require local response, as a minimum. Therefore, for the purposes of this effort, focus is given to local response capabilities and to the needs associated with these local response systems.

Spill Response in the Wellhead Protection Areas

Given the Company's reliance on wells completed in the Qva and RMC, hazardous spills could potentially affect the groundwater supply for much of the defined WHPA. Should such a spill occur, within the WHPA, a 911 call should be made immediately. The 911 operator will ask several questions concerning the location and nature of the spill and send either personnel trained in hazardous materials incidents from the nearest fire department or send directly for a full Hazardous Materials (HAZMAT) team from either King or Pierce County. In order to inform emergency responders of the sensitive nature of the area and allow them to evaluate what hazardous spill response measures are necessary, a notification letter is being sent to Edgewood Fire Department, neighboring fire jurisdictions in both counties, the Pierce County Sheriff and the Washington State Patrol (included in the appendix).

The State Patrol is the pre-designated Incident Command Agency for all incidents occurring on state highways. Without a pre-arranged agreement with the Company for HAZMAT incidents, the State Patrol must contact an agency with jurisdiction and capability (such as a local fire district) to secure a HAZMAT response team. This situation represents a potential delay, and therefore, may increase the risk to the surface and groundwater quality, particularly along the I-5 corridor. If the Company is able to secure an agreement with nearby HAZMAT teams (either directly or through the Edgewood Fire District), the response time may be lessened significantly.

The role of the Department of Ecology will be described in detail in the remainder of the section. This agency provides an important function in spill management and cleanup. They are not generally considered a "first response" agency, but because of their regional offices and their environmental protection responsibilities, they are often quickly on-scene, and can provide clean up or containment advice and services (though usually through contractors).

State and Regional Support for Local Spill Response Capability

Spill response planning has been underway throughout Washington State and within each of the two counties for many years. As a result, there are many response plans in existence, each focusing on a specific geographical area or type of substance. In addition, organizations involved in the storage and transportation of hazardous materials have been required to develop contingency plans. Accordingly, this assessment of spill response capability and recommendations for enhanced response is intended to be consistent with existing spill response plans for the area and the state.

The foundation for systems and procedures outlined in this section are described in documents such as the "Statewide Master Oil and Hazardous Substance Spill Contingency Plan" (Ecology, 1991) and the "Washington State Comprehensive Emergency Management Plan" (Department of Community, Trade and Economic Development (CTED), 1987).

The Department of Ecology is continuing the development of the State Master Oil and Hazardous Substance Spill Contingency Plan. The next major phase in the effort is the production of a volume of the plan specifically focused on operational issues. This document, when completed, will provide spill responders and key agency staff with the information and procedural guidelines necessary to effectively respond to spills. These procedures will include such items as enforcement protocols and laboratory support procedures.

The following are the spill response plans in effect in Washington State which cover inland (non-marine) areas such as wellhead protection areas and aquifer recharge areas⁴:

- National Oil and Hazardous Substances Pollution and Contingency Plan (NCP) prepared by the EPA.
- Oil and Hazardous Substance Pollution Contingency Plan for Federal Region 10 (RCP) - prepared by Region 10 of EPA.
- Washington Statewide Master Oil and Hazardous Substance Spill Contingency Plan - prepared by Ecology.
- Washington State Emergency Response Plan - prepared by CTED.
- Local Emergency Response Plans - prepared by county governments.

Spill Response Terminology

The term contingency plan should not be confused with the water supply contingency plan developed in the following chapter. Contingency planning for the purpose of this section should be construed to mean "spill response contingency" plans.

In the various contingency plans applicable to Washington State, there are repeated references to an "Incident Commander (IC)" and an "On-Scene (Site) Coordinator (OSC)." The IC is the person who is in command of an incident during its emergency phase and OSC is the person who is in charge of spill or release management and cleanup. While there is an IC in charge of the situation, the OSC takes direction from this person. After the emergency response is complete, the authority is transferred to the OSC for final cleanup.

⁴ Portions of existing statewide documents have been condensed and modified for presentation in this section.

Spill Response Organizations

Depending on the magnitude of the spill event, numerous organizations at all levels of government, the private sector, and some voluntary organizations, can have a role in spill response and cleanup. Each of the plans mentioned above describes the relationship and roles of these organizations in terms of the particular concern. Listed below are a few of the organizations which might be, depending on the size and nature of the release, involved in a spill response in a wellhead protection area or ground water recharge area.

The Ecology Spill Response Team consists of Washington State Department of Ecology regional office personnel. This team is responsible for determining the source, cause, and responsible party, as well as initiating appropriate enforcement action. Additional responsibilities include ensuring containment, cleanup, and disposal are carried out adequately. The team coordinates its actions with other state, federal, and local agencies.

The Local Response Team (LRT) consists of state and local government agencies, industry personnel, academic organizations, and other private interests that may assist the OSC in pollution response and planning. The composition and level of participation in the LRT is dependent upon the area involved, the hazard posed, and the type of assistance required. Normally, the LRT will consist of the state environmental response agency and clean-up contractors.

The Technical Assistance Team (TAT) is a contractor used by the EPA Region 10 office to provide technical oversight at spills and uncontrolled hazardous waste sites. Requests for the TAT are made via the EPA. Once on site, the TAT will report the situation to the EPA duty officer who then decides whether an EPA OSC needs to be on scene.

Initially, the resource damage assessment program was an Ecology-led effort designed to organize the state natural resource trustee agencies into an effective resource damage assessment taskforce. The state Natural Resource Damage Assessment (NRDA) team consists of representatives from Ecology, Health, CTED, the Department of Fish and Wildlife (DFW), the Parks and Recreation Commission, and the Department of Natural Resources (DNR). In the event of a major pollution event that damages natural resources, this committee's mission is to organize personnel, materials, and equipment necessary to conduct reconnaissance evaluations and initiate detailed assessments of natural resource damages.

The Environmental Response Team (ERT), based in Edison, New Jersey, was established to advise the OSC and Regional Response Team (RRT) on environmental issues surrounding spill containment, cleanup, and damage assessment. ERT personnel have expertise in areas such as treatment technology, biology, chemistry, hydrology, geology, and engineering.

The RRT, consists of representatives from selected federal and state agencies. The RRT is the regional body responsible for planning and preparedness before spill occurs, and provides advice to the OSC following such incidents.

The National Response Team (NRT) consists of representatives from the various federal agencies (such as EPA, the US Coast Guard (USCG), Fish and Wildlife Service, etc). It serves as the national body for planning and preparedness actions prior to a spill and as an emergency advisory center when a spill occurs.

Roles and Responsibilities

Spill response plans stress that for spill response procedures to be effectively executed, each party must be fully aware of their specific roles and responsibilities. Moreover, there must be an understanding of the roles of other parties involved in response activities, as well as effective coordination, cooperation, and communication among responding agencies, organizations, and individuals. This section describes the specific roles and responsibilities of the key parties, including:

- Responsible party or spiller
- Federal and state agencies
- Local government
- Facility owners
- Contractors

The Responsible Party

The primary responsibility for assessing, responding to, and containing an oil spill or discharge falls upon the individual, agency, or company responsible for the spill incident. The responsible party (RP), whether there is an approved contingency plan or not, is responsible for containment and cleanup of the spill, disposal of contaminated debris, restoration of the environment, and payment of damages. State and federal law specifically require that the removal of a discharge of oil or hazardous substance should be immediate.

Environmental Protection Agency

The EPA has primary responsibility for spills that occur on land and on inland U.S. waters not under USCG jurisdiction. As directed by the NCP, the EPA is pre-designated as OSC for spills occurring in these areas.

Department of Ecology

Ecology is the lead state agency for environmental pollution response within the State of Washington. As such, it has pre-designated the state OSC and the IC for many spills occurring in state jurisdiction. In the event of a spill occurring on a state highway, Ecology coordinates with the Washington State Patrol, which assumes responsibility as IC, and Ecology acts as the lead agency responsible for clean-up activities.

State Patrol

The State Patrol acts as the designated Incident Command agency for incidents on interstate and state highways, and other roads and jurisdictions as delegated.

CTED - Emergency Management Division

Washington State Emergency Management Division (EMD) is responsible for:

- Developing and maintaining a State Comprehensive Emergency Management Plan.
- Maintaining a 24-hour capability to receive notification of incidents and request for assistance and initial notification to local, state, and federal response agencies.
- Activating the State Emergency Operations Center (EOC) as needed to coordinate state resource identification and acquisition in support of Ecology response.

- Providing Public Information Officer (PIO) support to the Incident Command.
- Maintaining an updated list of NRDA team members submitted by participating agencies.
- Maintaining and updating a notification list of local, state, and federal agencies involved in emergency response.
- Coordinating the procurement of state resources for use by the OSC or as requested by local EMD or other designated local response agency or state response agencies.
- Participating in the NRDA team.

Department of Fish and Wildlife (DFW)

The DFW is a state agency with trustee responsibilities for wildlife, game fish, food fish, non-game fish, shellfish, and their associated habitats. The agency is also responsible for state facilities (hatcheries, properties, launching ramps, and related facilities) and assorted equipment. Of special concern are high-value habitats that may be used as nursery grounds for fish or wildlife. DFW is a participant on the NRDA team.

Department of Health (Health)

Health has the responsibility for beach closures for human health and safety purposes, public health concerns from contaminated food supply (e.g. shellfish), and general health-related matters for the safety of the public. In addition, DOH is to render all appropriate laboratory support and services to the OSC. DOH is a participant in the NRDA team.

Department of Transportation (DOT)

The DOT may provide traffic control, equipment, and personnel for non-hazardous clean-up activities on state and interstate highways. The DOT may provide and mobilize equipment necessary in a major spills incident.

Local Responders

Local emergency response organizations such as local police, county police or sheriff, and local fire districts have a key role to play in most spill situations, as they are the “first responders” for the majority of spills. These local entities provide for immediate protection of health, property, and the environment. It is this group of responders who determine the need for additional assistance and mobilization of the additional resources mentioned in this section.

Local Emergency Planning and Emergency Management

Local governments have a duty to be prepared for all disaster emergencies. Each County’s EMD is charged with establishing Local Emergency Planning Districts (LEPD) and Local Emergency Planning Committees (LEPC) to facilitate planning efforts.

LEPC’s have the responsibility to create local emergency response plans. General requirements for local response plans are contained in Title III of the 1986 SARA. Generally, local agencies, particularly fire services and law enforcement agencies, can be activated to provide emergency response services when there is a threat to life and property. Emergency response services may include: fire and explosion controls, investigation, and documentation, perimeter control, evacuation, traffic controls, and initial containment or even removal of materials, depending on the nature of the incident.

Incident Response Management

The party responsible (RP) for a spill is required by state law to notify the National Response Team (NRT) and the state EMD. The RP is also encouraged to contact the nearest appropriate regional office of Ecology. The following is a list of phone numbers for agency notification.

Washington State Emergency Management Division	1-800-258-5990
Washington State Department of Ecology	
24-hour Emergency Spill Response	1-360-407-6300
Southwest Office - Tumwater	1-360-407-6300
City of Milton Police (non-emergency)	922-8735
City of Milton Fire Department (non-emergency)	922-0944
Edgewood Fire District 8 (non-emergency)	927-2313
Federal Way Fire District 39 (non-emergency)	927-3118
Pierce County Sheriff (non-emergency)	798-4721
Federal Way Police (non-emergency)	1-253-661-4600
Washington State Patrol	
Pierce County (non-emergency)	1-253-536-6210
Environmental Protection Agency Region 10- Seattle	1-206-553-1263
National Response Center	1-800-424-8802
Pierce Country EMD (24-hours)	253-798-7470

In most spill response situations, the initial call is to a local emergency response agency such as the local fire department or district, local police, or others. The use of a 911 system will activate the local response. These first responders provide the initial on-scene control, and manage the scene under the Incident Command System described below. Attached, as Figure 13, is an organization chart for the spill response process.

State Incident Command System

The State of Washington's spill response is organized and managed under an Incident Command System (ICS). The ICS is a functional component of a larger program, the National Interagency Incident Management System (NIIMS), which was developed for the interagency management of large forest fires. The ICS, although less complex than the NIIMS, is designed to allow for the day-to-day management of response efforts and resources for all oil and hazardous substance spill responses, from the very small or routine efforts to the largest catastrophic spills involving multi-agency jurisdictions.

Specifically, the system will operate in the following scenarios:

- Single Jurisdiction/Single Agency
- Single Jurisdiction/Multi-Agency
- Multi-Jurisdiction/Multi-Agency

The ICS concept is built upon teamwork coordination and cooperation between all entities involved (or potentially involved) in a spill response. Teamwork is encouraged throughout all phases of incident management including the preparedness, mitigation, response, and recovery phases for spills of any type or size. Ecology has taken steps to ensure there is effective teamwork, coordination, and participation in the ICS by appropriate state and local agencies in addition to the USCG and the EPA.

Unified Command Structure

In Washington State, the ICS will operate using a Unified Command Structure involving representatives of the Ecology, federal government (USCG/EPA), industry, and in some circumstances local government. A Unified Command Structure is called for when the spill is multi-jurisdictional in nature, e.g., when public safety and welfare, as well as environmental damage, is imminent.

Under the Unified Command Structure, the three key On-Site Coordinators (OSC) – federal, state, and industry -- will share decision-making authority in the command post and consult with each other regarding spill response and clean-up, management issues. Participation in the Unified Command Structure does not mean that agencies such as the USCG, EPA, and Ecology, which have roles and responsibilities, set by federal and state statute, are relinquishing or surrendering their authority. Emergency situations, however, may require some actions to be taken outside of the normal permitting process.

The Unified Command Structure is a consistent, systematic means of organizing a variety of agencies having jurisdictional responsibilities surrounding an incident, into one concerted effort. The concept offers uniform and traceable procedures that enable all emergency response agencies to perform their roles effectively, yet in unison. A Unified Command is located as close to the site of the spill as practicable, without interfering in the actual spill response activities.

Organization and Staffing Principles of ICS

The ICS organization is functionally oriented around four major areas: command, planning, logistics, and administration. The flexibility to expand this organization as situations dictate is designed within the ICS, without the need to conduct major organizational changes or a cumbersome transition into a different operational system during a spill response. For example, in a minor incident a single person may serve as the OSC and perform all functions. In a major incident, the command may consist of a united command with federal and state representatives, the RP, the OSC, a staff, and a group of sections and functional units. Participants in the Unified Command/Command Post and the OSCs are normally pre-designated, any remaining sections or functions are assigned as needed.

It is important for those parties and agencies participating in ICS to understand that the key to its effective operation is the acknowledgment that the IC is in charge of the entire operation, the OSC is in charge of spill cleanup during the incident, while the section chiefs and functional unit leaders are in charge of their units or sections. As a rule, sections should have a single individual in charge with the authority to make decisions and to give orders. Without this authority, the system will fail. Accordingly, it is a maxim of ICS that section chiefs should be selected based on their experience and qualifications, not rank or seniority within their relative agency or organization.

The staffing requirements of the ICS should be viewed as a dynamic activity, not one based upon maintaining a precisely defined level. Flexibility is a key element of ICS, allowing the command structure to be as large and sophisticated, or as small and compact, as the spill event requires. As long as common sense is used, the system can be modified to fit any incident. The size of the ICS will be determined by the IC.

Recommended Spill Response Improvements

Complete Mutual Aid Agreements

Mutual aid agreements between the Milton Fire Department and Fire Districts 8 (Edgewood) and 39 (Federal Way) should be completed and routinely updated. The Fire Department should investigate agreements for direct HAZMAT response from Pierce County and King County. Response scenarios involving other potential first responders (such as the State Patrol, the King County Police, or others) should be reviewed to assure that the response protocols are clearly understood and the response system is as streamlined as possible.

Establish Responder Group

As part of the implementation of this plan, a spill responder group (consisting of local fire, police, emergency management, water districts) should be established to discuss spill response in the WHPA. Efforts should be made to communicate the extent of capture zones to the first responder organizations. This "forum" for discussion of WHP issues could take the form of a sub-group of the LEPC, or could be developed independently.

Discuss Wellhead Precautions

Through a local "responders" group, discussion should focus not only on the locations of the capture zones, but also on specific protocols and procedures for response in the zones. For example, certain types of responses may be more protective than others, depending on the chemical, the location within the zones, and the tradeoffs affecting immediate public health and safety.

ALTERNATIVE RESOURCE CONTINGENCY PLAN

Introduction

Contingency planning is needed to ensure that water users will have an adequate supply of potable water in the event of source contamination, natural disasters, or other emergencies. In recognition of this, the state WHP program requires alternative supply planning and emergency spill response planning in all WHP plans.

Water System Existing Source

The Company water system has a peak daily consumption of up to 2.2 million gallons per day (MGD), although the average daily consumption should be considerably less. The water system maintains six production wells and three storage reservoirs with a total capacity of 2,175,000 gallons.

Currently, the Company has no interties with adjoining water districts. An intertie agreement with the City of Milton and the City of Puyallup is being investigated.

Alternative Supply

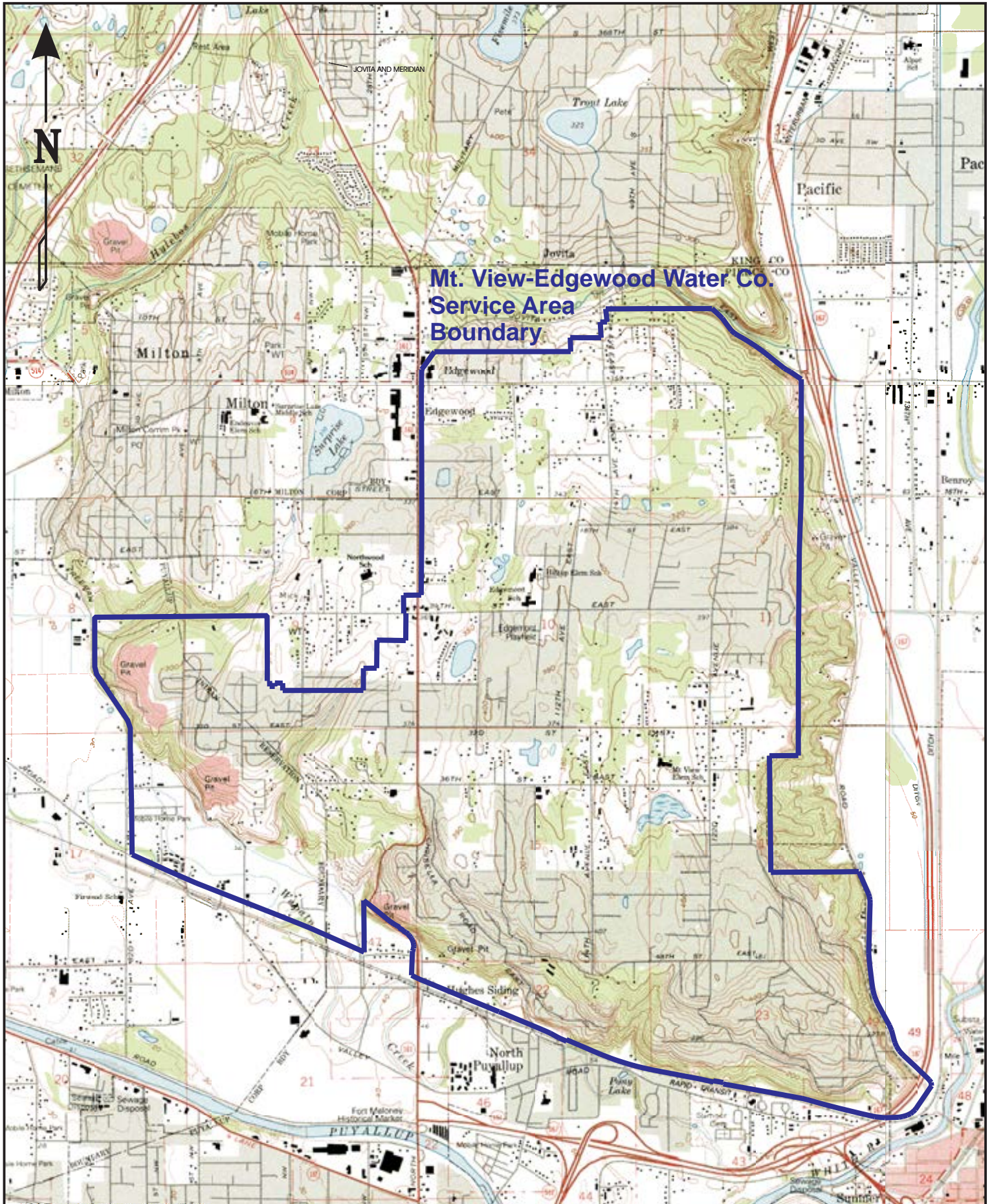
The average daily consumption is based upon 2,812 connections using 260.9 gpd per connection (733,650 gpd). The Company's storage capacity allows for one day of reserve under maximum use conditions of 2.2 MGD (peak day production in 2002/2003), assuming no wells are available to produce water. However, this scenario is highly unlikely. A more likely scenario would be the loss of one or two wells due to contamination or mechanical failure, which would leave the Company with several other wells to compensate. With Wells 5, 6 and 7 in full production and including the full capacity of the storage, the Company could supply the maximum daily demand for about three days.

Should a well be permanently disabled, the Company will need to drill a new well. New well placement will depend upon the nature of the disablement. For example, if the well is disabled by a contaminant spill, the new well can be drilled up gradient of the spill. If the well is disabled due to mechanical failure, well replacement can be accomplished at the same well site.

REFERENCES

- Anderson, M.P., and Woessner, W.W., 1992, *Applied ground water modeling, simulation of flow and advective transport*: San Diego, Academic Press, Inc., 381 p.
- Jones, M. A., 1999, *Geologic Framework for the Puget Sound Aquifer System, Washington and British Columbia*: U.S. Geological Survey Professional Paper 1424-C.
- Luzier, J.E., 1969, *Geology and ground-water resources of southwestern King County*: Washington State Department of Water Resources Water-Supply Bulletin No. 28, 260 p. 3 plates.
- Robinson & Noble, Inc., 1992, *Hydrogeologic Analysis of the Federal Way Area, Washington*, Volumes 1 & 2
- Robinson & Noble, Inc., 1987, *Description of the Aquifer Systems in the Federal Way*, prepared for Federal Way Water and Sewer District, 39 p. and Appendix.
- U.S. Environmental Protection Agency, Office of Water. 1991. *Managing Ground Water Contamination Sources in Wellhead Protection areas / A Priority Setting Approach*. Washington D.C. EPA 570/9-91-023; 252 p.
- Walters, K.L., and Kimmel, G.E., 1968, *Ground-water Occurrence and Stratigraphy of Unconsolidated Deposits, central Pierce County, Washington*: Washington Department of Water Resources Water Supply Bulletin 22, 428 p.
- Washington State Department of Health, 1995, *Wellhead Protection Program, April, 1995. Wellhead Protection Program Guidance Document*. Olympia, Washington. 78 p.
- Washington State Department of Health, 1993, *Wellhead Protection Program November, 1993. Inventory for Potential Contaminant Sources Within Washington's Wellhead Protection Areas*. Olympia, Washington. 33 p.
- Western Regional Climate Center website, <http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?wapuya>, average annual rainfall, period of record 1931 to 1995 for the Puyallup 2 station

FIGURES



**Mt. View-Edgewood Water Co.
Service Area
Boundary**



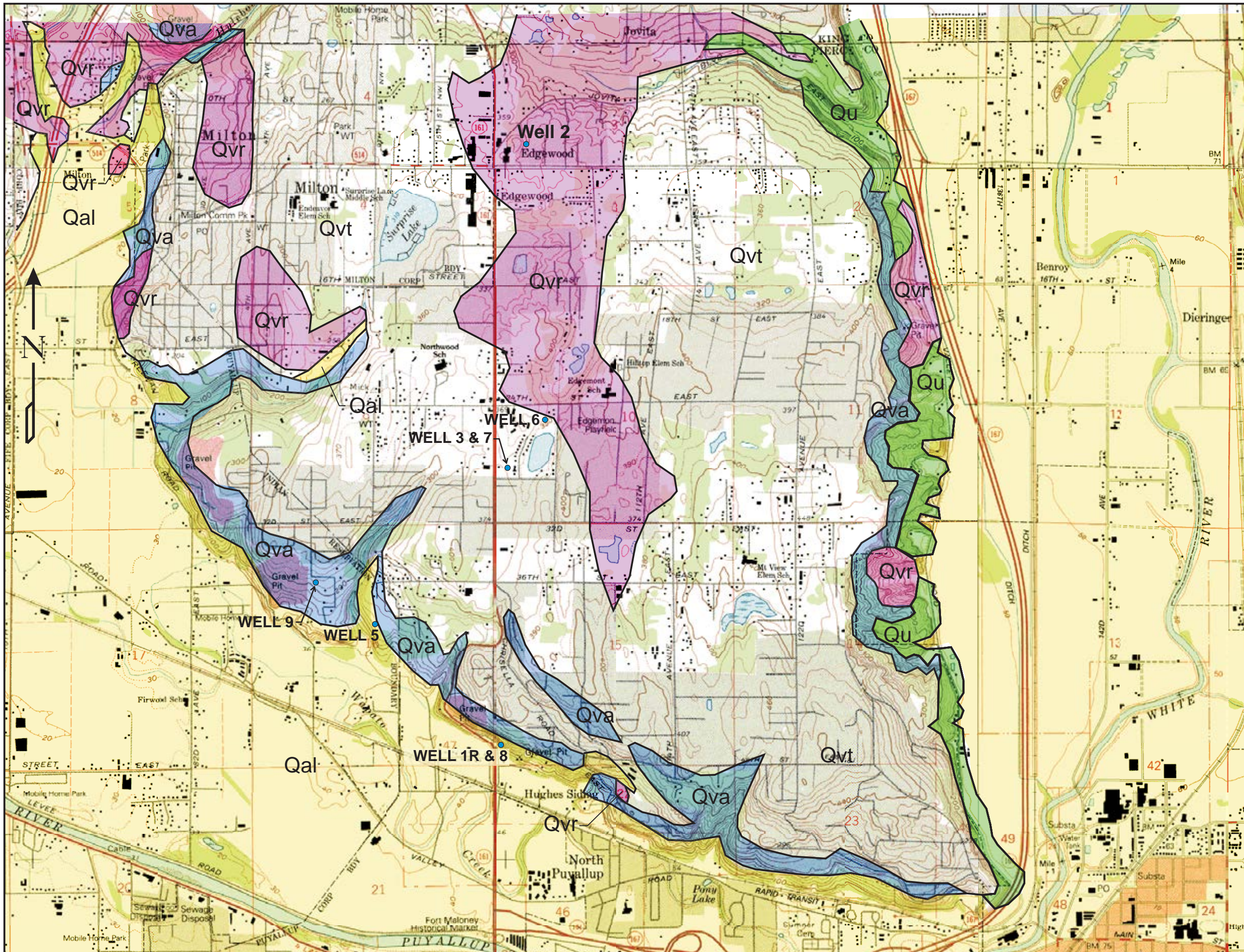
Note: Basemap taken from USGS Puyallup Quad.

PM: BGC
March 2005

1629-005A
Pierce County

T 24 N/R 3 W
Scale 1" = ~2800'

Figure 1
Vicinity Map



Legend:

Qal	QUATERNARY ALLUVIUM
Qvr	VASHON RECESSONAL OUTWASH
Qvt	VASHON TILL
Qva	VASHON ADVANCE OUTWASH
Qu	PRE-VASHON DEPOSITS

Figure 2

Surface Geology Map

Mt. View - Edgewood,
Wellhead Protection Plan

Notes:
Geologic Information Modified
From Water Supply Bulletin 29
Basemap taken from USGS
Puyallup Quad.

Pierce County
T 20 N/R 4 E
Scale 1" = 2000'
PM: BGC
1629-005A
March 2005



**ROBINSON
NOBLE** SALT BUSH
INC., Established 1947
GROUNDWATER & ENVIRONMENTAL SCIENTISTS

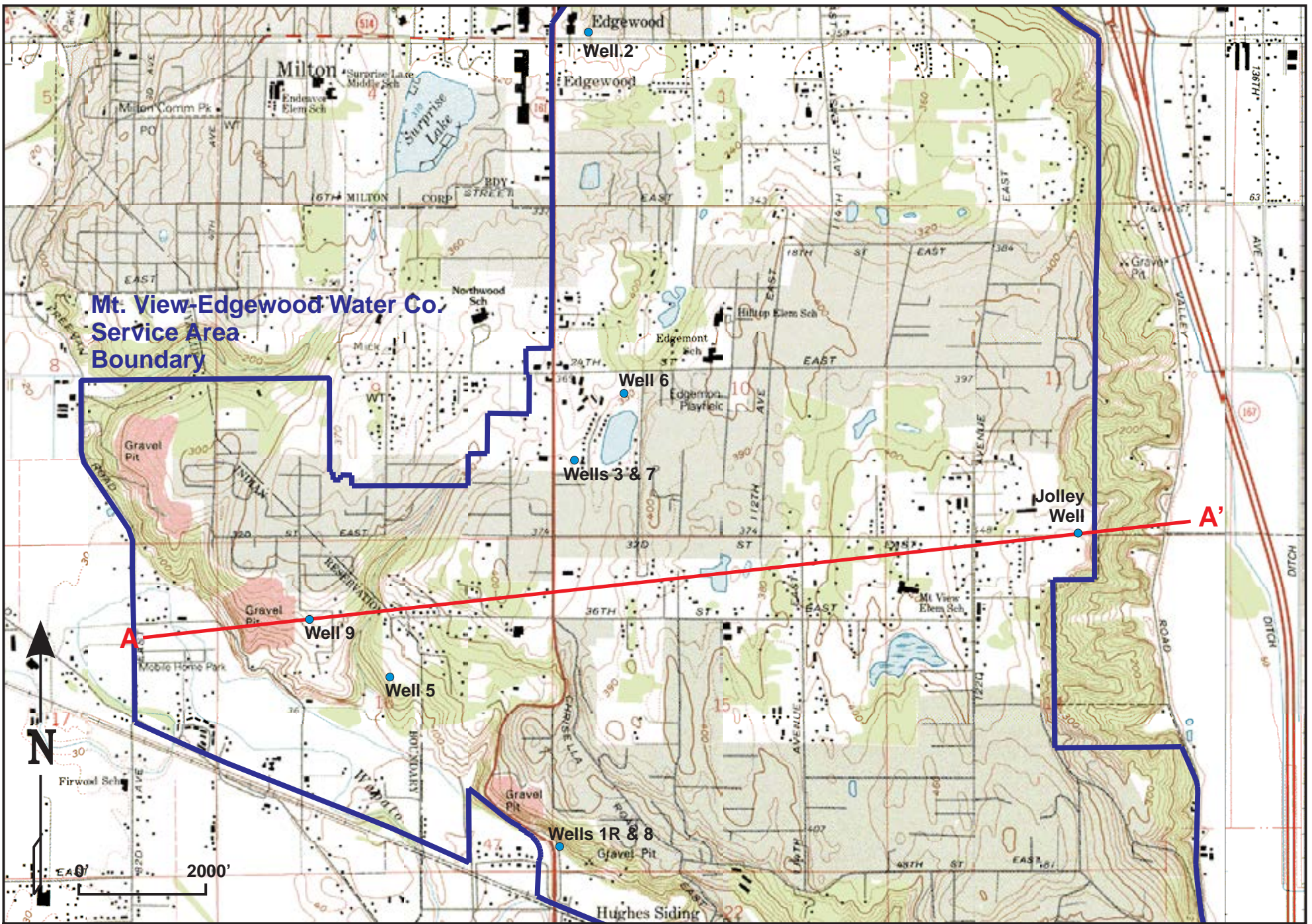
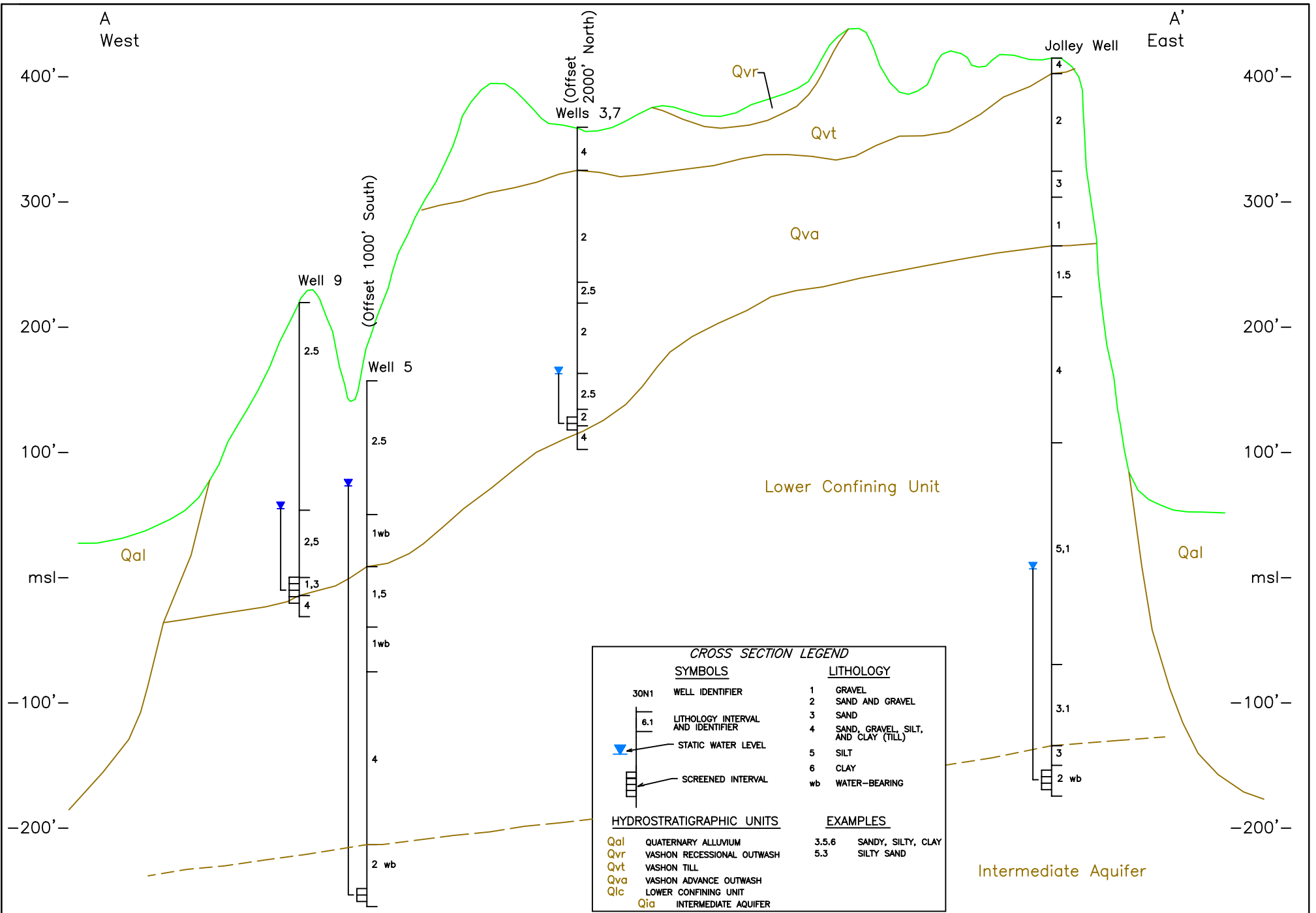


Figure 3
Well and Cross Section Location Map
Mt. View - Edgewood Water Company: Wellhead Protection Plan



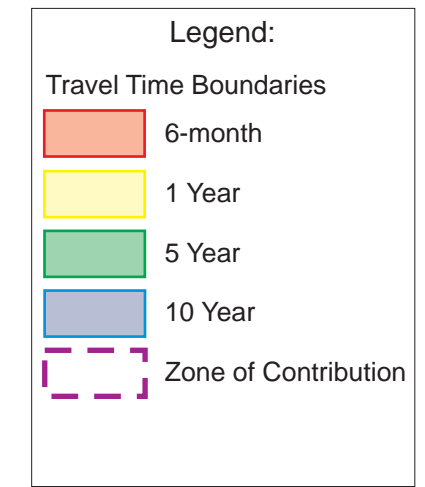
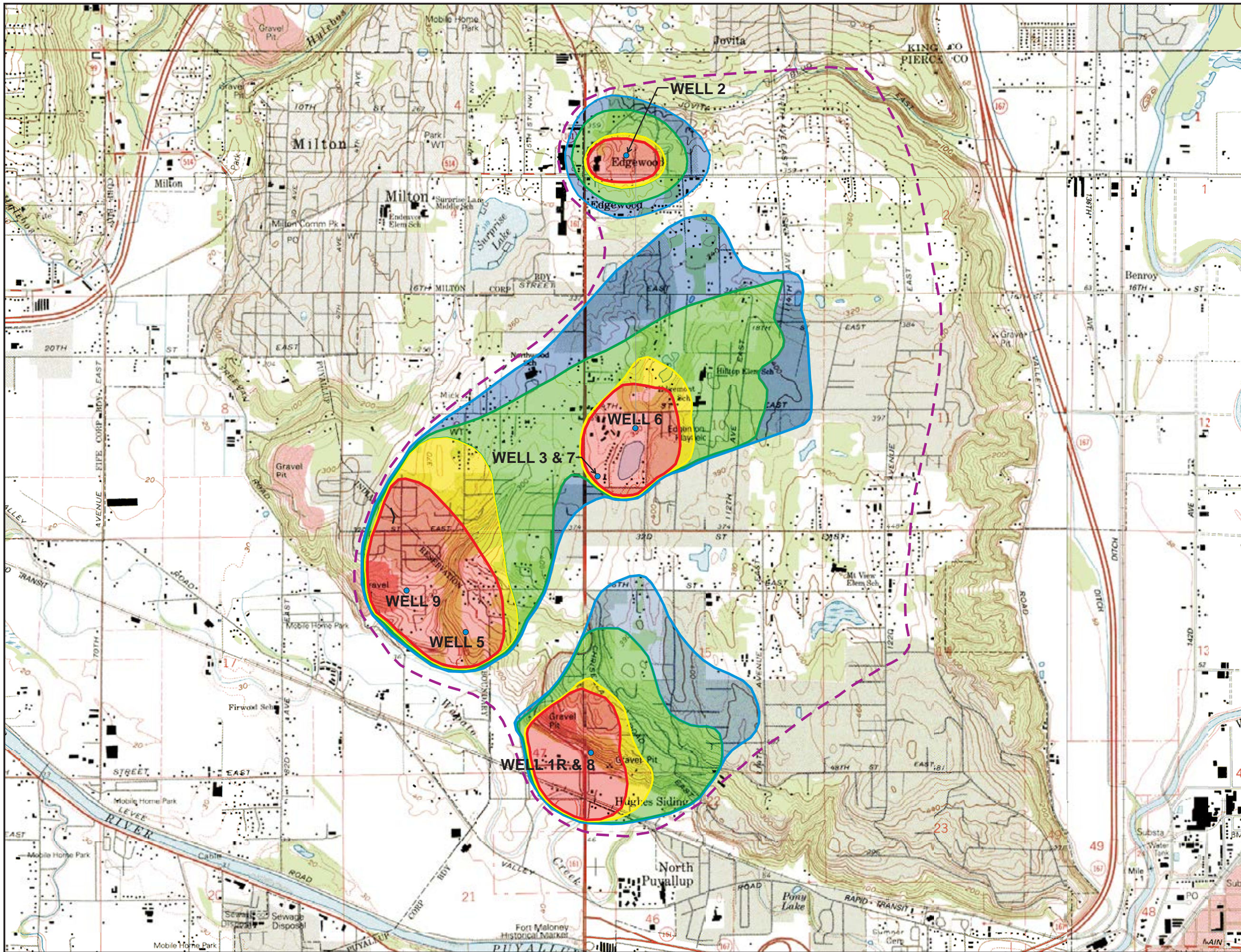
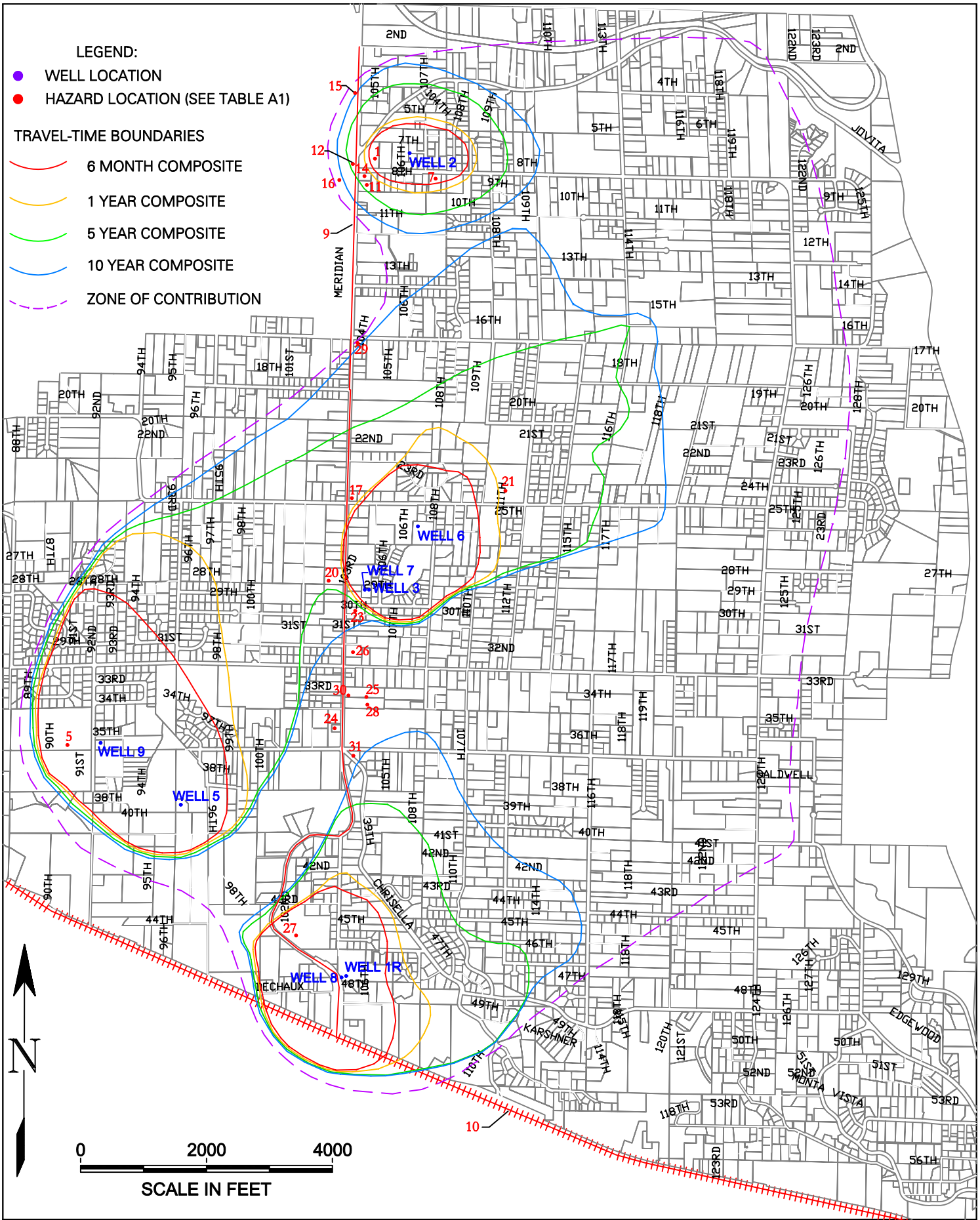


Figure 5

Wellhead Protection Plan Areas
 Mt. View - Edgewood,
 Wellhead Protection Plan

Notes:
 Basemap taken from USGS
 Puyallup Quad.
 Pierce County
 T 20 N/R 4 E
 Scale 1" = 2000'
 PM: BGC
 1629-005A
 March 2005



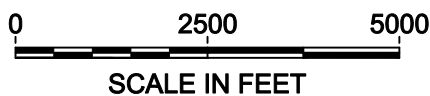
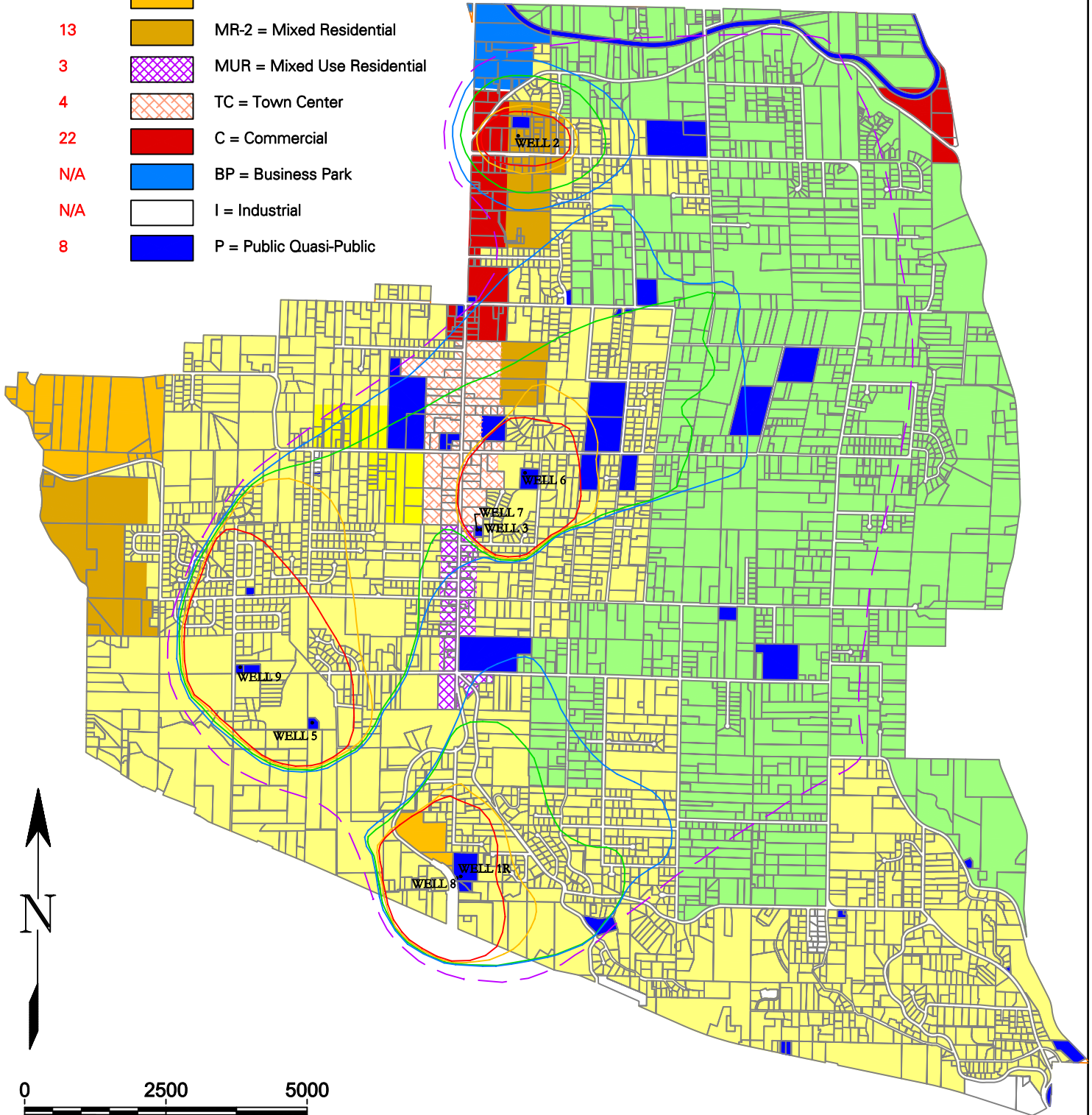
HAZARD RANKING

ZONE

Notes:

- 18 SF-2 = Single Family
- 2 SF-3 = Single Family
- 19 SF-3 = Single Family
- 5 MR-1 = Mixed Residential
- 13 MR-2 = Mixed Residential
- 3 MUR = Mixed Use Residential
- 4 TC = Town Center
- 22 C = Commercial
- N/A BP = Business Park
- N/A I = Industrial
- 8 P = Public Quasi-Public

For Travel-Time Boundary Nomenclature
See Figure 6
For Hazard Ranking Location See Figure 6 and
Table A1



APPENDICES

Table A1: Hazard Inventory List

Rank	Name	Address	Source List(s)	Lat	Long	I	II	III	Comments
1	Edgewood Shopping Center	717 Meridian E	CSCSL	47.2506420	122.2915194	1	1	585	Well 2 hazard
2	Single Family Moderate	n/a	Potential			1	4	20	Land Use hazard
3	Mixed Use Residential	n/a	Potential			1	4	75	Land Use hazard
4	Town Center	n/a	Potential			1	4	100	Land Use hazard
5	Mixed-Residential Low	n/a	Potential			1	4	400	Land Use hazard
6	Josties Sand & Gravel Quarry	n/a	Observed	47.2250660	122.3104944	1	5	300	
7	Caliber Concrete Construction	10514 8th St E	UST	47.2496774	122.2877380	1	6	615	Well 2 hazard
8	Public	n/a	Potential			1	7	600	Land Use hazard
9	Meridian E Transportation Corridor	n/a	Observed	47.2163167	122.2948750	1	9	100	
10	Railroad Transportation Corridor	n/a	Observed	47.2121472	122.2907444	1	9	860	
11	Jackpot Station	823 Meridian E	WA ICR, CSCSL	47.2494365	122.2920742	2	1	840	Well 2 hazard
12	BP Station	728 Meridian E	LUST, UST, WA ICR	47.2502880	122.2929800	2	2	960	Well 2 hazard
13	Mixed-Residential Moderate	n/a	Potential			2	4	1340	Land Use hazard
14	7-Eleven	817 Meridian E	RCRAGN	47.2418154	122.2921246	2	5	820	Well 2 hazard
15	Milton Texaco Station	524 Meridian E	UST	47.2517787	122.2930320	2	6	1170	Well 2 hazard
16	Surprise Lake Shopping Center	900 Meridian E	CSCSL	47.2479212	122.2945451	3	1	1130	Well 2 hazard
17	Shell Station	2325 Meridian E	LUST, UST	47.2321330	122.2942166	3	2	1195	Used to be Texaco
18	Single Family Low	n/a	Potential			3	4	2200	Land Use hazard
19	Single Family High	n/a	Potential			3	4	3690	Land Use hazard
20	Totem Coaches Inc.	2724 Meridian E	RCRAGN	47.2322300	122.2948830	3	5	590	
21	Puyallup School Dist Edgemont JH	10909 24th St E	RCRA NLR	47.2363611	122.2825806	3	9	1450	
22	Commercial	n/a	Potential			4	4	6950	Land Use hazard
23	Petro Chemical Transport Inc./ Bartleson Transport Inc.	3001 N Meridian St	RCRANLR	47.2307000	122.2935500	4	9	445	Not Geocoded
24	7-Eleven / Antique Shop	3502 Meridian E	RCRAGN	47.2258330	122.2943000	5	8	2795	Not Geocoded
25	Amsoil	3327 Meridian Ave E	Observed	47.2270330	122.2922330	5	8	2835	
26	Sterling Auto	3125 Meridian E	Observed	47.2290500	122.2932000	5	8	3700	
27	North Hill Sand Gravel Inc.	2801 Meridian Ave N	RCRANLR	47.2187972	122.2972000	5	9	1700	Not Geocoded
28	Cobweb Specialties Custom Hot Rod Fa	3327 Meridian Ave E	Observed	47.2268000	122.2923330	5	9	2830	
29	Bakers Automotive	10206 16th St E	RCRAGN	47.2426166	122.2933160	5	9	3080	
30	Henneberg Fleet Services	3327 Meridian E	UST	47.2270660	122.2935330	5	9	3180	
31	Flea Market	10212 36th St E	Observed	47.2246166	122.2931830	5	9	3550	

March 17, 2005

Pierce County Fire District

Dear Emergency Responder:

The Mountain-View Edgewood Water Company has developed a wellhead protection plan as required by the Washington Department of Health (DOH). As part of this plan, the water system must coordinate with agencies responsible for incident/spill response procedures. As stated in the DOH *Wellhead Protection Program Guidance Document*, "if a public water system's source water is determined to be vulnerable to surface activities, special procedures may need to be incorporated into local emergency response plans." As part of wellhead protection planning, emergency responders are asked to evaluate whether changes in incident/spill response procedures are needed to better protect groundwater within wellhead protection areas. To assist with your review, a map of the wellhead protection area is enclosed.

The findings of the wellhead protection study indicate that, due to the nature of the surficial geology, surface spills will not likely be quickly absorbed into the production aquifer unless the spill is in close proximity to the production wells. However, care should still be exercised because the nature of the geology can vary appreciably over short distances.

Thank you for your attention in this matter. If you have any questions about the plan, please feel free to contact us.

Sincerely,

Mountain-View Edgewood Water Company

cc. Pierce County Sheriff

Appendix J

Cross Connection Control Plan

Mt. View-Edgewood Water Company

11610 - 32nd Street E.
Edgewood, Washington 98372

Administrative Rules For the Operation of the Cross Connection Control Program

These rules, policies, and procedures are established to protect the public water system from contamination due to cross-connections with the Customer's water systems.

WHEREAS, Chapter 246-290 of the Washington Administrative Code Rules and Regulations governing public drinking water supplies requires that the Water Purveyor protect the public drinking water supply from contamination due to cross-connections; and

WHEREAS, Chapter 246-290 of the Washington Administrative Code Rules and Regulations governing public drinking water supplies requires that all cross-connections be eliminated or controlled; and

WHEREAS, Chapter 246-290 of the Washington Administrative Code Rules and Regulations governing public drinking water supplies requires that the Water Purveyor develop and implement a cross-connection control program; and

WHEREAS, Cross-connections within the Customer's water systems pose potential sources for the contamination of the public drinking water supply; and

WHEREAS, The By-laws of the Mt. View-Edgewood Water Company require the Board of Directors to make rules and regulations for the use of the water from the system; now

THEREFORE, The Mt. View-Edgewood Water Company establishes the following administrative rules. For public health and safety these rules shall apply equally to all new and existing customers.

1.0 **PURPOSE:**

To establish administrative rules, for the implementation of a cross-connection control program in the Mt. View-Edgewood Water Company (purveyor) water supply area, to protect the potability of the public water system and the health of water consumers from effects of contamination due to cross-connections.

2.0 **PREVENTION OF CONTAMINATION:**

2.1 The customer's water system shall be considered a potential high health hazard requiring the isolation of the customer's premise by a purveyor approved, customer installed and maintained air gap. The air gap shall be located at the end of the purveyor's water service pipe. Water shall only be supplied to the customer through this purveyor approved air gap.

2.2 Notwithstanding the aforesaid, the purveyor, upon assessing the risk of contamination posed by the Customer's water system and use of water, may allow the Customer to connect directly to the water service, i.e., without a purveyor approved air gap. Permission for the direct connection to the water service will be at the sole discretion of the purveyor, and will be based on the following terms and limitations:

2.2.1 The Customer agrees to take all measures necessary to prevent the contamination of the plumbing system within their premise and the purveyor's distribution system that may occur from backflow through a cross-connection within the property lines of their premise. These measures shall include the prevention of backflow under any backpressure or backsiphonage condition, including the disruption of supply from the purveyor's system that may occur by reason of routine system maintenance or during emergency conditions, such as a water main break.

2.2.2 The customer agrees to install, operate and maintain their water system in compliance with the State of Washington Plumbing Code, as it pertains to the prevention of contamination, and protection from thermal expansion due to a closed system that could occur with the present or future installation of backflow preventers on the Customer's service and/or at plumbing fixtures.

2.2.3 For cross-connection control or other public health related surveys, the customer agrees to provide free access for the employees of the purveyor to all parts of the premise during reasonable working hours of the day for routine surveys, and at all times during emergencies.

- 2.2.4 The customer agrees to install all backflow prevention assemblies requested by the purveyor, and to maintain those backflow prevention assemblies in good working order. The assemblies shall be of a type, size and make appropriate for the degree of hazard; approved by the purveyor and the Washington State Department of Health. The assemblies shall be installed in accordance with all standards established by the purveyor.
- 2.2.5 The customer agrees, at the customer's expense, to have all backflow prevention assemblies installed, tested upon approval of installation, tested annually thereafter per the purveyor's schedule, after repair and after relocation, or whenever requested by the purveyor. A purveyor approved and Washington State Department of Health certified backflow prevention assembly tester (BAT) shall do all testing. The results of the tests shall be reported within 10 calendar days to the purveyor on a form provided by or approved by the purveyor.
- 2.2.6 The customer agrees to obtain prior approval from the purveyor for all changes in water use, and alterations and additions to the plumbing system, and shall comply with any additional requirements imposed by the purveyor for cross-connection control.
- 2.2.7 The customer acknowledges the right of the purveyor, in keeping with changes to Washington State regulations, or the purveyors risk management policies, to impose retroactive requirements for additional cross-connection control measures.
- 2.2.8 The customer acknowledges the right of the purveyor to discontinue water supply within 72 hours of giving notice, or a lesser period of time;
 - 2.2.8.1 When required to protect the public health; or
 - 2.2.8.2 When the customer fails to cooperate in the installation, maintenance, repair, inspection, or testing of backflow prevention assemblies or air gaps required by the purveyor.
- 2.2.9 The customer agrees to indemnify and hold harmless the purveyor for all contamination of the customer's plumbing system or the purveyor's distribution system that results from an unprotected or inadequately protected cross-connection within the customer's water system. This indemnification shall pertain to all backflow conditions that may arise from the purveyor's suspension of water

supply or reduction of water pressure, recognizing that the air gap separation otherwise required would require the customer to provide adequate facilities to collect, store and pump water for their premise.

2.2.10 The Mt. View-Edgewood Water Company Policy and Procedure for the Cross-Connection Control Program shall contain the specific procedures and schedules for assessing, eliminating, and controlling cross-connections.

2.2.10.1 The purveyor shall establish a schedule for the initial survey and repeat surveys of new and existing premises for cross-connections.

2.2.10.1.1 The schedule for inspections shall be based on the risk management policies established by purveyor and the minimum requirements established by Washington State regulations (WAC 246-290-490, effective April 9, 1999).

2.2.10.2 The General Manager of the Mt. View-Edgewood Water Company water system is directed to develop and implement policies and procedures for the day to day operation of the Cross-Connection Control program to protect the public drinking water supply from risk of contamination due to cross-connections.

2.2.10.2.1 The Mt. View-Edgewood Water Company CCC policies shall be in accordance with Washington State regulations. The policies shall be developed using recognized manuals on CCC such as:
The American Water Works Association – Pacific Northwest Section “Manual of Cross-Connection Control,” Sixth Edition; and the “Manual of Cross-Connection Control,” Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California.

2.2.10.3 The General Manager may establish more stringent requirements, as deemed necessary, to reduce the risk of contamination of the public water supply system.

04/11/2001

- 2.3 The survey of a customer's premise shall be for sole purpose of establishing the Mt. View-Edgewood Water Company's minimum requirements for the protection of the public water supply system, commensurate with the CCS assessment of the degree of hazard.
 - 2.3.1 It shall not be assumed by the customer or other regulatory agencies that the Mt. View-Edgewood Water Company's survey constitutes an approval of the customer's water system, or an assurance to the customer of the absence of cross-connections therein.
- 2.4 The Mt. View-Edgewood Water Company shall charge the account of any customer who violates any applicable rules and regulations, concerning cross-connection control, for all costs, including but not limited to, service calls and any damage incurred by the Mt. View-Edgewood Water Company in relation to such violations.

Approved by the Board of Directors the 11th day of April, 2001.

Mt. View-Edgewood Water Company

11610 - 32nd Street E.
Edgewood, Washington 98372

Cross-Connection Control Program

Purpose:

The purpose of the Mt. View-Edgewood Water Company (MTVE) Cross-Connection Control Program is to protect the public water system, as defined in WAC 246-290-490 from contamination via cross-connections. Per WAC 246-290-490(1)(d) the purveyor's responsibility for cross-connection control shall begin at the water supply source, include all the public water treatment, storage, and distribution facilities, and end at the point of delivery to the customer's water system, which begins at the downstream end of the service connection or water meter located on the public right-of-way or utility-held easement.

WAC 246-290-490 allows MTVE to develop and implement a Cross Connection Program that relies on premises isolation or a combination program that relies on premises isolation and in-premises protection. MTVE is a private, non-profit, member-owned public water system serving the City of Edgewood. As such it is not the "Authority Having Jurisdiction". The best way to protect the system's water quality, respect customer privacy, and comply with the WAC is for MTVE to install a backflow prevention assembly as premises isolation at the water meter.

Per chapter 19.27 of the RCW all in-premises hazards and in-premises assemblies are the responsibility of the Authority Having Jurisdiction (AHJ) who is the City of Edgewood Building Official. Once premises isolation is installed, MTVE's responsibility stops at the point of installation.

Administrative rules for the Cross-Connection Control Program were approved by the Board of Directors the 11th day of April, 2001.

At the board meeting held the 15th day of June, 2005 the Board of Directors voted unanimously to take ownership of a complete premises isolation program. This was decided after receiving input from members at the May 18, 2005 Board meeting, and from many conversations with other members and staff.

Procedures:

The control or elimination of cross-connections shall be in accordance with WAC 246-290-490 and MTVE's Premises Isolation Cross-Connection Program described herein.

The minimum requirement for all residential connections is a DCVA installed as premises isolation located adjacent to the water meter prior to any taps.

The minimum requirement for all Table 9 premises and all new non-residential service connections (e.g. commercial, industrial, etc.) is an RPBA installed as premises isolation located immediately adjacent to the water meter prior to any taps.

Existing non-residential service connections (e.g. commercial, industrial, etc.) that are protected by a DCVA shall be allowed as long as no Table 9 uses occur, or until permitted construction occurs, or the property changes ownership. Annual inspections shall continue for these premises and a copy of the approved test report provided to MTVE until an RPBA is installed.

The minimum requirement for a residential fire system connection is a DCVA.

The minimum requirement for all other fire systems is an RPDA installed within three (3) feet of the water main.

Property Owner (Member):

DCVA's shall be protected against physical damage by the property owner, at the property owner's expense.

RPBA's/RPDA's shall be protected against freezing, flooding, and physical damage by the property owner, at the property owner's expense.

Adequate protection of member's facilities/property against thermal expansion is the member's responsibility.

Cross Connection Control Specialist:

MTVE will employ a DOH-certified Cross Connection Control Specialist (CCS) as part of its staff to provide the necessary expertise and services.

The CCS will be responsible for all Cross-Connection Control (CCC) activities that require the expertise of a certified CCS, including, but not limited to:

- Preparation of and recommendation of changes to the CCC program;
- Performance of and/or review of CCC hazard evaluations;
- Recommendation of the type of backflow preventer to be installed;
- Inspection of backflow preventers for proper application and installation;
- Review of backflow preventer inspection and test reports;
- Recommendation and/or the granting of variances to mandatory premises isolation;
- Investigation of backflow incidents and other water quality problems;
- Completion of CCC Activity and Program Summary Reports and submission to DOH when requested.

Backflow Prevention Assembly Testing and Repair Requirements:

Initial testing of backflow assemblies shall be conducted by a Backflow Assembly Tester (BAT) prior to the assembly being placed into service. If the assembly fails to test satisfactorily it shall be repaired. After repair, the assembly shall be re-tested by a BAT and the passed test report forwarded to MTVE.

MTVE shall be responsible for testing, normal maintenance, and repair of all Premises Isolation assemblies two (2) inch or smaller in size that are located on right of way or easement.

The property owner (member) shall be responsible for the testing, normal maintenance, and repair of all Premises Isolation assemblies over two (2) inch in size, assemblies located within a building, Fire System assemblies, and all other in-premises assemblies.

All backflow prevention assemblies shall be inspected and tested by a BAT at least annually during the assigned test month. Notification of the requirement for the testing will be done by MTVE to all members responsible for assemblies of record. The results of the tests must be received by MTVE before the end of the assigned test month.

If passed test results are not received by the end of the assigned test month, a second reminder letter will be sent requiring test reports by a suspense date not more than 30 days after the end of the assigned test month.

If the test reports are not received by the suspense date of the second letter, a registered letter will be sent with notification of a specific date of termination of water service. Fees to restore water service shall apply per the current fee schedule.

Any time an assembly is reinstalled, relocated, or re-plumbed it shall be tested by a BAT prior to being placed in service.

Backflow Assembly Tester Requirements:

MTVE will maintain a list of state approved BAT's willing to test backflow assemblies in MTVE's service area. MTVE does not set or control the fees charged by the BAT, and accepts no responsibility associated with the BAT.

BAT's desiring to be on MTVE's list of testers must submit proof of their current Washington State Department of Health Backflow Assembly Certification, a current copy of reports of verification of accuracy or calibration of the BAT differential pressure test kit, a current certificate of liability insurance listing MTVE as the certificate holder and as additional insured.

The BAT shall complete and submit a Backflow Assembly Test Report Form acceptable to MTVE for each Backflow Prevention Assembly tested. MTVE will furnish backflow assembly test report forms upon request.

Backflow Incident Response:

In the event of a suspected backflow the CCS shall initiate the incident response plan. The incident response plan will include, but will not be limited to:

- Notification of affected population by door hanger;
- Notification and coordination with DOH Drinking Water Regional Office, Law Enforcement, and the AHJ;
- Investigation and identification of the source and cause of contamination;
- Isolation of the source of contamination and the affected area(s);
- Cleaning, flushing, and other measures to mitigate and correct the problem;
- Taking corrective action to prevent future backflow occurrences; and
- Completion and submission to DOH of a Backflow Incident Report.

The CCS will use the *BACKFLOW INCIDENT INVESTIGATION PROCEDURES* manual as an additional resource.

Records and Reports:

MTVE will maintain records of the following types of connection-specific information:

- a. Service connections/consumer premises information including:
 - Assessed degree of hazard; and
 - Required backflow preventer to protect the public water system.
- b. Backflow preventer inventory and information including:
 - Installation and inspection dates, inspection results and person conducting inspection; and
 - Backflow assembly location, assembly description (type, manufacturer, make, model, size and serial number), installation, inspection and test dates, test results, and person performing test.
- c. Variances to mandatory premises isolation (if any) granted by MTVE including:
 - Name, address and description of premises;
 - Date of hazard evaluation and date the variance is granted;
 - Expiration date of variance, if any, and date of next hazard evaluation; and
 - Justification(s) for granting of the variance.

MTVE will complete the following reports as required by WAC 246-290-490:

- Cross-connection control program activities information for the calendar year;

- Cross-connection control program summary information, when required, or when there are significant policy changes;
- Backflow incident reports;
- Documentation of variances to mandatory premises isolation.

Fire Hydrant Use:

MTVE prohibits the use of fire hydrants except by authorized Fire and/or MTVE personal. Contractors (or others) desiring bulk water must use the tanker fill point at MTVE's shop building, or an approved service connection.

MTVE Tanker Fill Point:

MTVE only allows tanker trucks to obtain water from the designated fill point located at 11610 32nd St E. (Office/Shop). MTVE will install, maintain, and test an RPBA at this site.

Severability:

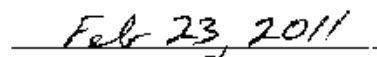
If any section or provision of this article is found to be invalid, the remaining sections and provisions thereof shall not be affected.

Approval of Program:

This program for the operation of MTVE's Cross Connection Control Program shall be in force immediately upon approval by the Board of Director's and the General Manager.

MTVE's Cross Connection Control Program as shown above shall remain in effect until changed in writing and the change is dated and signed by the General Manager.


Signature


Date

Appendix K

Cost Estimates

Mt. View-Edgewood Water Company
S-1 Storage Improvement
Reservoir and Booster Station at South Res Site

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	Mobilization, Cleanup, and Demobilization	Lump Sum	\$ 10,000.00	\$ 10,000.00
2	Erosion Control	1 EA	\$ 10,000.00	\$ 10,000.00
3	Earthwork	1 EA	\$ 15,000.00	\$ 15,000.00
4	Reservoir, 80' Diam. X 30' H	1 EA	\$ 1,375,000.00	\$ 1,375,000.00
5	Reservoir Appurtenances & Fill Line	1 EA	\$ 75,000.00	\$ 75,000.00
6	Tank Mixer	1 EA	\$ 14,000.00	\$ 14,000.00
7	8-inch DI Water Main & Fittings	200 LF	\$ 150.00	\$ 30,000.00
8	8-inch Valving	5 EA	\$ 1,200.00	\$ 6,000.00
9	8-inch Altitude Valve and Vault	1 EA	\$ 20,000.00	\$ 20,000.00
10	Construct CMU Building, 14 x 24	366 SF	\$ 250.00	\$ 91,500.00
11	Booster Pumps, 15 HP 500 GPM	2 EA	\$ 17,500.00	\$ 35,000.00
12	Electrical	1 EA	\$ 160,000.00	\$ 160,000.00
13	Mechanical	1 EA	\$ 45,000.00	\$ 45,000.00
14	Stormwater/Drainage Facilities	1 EA	\$ 50,000.00	\$ 50,000.00
15	Lawn/Landscaping	1 EA	\$ 10,000.00	\$ 10,000.00
16	Surfacing/Pavement	1 EA	\$ 25,000.00	\$ 25,000.00
17	Trench Safety	1 EA	\$ 2,500.00	\$ 2,500.00
18	Asphalt Repair/Access	1 EA	\$ 20,000.00	\$ 20,000.00
19	Generator, 45 kW 480, 3 Ph. w/ 40 hour run	1 EA	\$ 55,000.00	\$ 55,000.00
20	SCADA Modifications and Programing	1 EA	\$ 12,000.00	\$ 12,000.00
21	Outside Testing	1 EA	\$ 20,000.00	\$ 20,000.00
22	DOH Review Fees	1 EA	\$ 3,000.00	\$ 3,000.00
23	Start-up	1 EA	\$ 5,000.00	\$ 5,000.00
	Subtotal			\$ 2,089,000.00
	Tax Rate (9.4%)			\$ 196,366.00
	Subtotal			\$ 2,285,366.00
	Engineering (5%), Construction Management (3%), Permits (3%)			\$ 251,390.26
	Contingency (15%)			\$ 342,804.90
	2017 TOTAL ESTIMATED CONSTRUCTION COST			\$ 2,879,561.16
	2019 COST, INCLUDES 2.5% PER YEAR FOR INFLATION			\$3,025,338.94

**Mt. View-Edgewood Water Company
DS-1 Distribution System Improvement
Well 8 Pump and Building Replacement**

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	Mobilization, Cleanup, and Demobilization	Lump Sum	\$ 5,000.00	\$ 5,000.00
2	Erosion Control	Lump Sum	\$ 5,000.00	\$ 5,000.00
3	Asbestos Inspection	1 EA	\$ 1,000.00	\$ 1,000.00
4	Demo Existing Building and Dump Fees	Lump Sum	\$ 8,500.00	\$ 8,500.00
5	Pull Existing Pump	1 EA	\$ 3,000.00	\$ 3,000.00
6	Video Well	1 EA	\$ 1,000.00	\$ 1,000.00
7	Trench Safety Systems	Lump Sum	\$ 1,000.00	\$ 1,000.00
8	8" Main, Valves, and Fittings	50 FT	\$ 250.00	\$ 12,500.00
9	Construct CMU Building	240 SF	\$ 450.00	\$ 108,000.00
10	Electrical	1 EA	\$ 30,000.00	\$ 30,000.00
11	Pump and Motor Assembly with Installation	1 EA	\$ 40,000.00	\$ 40,000.00
12	Modify Well Head	1 EA	\$ 15,000.00	\$ 15,000.00
13	Control Valves and Meter	1 EA	\$ 20,000.00	\$ 20,000.00
14	SCADA Modifications and Programing	1 EA	\$ 3,000.00	\$ 3,000.00
15	DOH Review Fees	1 EA	\$ 3,000.00	\$ 3,000.00
16	Start-up	1 EA	\$ 2,000.00	\$ 2,000.00
Subtotal				\$ 258,000.00
Tax Rate (9.4%)				<u>\$ 24,252.00</u>
Subtotal				\$ 282,252.00
Engineering (5%), Construction Management (3%), Permits (3%)				\$ 31,047.72
Contingency (15%)				<u>\$ 42,337.80</u>
2017 TOTAL ESTIMATED CONSTRUCTION COST				<u>\$ 355,637.52</u>
2020 COST, INCLUDES 2.5% PER YEAR FOR INFLATION				<u><u>\$382,982.71</u></u>

Mt. View-Edgewood Water Company
DS-2 Distribution System Improvement
Demo Well 3 Pump and Building. Convert to Aquifer Monitoring Site

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	Mobilization, Cleanup, and Demobilization	Lump Sum	\$ 5,000.00	\$ 5,000.00
2	Erosion Control	Lump Sum	\$ 5,000.00	\$ 5,000.00
3	Asbestos Inspection	1 EA	\$ 1,000.00	\$ 1,000.00
4	Demo Existing Building and Dump Fees	Lump Sum	\$ 5,500.00	\$ 5,500.00
5	Pull Existing Pump	1 EA	\$ 3,000.00	\$ 3,000.00
6	Modify Well Head	1 EA	\$ 7,500.00	\$ 7,500.00
7	Backfill and Concrete Pad	1 EA	\$ 10,000.00	\$ 10,000.00
8	SCADA Modifications and Programing	1 EA	\$ 5,000.00	\$ 5,000.00
9	Relocate Second Service to 2804 - 103rd Ave E	1 EA	\$ 3,000.00	\$ 3,000.00
10	Abandon 4" Valve on 103rd Ave E	1 EA	\$ 5,500.00	\$ 5,500.00
Subtotal				\$ 50,500.00
Tax Rate (9.4%)				<u>\$ 4,747.00</u>
Subtotal				\$ 55,247.00
Engineering (5%), Construction Management (3%), Permits (5%)				\$ 7,182.11
Contingency (10%)				<u>\$ 5,524.70</u>
2017 TOTAL ESTIMATED CONSTRUCTION COST				<u>\$ 67,953.81</u>
2020 COST, INCLUDES 2.5% PER YEAR FOR INFLATION				<u><u>\$73,178.82</u></u>

Mt. View-Edgewood Water Company
DS-3 Distribution System Improvement
32nd Ave E between 110th St E and 112th St E and a portion of 110th St E

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	Mobilization, Cleanup, and Demobilization	Lump Sum	\$ 5,000.00	\$ 5,000.00
2	8-inch DI Water Main Including Fittings	1,278 LF	\$ 80.00	\$ 102,240.00
3	Locate Existing Utilities	Lump Sum	\$ 5,000.00	\$ 5,000.00
4	Erosion Control	Lump Sum	\$ 5,000.00	\$ 5,000.00
5	Additional Pipe Fittings	700 LB	\$ 3.75	\$ 2,625.00
6	8-inch Gate Valves Including Kits And Cans	10 EA	\$ 1,800.00	\$ 18,000.00
7	Fire Hydrant Assemblies	2 EA	\$ 7,500.00	\$ 15,000.00
8	1" Service Connections	5 EA	\$ 1,100.00	\$ 5,500.00
9	Sample Stations	1 EA	\$ 1,000.00	\$ 1,000.00
10	Saw Cutting	200 LF	\$ 3.00	\$ 600.00
11	Export Native Soils	1,100 TN	\$ 6.00	\$ 6,600.00
12	Crushed Backfill and Build-up Sholder	3,000 TN	\$ 25.00	\$ 75,000.00
13	Cold Mix	40 TN	\$ 150.00	\$ 6,000.00
14	Connections To Existing System	3 EA	\$ 4,500.00	\$ 13,500.00
15	Asphalt Patches and Restoration	300 TN	\$ 175.00	\$ 52,500.00
16	Traffic Control	Lump Sum	\$ 14,000.00	\$ 14,000.00
17	DOH Construction Completion Report	1 EA	\$ 5,000.00	\$ 5,000.00
18	Trench Safety Systems	Lump Sum	\$ 2,000.00	\$ 2,000.00
	Subtotal			\$ 334,565.00
	Tax Rate (9.4%)			\$ 31,449.11
	Subtotal			\$ 366,014.11
	Engineering (4%), Construction Management (3%), Permits (1%)			\$ 29,281.13
	Contingency (10%)			\$ 36,601.41
	2017 TOTAL ESTIMATED PROJECT COST			\$ 431,896.65
	2021 COST			\$476,733.09

Mt. View-Edgewood Water Company
DS-4 Distribution System Improvement
25% Of The Distribution Problem Spots, "Ugly List"

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	25% Of The Distribution Problem Spots, "Ugly List"	Lump Sum	\$ 274,563.00	\$ 289,562.00
2	Asphalt Patches and Restoration	75 TN	\$ 175.00	\$ 13,125.00
3	City of Edgewood Permits (5%)			\$ 14,478.10
	Subtotal			\$ 317,165.10
	Tax Rate (9.4%)			\$ 29,813.52
				\$ 346,978.62
	2017 TOTAL ESTIMATED PROJECT COST			\$ 346,978.62
	2022 COST			\$392,574.46

Mt. View-Edgewood Water Company
DS-5 Distribution System Improvement
25% Of The Distribution Problem Spots, "Ugly List"

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	25% Of The Distribution Problem Spots, "Ugly List"	Lump Sum	\$ 274,563.00	\$ 289,562.00
2	Asphalt Patches and Restoration	75 TN	\$ 175.00	\$ 13,125.00
3	City of Edgewood Permits (5%)			\$ 14,478.10
	Subtotal			\$ 317,165.10
	Tax Rate (9.4%)			\$ 29,813.52
	2017 TOTAL ESTIMATED PROJECT COST			<u>\$ 346,978.62</u>
	2023 COST			<u><u>\$402,388.82</u></u>

**Mt. View-Edgewood Water Company
DS-6 Distribution System Improvement
25% Of The Distribution Problem Spots, "Ugly List"**

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	25% Of The Distribution Problem Spots, "Ugly List"	Lump Sum	\$ 274,563.00	\$ 289,562.00
2	Asphalt Patches and Restoration	75 TN	\$ 175.00	\$ 13,125.00
3	Permits (5%)			\$ 14,478.10
	Subtotal			\$ 317,165.10
	Tax Rate (9.4%)			\$ 29,813.52
				<hr/>
	2017 TOTAL ESTIMATED PROJECT COST			\$ 346,978.62
				<hr/>
	2024 COST			\$412,448.54
				<hr/> <hr/>

Mt. View-Edgewood Water Company
DS-7 Distribution System Improvement
25% Of The Distribution Problem Spots, "Ugly List"

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	25% Of The Distribution Problem Spots, "Ugly List"	Lump Sum	\$ 274,563.00	\$ 289,562.00
2	Asphalt Patches and Restoration	75 TN	\$ 175.00	\$ 13,125.00
3	Permits (5%)			\$ 14,478.10
	Subtotal			\$ 317,165.10
	Tax Rate (9.4%)			\$ 29,813.52
				<hr/>
	2017 TOTAL ESTIMATED PROJECT COST			\$ 346,978.62
				<hr/>
	2025 COST			\$422,759.76
				<hr/> <hr/>

Mt. View-Edgewood Water Company
DS-8 Distribution System Improvement
24th St. E. and 125th Ave. Ct. E. Asbestos Pipe Replacement

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	Mobilization, Cleanup, and Demobilization	Lump Sum	\$ 9,000.00	\$ 9,000.00
2	8-inch DI Water Main Including Fittings	1,750 LF	\$ 80.00	\$ 140,000.00
3	Locate Existing Utilities	Lump Sum	\$ 5,000.00	\$ 5,000.00
4	Erosion Control	Lump Sum	\$ 4,000.00	\$ 4,000.00
5	Additional Pipe Fittings	600 LB	\$ 3.75	\$ 2,250.00
6	8-inch Gate Valves Including Kits And Cans	5 EA	\$ 1,800.00	\$ 9,000.00
7	6-inch Gate Valves Including Kits And Cans	3 EA	\$ 1,600.00	\$ 4,800.00
8	Fire Hydrant Assemblies	3 EA	\$ 3,800.00	\$ 11,400.00
9	1" Service Connections	31 EA	\$ 1,100.00	\$ 34,100.00
10	Sample Stations	1 EA	\$ 1,000.00	\$ 1,000.00
11	Saw Cutting	500 LF	\$ 3.00	\$ 1,500.00
12	Export Native Soils	850 TN	\$ 6.00	\$ 5,100.00
13	Crushed Backfill	850 TN	\$ 25.00	\$ 21,250.00
14	Cold Mix	30 TN	\$ 150.00	\$ 4,500.00
15	Connections To Existing System	4 EA	\$ 4,500.00	\$ 18,000.00
16	Asphalt Patches	100 TN	\$ 175.00	\$ 17,500.00
17	Traffic Control	Lump Sum	\$ 14,000.00	\$ 14,000.00
18	DOH Construction Completion Report	1 EA	\$ 5,000.00	\$ 5,000.00
19	Trench Safety Systems	Lump Sum	\$ 2,000.00	\$ 2,000.00
	Subtotal			\$ 309,400.00
	Tax Rate (9.4%)			\$ 29,083.60
	Subtotal			\$ 338,483.60
	Engineering (4%), Construction Management (3%), Permits (2%)			\$ 30,463.52
	Contingency (10%)			\$ 33,848.36
	2017 TOTAL ESTIMATED CONSTRUCTION COST			\$ 402,795.48
	2026 COST, INCLUDES 2.5% PER YEAR FOR INFLATION			\$ 503,036.36

Mt. View-Edgewood Water Company
DS-9 Distribution System Improvement
22nd St. Ct. E. and 23rd St E. Asbestos Pipe Replacement

<u>No.</u>	<u>Item</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>Amount</u>
1	Mobilization, Cleanup, and Demobilization	Lump Sum	\$ 12,000.00	\$ 12,000.00
2	6-inch DI Water Main Including Fittings	1,550 LF	\$ 80.00	\$ 124,000.00
3	Locate Existing Utilities	Lump Sum	\$ 5,000.00	\$ 5,000.00
4	Erosion Control	Lump Sum	\$ 4,000.00	\$ 4,000.00
5	Additional Pipe Fittings	600 LB	\$ 3.75	\$ 2,250.00
6	6-inch Gate Valves Including Kits And Cans	4 EA	\$ 1,600.00	\$ 6,400.00
7	Fire Hydrant Assemblies	2 EA	\$ 3,800.00	\$ 7,600.00
8	1" Service Connections	18 EA	\$ 1,100.00	\$ 19,800.00
9	Sample Stations	1 EA	\$ 1,000.00	\$ 1,000.00
10	Saw Cutting	400 LF	\$ 3.00	\$ 1,200.00
11	Export Native Soils	650 TN	\$ 6.00	\$ 3,900.00
12	Crushed Backfill	650 TN	\$ 25.00	\$ 16,250.00
13	Cold Mix	30 TN	\$ 150.00	\$ 4,500.00
14	Connections To Existing System	3 EA	\$ 4,500.00	\$ 13,500.00
15	Asphalt Patches	100 TN	\$ 175.00	\$ 17,500.00
16	Traffic Control	Lump Sum	\$ 10,000.00	\$ 10,000.00
17	DOH Construction Completion Report	1 EA	\$ 5,000.00	\$ 5,000.00
18	Trench Safety Systems	Lump Sum	\$ 2,000.00	\$ 2,000.00
	Subtotal			\$ 255,900.00
	Tax Rate (9.4%)			\$ 24,054.60
	Subtotal			\$ 279,954.60
	Engineering (4%), Construction Management (3%), Permits (2%)			\$ 25,195.91
	Contingency (10%)			\$ 27,995.46
	2017 TOTAL ESTIMATED CONSTRUCTION COST			\$ 333,145.97
	2027 COST, INCLUDES 2.5% PER YEAR FOR INFLATION			\$ 426,455.01

Appendix L
Distribution Problem Spots
Ugly List

Distribution System Problem Spots (Ugly List)	Parts, Labor, and Tax
<u>Map 1</u>	
2 - Replace 2" on 108 th Ave E with 350' of 4" and 6 services	\$ 59,500.00
2 - Abandon meter between services to 624 – 8 th St E and 710 – 8 th St E (on 8th St)	\$ 600.00
<u>Map 2</u>	
2 - Remove valve 2-V-7 corner of 4th St E and 117th Ave E	\$ 1,500.00
<u>Map 7</u>	
3 - Replace 1" west of 1205 – 108 th Ave E with 600' of 8" Ductile and 4 services	\$ 96,000.00
<u>Map 9</u>	
2 - Abandon extra service to 1609 - 106th Ave Ct E, Corp is under roadway	\$ 2,500.00
<u>Map 14</u>	
3 - Replace 1" plastic on 125 th Ave Ct E, possible future loop to the South	\$ 42,500.00
<u>Map 15</u>	
2 - Abandon valve 15-V-4 to Edgemont Park. Shown on map but unable to locate.	\$ 2,500.00
<u>Map 16</u>	
2 - Abandon 4" and tie service to 2415 – 106 th to existing 6"	\$ 3,000.00
2 – 10915 – 25 th St Replace blow-off valve, handle is missing, 8 feet deep!	\$ 3,500.00
<u>Map 17</u>	
2 - Replace 2" with two long services to 9511 & 9515 – 31 st St Ct E	\$ 2,500.00
2 - Abandon valve 17-V-12 at 29 th St E and 100 th Ave E	\$ 2,500.00
<u>Map 18</u>	
2 - Replace 2" PVC at 3021 – 87 th Ave Ct E with 80' of 4" ductile and 5 services	\$ 10,000.00
<u>Map 19</u>	
2 - Abandon 2" along 84th Ave Ct E and tie over 6 services	\$ 11,000.00
2 - Replace 6 galv long services on 29th and 30th off 86th Ave E	\$ 7,000.00
<u>Map 20</u>	
3 - Remove abandoned hydrant and plug valve 20-H-V-3 west of 8803 – 33 rd St E	\$ 1,600.00
2 - Raise hydrant at 3176 – 90 th Ave Ct E	\$ 1,200.00
<u>Map 21</u>	
2 - Abandon extra service to 3605 - 96th Ave E	\$ 300.00
<u>Map 22</u>	
3 - Locate and remove valve 22V-29 at 36 th St E and Chrisella E	\$ 2,500.00
2 - Remove valve 22-V-24 and abandon main stubs (10424 - 36th St E)	\$ 2,500.00
3 - Remove service to old School Property at 36 th St E and Meridian	\$ 300.00

Distribution System Problem Spots (Ugly List)	Parts, Labor, and Tax
Map 24	
2 - Remove valve 24-V-11 at Church on 35 th St E	\$2,000.00
3 - Replace 2" on 124 th Ave E with 680' of 4" Ductile and 7 services	\$ 102,500.00
Map 26	
2 - Replace 2" at end of 129 th Ave E with 130' of 4" Ductile and 4 services	\$ 21,000.00
Map 28	
2 - Replace 2" on 110 th Ave Ct E with 200' of 4" Ductile and 2 services	\$ 35,000.00
2 - Replace 2" east end of 45 th St E with 80' of 4" Ductile and 5 services (11126)	\$ 17,500.00
Map 29	
2 - Abandon valve 29-V-34 and 2" at 10405 - 43 rd St Ct E and tie over 3 services	\$ 5,500.00
2 - Replace 2" at end of 45 th St E with 170' of 4" Ductile and 6 services (10318)	\$ 28,000.00
3 - Replace 2" along 43rd St Ct E with 500' of 4" Ductile and 11 services	\$ 95,000.00
Map 30	
2 - Replace 2" at end of 42 nd St E, unknown length	\$ 20,000.00
2 - Abandon 1-1/2" and install service to 10026 - 43 rd St E	\$ 11,000.00
2 - Locate and remove valve 30-V-2 in Meridian	\$ 11,000.00
Map 32	
2 - Replace 2" along 48 th St Ct E with 300' of 4" Ductile and 4 services	\$ 55,000.00
2 - Replace 2" along 110 th Ave Ct E with 230' of 4" Ductile and 6 services	\$ 39,750.00
Map 33	
2 - Move meter to duplexes on 115 th Ave E to Right of Way	\$ 2,500.00
2 - Investigate 2" on east end of Karshner, replace with 4" Ductile Iron Main	\$ 20,000.00
Map 34	
2 - Replace unknown amount of 2" west end of 56 th St E	\$ 12,500.00
2 - Replace 2" on 53 rd St Ct E with 600' of 4" Ductile and 4 services	\$ 75,000.00
2 - Replace 2" on 123 rd Ave E with 300' of 4" Ductile and 3 services	\$ 42,500.00
2 - Replace 2" on 122 nd Ave E with 150' of 4" Ductile and 5 services	\$ 27,000.00
Map 35	
2 - Replace 3" on 56 th St E with 700' of 4" Ductile and 8 services	\$ 110,000.00
2 - Replace 1" steel to 5610 and 5612 Edgewood Dr E	\$ 5,000.00
2 - Abandon valve 35-V-23 at 53rd St Ct E and Sumner Heights, possibly a 4"	\$ 2,500.00
Map 36	
2 - Replace 2" on 56th St Ct E with 600' of 4" Ductile and 7 services	\$ 105,000.00
City of Edgewood Permit Fees	\$ 60,000.00
October 2016 Total Estimated Cost	\$ 1,158,250.00
1 - URGENT	
2 - NON URGENT	
3 - COMPLETE DURING MAIN EXTENSION OR OTHER OPPORTUNITY	

Appendix M

Interties

RECEIVED

JUN 04 2010

PUBLIC WORKS / *AK*
MAINTENANCE & OPERATIONS



STATE OF WASHINGTON

DEPARTMENT OF HEALTH

19000 1st Avenue, Suite 3000, 1000 1st Avenue, Olympia, WA 98501

June 2, 2010

GLEN BAKER
MILTON, CITY OF
1000 LAUREL ST
MILTON WA 98354

Subject: Milton, City of, ID# 54950
Pierce County
Intertie with Mountain View-Edgewood
Submittal # 10-0406

Dear Mr. Baker:

The intertie project report for the above project received in this office on April 9, 2010 has been reviewed and in accordance with the provisions of WAC 246-290 is **APPROVED**. The approval issued herein is based on conformance with current standards outlined in WAC 246-290, effective January 4, 2010. Future changes in the rules may be more stringent and require facility modification or corrective action.

The intertie with Mountain View-Edgewood (DOH ID # 56820) is classified as Source S09 for your water system and will be classified as a seasonal intertie. The approved intertie capacity is 500 gpm.

This project has been reviewed as a Group A water system project submittal in accordance with WAC 246-290.

This water system will remain approved to serve an unspecified number of equivalent residential units (ERUs).

Regulations establishing a schedule of fees for review of planning, engineering and construction documents have been adopted August 3, 2007 (WAC 246-290-990). An invoice for \$306 is enclosed. Please remit your complete payment in the form of a check or money order within thirty days of the date of this letter to: **DOH, Revenue Section, PO Box 1099, Olympia WA 98507-1099.**

Sincerely,

John Ryding, PE
WSDOH Regional Engineer

cc: Tacoma-Pierce County Health Department
Russ Porter, PE; Gray & Osborne -- Seattle
Amy Nielson, DOE SWRO
Katherine Brooks, Pierce County
Aniela Sidorska, DOH
Jennifer Kropack, DOH
Steve Hulsman, DOH



Appendix N
SEPA Checklist

DETERMINATION OF NON-SIGNIFICANCE

WAC 197-11-970 Determination of Nonsignificance (DNS)

Description of Proposal: 2017 Water System Plan

Proponent: Mt. View-Edgewood Water Company

Location of Proposal, including street address, if any:

Mt. View-Edgewood Water Company Service Area

Lead Agency: Washington State Department of Health

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available to the public on request.

- There is no comment period for this DNS.
- This is issued under 197-11-340(2); the lead agency will not act on this proposal for 15 days from the date below. Comments must be submitted by

Responsible Official: _____

Position/title: _____ **Phone:** _____

Address: _____

Signature: _____ **Date:** _____

(OPTIONAL)

- You may appeal this determination to (name) _____
at (location) _____
no later than (date) _____
by (method) _____

You should be prepared to make specific factual objections.
Contact _____ to read or ask about the procedures for SEPA appeals.

ENVIRONMENTAL CHECKLIST

I. INTRODUCTORY INFORMATION

A. BACKGROUND

1. Name of proposed project, if applicable:

2017 Water System Plan

2. Name of applicant:

Mt. View-Edgewood Water Company

3. Address and phone number of applicant and contact person:

Ms. Jacki Masters, General Manager
11610 32nd Street East
Edgewood, Washington 98372
(253) 606-4548

4. Date checklist prepared:

April 2017

5. Agency requesting checklist:

Washington State Department of Health

6. Proposed timing or schedule:

The Water System Plan proposes phased system improvements through the year 2036.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The purpose of the Plan is to provide an orderly schedule for needed improvements and expansion of the water system in order to conform to regulatory standards and provide service to existing and future water system customers. The Plan is part of the Water Company's normal planning process and will be updated approximately every six years, or as required. This Plan provides a 10-year and 20-year capital improvement plan (CIP). These projects will be implemented based on need and available financing.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

None

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.

This plan will require approval by the Washington Department of Health.

10. List any government approvals or permits that will be needed for your proposal, if known.

Local agency approval and permits will be obtained for each project implemented in the Water System Plan's Capital Improvement Program as needed.

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.

The proposal consists of the Water System plan for the Mt View-Edgewood Water Company. The Water Company owns a Group A Community water system that provides service to an area comprising the majority of the City of Edgewood. The service is generally located between the cities of Puyallup, Milton, Sumner and Pacific (See Attachment 1). The Water Company is a privately owned non-profit corporation that is governed by an elected seven member Board of Directors. The Water Company currently serves approximately 3,080 connections with a population approaching 8,000 people. Nearly 98% of the Water Company's connections serve residential customers

The Water System Plan provides a schedule of system improvements required to serve the Water Company's current and future customers. Major improvements include:

- Construction of a new reservoir and Booster Pump Station at the South Reservoir site.
- Well 8 Improvements. Replace pump assembly, control valves and building.
- Well 3 Conversion. Remove pump and building. Convert to aquifer monitoring site.
- Water Main Replacement DS-3. Replace approximately 1,650 lineal feet of existing 5 inch diameter water main along 32nd Street E. From 110th Avenue E. to 112th Avenue E., with new 8 inch diameter main.
- 122nd Avenue E. Water Main Replacement. Replace approximately 1,000 lineal feet of existing 6 inch diameter water main along 122nd Avenue E., between 35th Street E. and 32nd Street E., with new 10 inch diameter main.
- 122nd Avenue E. Water Main Replacement. Replace approximately 1,680 lineal feet of existing 6 inch diameter water main along 122nd Avenue E., between 32nd Street E. and 27th Street E., with new 10 inch diameter main.
- 122nd Avenue E. Water Main Replacement. Replace approximately 730 lineal feet of existing 6 inch diameter water main along 122nd Avenue E., between 2520 122nd Avenue E. and 24th Street E., with new 12 inch diameter main.
- Water Main Replacement DS-8. Replace approximately 1,750 lineal feet of 6 inch diameter asbestos cement water main along 24th Street E. and 125th Avenue Ct. E., between 122nd Avenue E. and 22nd Street Ct. E., with new 8 inch diameter main.
- Water Main Replacement DS-9. Replace approximately 1,550 lineal feet of 6 inch diameter water main along 24th Street E. and 23rd Street E., beginning 125th Avenue Ct. E., with new 6 inch diameter main.

- Other miscellaneous repairs, upgrades and improvements as identified in the Water System Plan.

The locations of the major improvement projects are shown in Attachment 2.

- 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 study area for this Plan is located in the north central portion of Pierce County; the Water Company's service area is located within Sections 10 and 15 and within a portion of Sections 2, 3, 8, 9, 11, 14, 16, 17, 22 and 23, Township 20 North, Range 4 East, W.M., Pierce County. The Water Company service area lies within the boundaries of the City of Edgewood, with the exception of 6 parcels in the City of Sumner.

II. ENVIRONMENTAL IMPACTS

1. EARTH

a. General description of the site (circle one):

Flat, Rolling, Hilly, steep slope, other:

b. What is the steepest slope on the site (approximate percent slope)?

The service area is moderately hilly with elevations ranging from 200 feet to 475 feet. There are steep slopes throughout the water service area leading down to the valley to the east and south.

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.

The classification of soils within the Water Company is provided by the Natural Resource Conservation Service (formerly known as the Soil Conservation Service). The major classifications of soils within the Water Company are sandy and silty loams.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

A small portion of the service area can be classified as having severe landslide hazards due to evidence of unstable soils. Construction of water system improvements are not planned in these areas.

- 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.**

At such time water system improvements are constructed, soil excavation, backfilling, and compaction may be required. Impacts will generally be localized to the immediate area surrounding such work. The approximate quantities and areas of filling and grading can not be determined until the improvements have been designed. The source of fill will be from a legal facility. The materials used will meet the requirements of the permitting agency.

- f. **Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

Minor increases in erosion may occur during construction of water system improvements, however these increases should be of short term duration. In addition, proper construction procedures should limit the potential for erosion.

- g. **About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

No changes in impervious surface coverage areas are proposed as a result of water main replacement projects. The new reservoir and booster station project will add impervious roof and site access surfacing. The percentage of the site coverage is unknown at this time, however, it should be less than allowed under the zoning code limitations for the project site.

- h. **Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

Timing of construction, use of temporary erosion and siltation control facilities and proper construction procedures, as required by the specific project, will minimize the erosion impacts.

2. AIR

- 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.**

Some increases in dust and equipment exhaust fumes would be expected as result of construction activities. The impacts on air quality will be of short term duration and should be minimal. No increases in emissions will result from the completed improvements.

- b. **Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

None to our knowledge.

- c. **Proposed measures to reduce or control emissions or other impacts to air, if any:**

None should be required.

3. **WATER**

a. **Surface:**

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.

There are several water bodies located within the Water Company's borders. These water bodies are fed by storm water runoff. Lake Chalet is located in a depression in west central Edgewood. Surprise Lake is located in the neighboring City of Milton, but an outlet creek enters Edgewood. In addition, several topographic depressions, locally known as "potholes", dot the landscape. The largest of these are the Edgewood Bowl, the 114th Avenue Pothole, the 122th Avenue Pothole, and the 108th Avenue Pothole. Three perennial creeks, Jovita Creek, Simons Creek, and Wapato Creek, flow through the City of Edgewood.

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.

Future improvements to the water system may require construction within 200 feet of the previously listed water bodies and/or require crossing of the previously listed creeks.

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.

The placement of fill or removal of dredge material from surface waters or wetlands is not expected.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

Surface water withdrawals or diversions will not be required.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The proposed water system improvements will not lie within a 100-year floodplain.

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.

Discharges of waste materials to surface waters will not be required for any future project proposed by the Water System Plan.

b. **Ground:**

1) Will ground water be withdrawn from a well for drinking water or other purposes? If so, give general description of the well, purposed use and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.

The Water Company is currently served potable water by several groundwater wells. No new wells are currently proposed however, the development of any new water

supply well will result in the withdrawal of groundwater. The expected withdrawal rate is unknown until a well site can be identified and evaluated.

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 is expected to serve.

The majority of the existing development within the Water Company's service area is served by individual on-site sewage disposal facilities. A portion of the properties fronting onto Meridian Avenue are served by a publicly owned sanitary sewer system.

c. Water Runoff (including storm water):

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.

Periodic routine flushing of the water distribution mains and the storage tanks will discharge unchlorinated/unfluoridated waters to the storm drainage system.

2) Could waste materials enter ground or surface waters? If so, generally describe.

See answer above.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Water main and storage tank flushing is considered standard practice for public water systems. Flushing operations are typically of very short duration. Provisions are made prior to the work to direct the waters to established drainage facilities. Impacts to the environment should be negligible.

4. PLANTS

a. Check or circle types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- Orchards, vineyards or other permanent crops
- wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other

- other types of vegetation

The Water Company's service area contains a mixture of the types of vegetation listed, however, the existing and proposed water mains are located within established public right-of-way and/or utility easements.

b. What kind and amount of vegetation will be removed or altered?

None likely. The majority of water system improvements will be constructed within the public right-of-way or dedicated private easements. Minor amounts of vegetation would be removed on a portion of the properties used for water main routing, storage facilities or pumping stations to accommodate those facilities.

c. List threatened or endangered species known to be on or near the site.

None known

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Construction of water system improvements will attempt to minimize disturbances to existing vegetation.

e. List all noxious weeds and invasive species known to be on or near the site.

None known.

5. ANIMALS

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:

birds: ducks, geese, songbirds, eagles, hawks
mammals: typical of region
fish: typical of region

b. List any threatened or endangered species known to be on or near the site.

None known

c. Is the site part of a migration route? If so, explain.

The entire Puget Sound basin is located within the Pacific Flyway.

d. Proposed measures to preserve or enhance wildlife, if any:

Any water system improvement project will be evaluated for impacts to wildlife. Appropriate measures will be taken to preserve wildlife.

e. List any invasive animal species known to be on or near the site.

None known.

6. ENERGY AND NATURAL RESOURCES

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.

Electrical energy will be required for normal operation of the proposed water system improvements. The energy will be used to run pumping equipment and to heat and light utility buildings.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No

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:

Energy efficient equipment and construction materials will be used where appropriate, in order to reduce energy usage.

7. ENVIRONMENTAL HEALTH

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.

No. In fact, the recommendations in the Plan are intended to help eliminate environmental health hazards by maintaining, and in some cases, enhancing the effectiveness of the public water system.

1) Describe any known or possible contamination at the site from present or past uses.

The existing and proposed water mains are located within established public right-of-way and private utility easements. No contaminated area were discovered during main installation. The Water Company's source wells, storage reservoirs and booster pump stations are situated on properties free from contamination.

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.

Natural gas pipelines are located within a portion of the same public right-of-way as the Water Company's water mains. Minimum horizontal and vertical separation between the two utilities are maintained to protect each other from damage and contamination.

3) Describe any toxic and 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.

None required or proposed.

4) Describe special emergency services that might be required.

Not required.

5) Proposed measures to reduce or control environmental health hazards, if any:

None required

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing noise in the area from traffic, property use, etc. would not affect the proposed water system improvements.

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, or production equipment, other)? Indicate what hours noise would come from the site.

Construction related activities may temporarily increase noise levels in the immediate vicinity of the work. The impacts will be of short term duration and occur only during normal working hours. Upon completion, the project will not generate any noise.

3) Proposed measures to reduce or control noise impacts, if any:

The proposed construction activity will comply with City of Edgewood and Pierce County regulations intended to minimize potential noise impacts. In addition, construction activity will be limited to daytime hours.

8. LAND AND SHORELINE USE

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.

The current land uses in the area are described in the City of Edgewood Comprehensive Plan. The proposed water system improvements could assist properties situated within the Water Company's service area in developing to the full potential allowed by the City of Edgewood's codes and ordinances by enhancing the capabilities and operational reliability of the system.

b. Has the 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? for agriculture? If so, describe.

There are areas of the Water Company's service area which have been used for agricultural purposes. None of the proposed water system improvements would change the use of these properties.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversized equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No.

c. Describe any structures on the site.

The Water Company's service area and surrounding areas have numerous residential and some small commercial structures typical for a rural community.

d. Will any structures be demolished? If so, what?

None by this action.

e. What is the current zoning classification of the site?

The zoning classifications within the service area as established in the City of Edgewood's Zoning Code are Single Family Residential, Mixed Residential, Mixed Use Residential, Commercial, Town Center, Public and a relatively small area designated as Industrial. A map showing zoning boundaries within the service area is included in the Plan.

f. What is the current comprehensive plan designation of the site?

The land uses in the area are described in the City of Edgewood Comprehensive Plan and the Zoning Code.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Portions of the service area have been classified as environmentally sensitive areas. These include floodways, wetlands, slopes over 40 percent and landslide hazard areas. Water system construction is not planned in any of these areas.

I. Approximately how many people would reside or work in the completed project?

None as a direct result of the listed projects.

j. Approximately how many people would the completed project displace?

None

k. Proposed measures to avoid or reduce displacement impacts, if any:

None required

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The Comprehensive Water System Plan is compatible with the City of Edgewood and the Pierce County Comprehensive Plans.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The proposed improvements will not impact any nearby agricultural or forest lands. The improvements are compatible with these land uses.

9. HOUSING

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

c. Proposed measures to reduce or control housing impacts, if any:

None required

10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No new structures are proposed.

b. What views in the immediate vicinity would be altered or obstructed?

None

c. Proposed measures to reduce or control aesthetic impacts, if any:

None required.

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None

- b. **Could light or glare from the finished project be a safety hazard or interfere with views?**

No

- c. **What existing off-site sources of light or glare may affect your proposal?**

None

- d. **Proposed measures to reduce or control light and glare impacts, if any:**

None required

12. **RECREATION**

- a. **What designated and informal recreational opportunities are in the immediate vicinity?**

Fishing, swimming, boating, biking and hiking

- b. **Would the proposed project displace any existing recreational uses? If so, describe.**

No

- c. **Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

None required

13. **HISTORIC AND CULTURAL PRESERVATION**

- 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 located on or near the site? If so, generally describe.**

None known. The existing and proposed water mains are located within established public rights-of-way and private utility improvements. No structures are constructed in these areas. The properties on which the Water Company's source wells, storage reservoirs and booster pumping stations are located do not contain any structures other than the utility related ones owned by the Water Company.

- 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.**

None have been discovered during instillation and construction of the existing improvements.

- 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.**

Historic maps, published archaeological survey results, historic preservation records, etc. will be researched during the design phase to determine the potential for encountering or impacting any cultural resources.

- 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.**

All proposed water system improvements work will be completed in accordance with all required permits. In the event that any archaeological data is discovered as a result of construction activities, the work will be stopped until an evaluation of the site can be made by the appropriate authorities to ensure the archaeological data is preserved.

14. TRANSPORTATION

- 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.**

The major streets and roads accessing the service area are shown in the Plan. The major access road to the area is Meridian Avenue.

- b. **Is 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?**

Pierce County Transit provides bus service along Meridian Avenue.

- c. **How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?**

The proposed water system improvement projects would not create or eliminate any parking spaces other than for two to three spaces that would be added for the parking of Water Company trucks to operate and maintain the proposed reservoir and booster pump station at the South Reservoir site.

- 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).**

No. Temporary traffic control or detours may be required for construction of certain improvements, however, delays will be limited to 5 minutes or less.

- e. **Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so generally describe.**

No

- 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 truck (such as commercial and**

nonpassenger vehicles). What data or transportation models were used to make these estimates?

None

- 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.**

Not permanently. No. Temporary traffic control or detours may be required for construction of certain improvements, however, delays will be limited to 5 minutes or less.

- h. Proposed measures to reduce or control transportation impacts, if any:**

Construction work will be conducted in accordance with City of Edgewood and Pierce County standards, as appropriate for the specific project, in order to minimize transportation impacts.

15. PUBLIC SERVICES

- 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.**

Not as a direct result of adoption or implementation of the Plan.

- b. Proposed measures to reduce or control direct impacts on public services, if any.**

None required

16. UTILITIES

- a. Identify utilities currently available at the site:**

Electricity, refuse service, water, individual septic systems, sanitary sewer service, cable TV and natural gas.

- b. 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.**

The Water System Plan proposes infrastructure improvements to the Water Company's potable water, storage, pumping and distribution facilities. Construction activities could include trench and foundation excavation, filling, grading, water main installation, and storage reservoir and relatively small utility building construction, depending on the project.

C. SIGNATURE

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: Jacki Masters

Name of Signee: JACKI MASTERS

Position and Agency/Organization: GENERAL MANAGER

Date Submitted: MAY 12, 2017

D. SUPPLEMENTAL SHEET FOR NON-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 proposed water system improvements might cause temporary increases in discharges to the water, emissions to the air, and the production of noise. These would be of short term duration coinciding with the construction of the proposed improvements. Appropriate control measures would be implemented during construction to minimize the impacts to the environment.

Proposed measures to avoid or reduce such increases are:

Construction activities related to the proposed improvements will comply with City of Edgewood and Pierce County regulations and codes to minimize potential impacts. Provisions will be made to take care of excess soils, surplus water, mud, silt, or other runoff pumped from excavations or resulting from other operations. Water Sprinkler trucks may be used during construction of the proposed improvements to control dust.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

Plants, animals, fish and marine life and not expected, to be affected by the proposed water system improvements.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

The water system improvements will be designed to minimize the effects on plant, animals, and fish. These designs will be dependent on the conditions of the particular improvements. In all cases, the designs will meet the requirements of the City of Edgewood, Pierce County, the Department of Fisheries, and other regulatory agencies.

3. How would the proposal be likely to deplete energy or natural resources?

The improvements proposed in the Water System Plan will improve the ability of the system to deliver safe and reliable potable water throughout its service area. Depletion of energy or natural resources will not result from the proposed improvements.

Proposed measures to protect or conserve energy and natural resources are:

None required

4. **How would the proposal be likely to use or affect environmentally sensitive areas or areas designed (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 proposed improvements would not affect any environmentally sensitive areas.

Proposed measures to protect such resources or to avoid or reduce impacts are:

None required

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 proposed improvements would not affect land and shoreline uses. The Water System Plan is compatible with the City of Edgewood and Pierce County Comprehensive Plans.

Proposed measures to avoid or reduce shoreline and land use impacts are:

None required

6. **How would the proposal be likely to increase demands on transportation or public services and utilities?**

The proposed improvements will not increase demands on transportation, public services or utilities.

Proposed measures to reduce or respond to such demands(s) are:

None required.

7. **Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.**

It is not anticipated that the proposed improvements will conflict with local, state, or federal laws or requirements for the protection of the environment. The Water System Plan is compatible with the City of Edgewood and Pierce County Comprehensive Plans.

Appendix O
D.O.H Water System Plan Submittal Form
Pierce County Submittal Forms
Correspondence



STATE OF WASHINGTON
DEPARTMENT OF HEALTH

NORTHWEST DRINKING WATER REGIONAL OPERATIONS
20425 72nd Avenue South, Suite 310, Kent Washington 98032-2388

May 19, 2016

JACKI MASTERS
GENERAL MANAGER
MOUNTAIN VIEW-EDGEWOOD WATER COMPANY
11610 32nd ST E
EDGEWOOD WA 98372



RE: Mountain View-Edgewood Water Company, ID #56820
Pierce County
Water System Plan - Pre-Plan Meeting Summary

Dear Ms. Jackie Masters:

Thank you for meeting with us on April 27, 2016 to discuss your Water System Plan (WSP) update. This letter summarizes the major elements of the meeting discussion and the main regulatory requirements. Follow each line of the chapters in the meeting agenda to cover all the details and the specific items below. This will be necessary, and provides an efficient path to gain approval.

Attendees: Mountain View Edgewood Water Company: Jackie Masters, and Mike Craig. Consultant: Joe Dominczyk, PE, Pierce County, Planning and Land Services (PALS): not in attendance (have a phone call with Dan Cardwell, Planner at 253-798-7039). DOH: John Ryding, PE, and Jennifer Kropack, Regional Planner. DOH Observer: Brietta Carter.

Summary:

Accomplishments since last plan:

- All capital projects were completed with a revenue bond – booster pump stations and increase in fire flow capabilities
- Radio reads and real time leakage data is a big improvement
- Mixers added to standpipes for circulation
- Last rate increase was in 2009

Goals for this plan are:

- A 10 Year Plan
- The three keys to keeping unchlorinated: Consumption, Circulation, Cooling
- New tank project – ½ Million gallon, Edgewood will file SEPA
- Refurbish Well #8 including new building
- Modify as growth brings new ideas to improve:
 - New development to have a meter bypass to be able to test meter accuracy



- Add new design standard for separate injection point for disinfection to be abandoned after completion
- Train more staff to be construction completion inspectors

Chapter 1 Description of Water System. Update as necessary.

Specifics

- Add the language about exempt wells from the Tacoma-Pierce County Health Department (TPCHD) ordinance if not already in your plan
- Provide signed local government consistency (LGC – new form on DOH website) statements from Edgewood and Pierce County (no service area change)

Chapter 2 Basic Planning Data. Identify the forecasted water demands for the consecutive 10 year planning period, and to year 20. Show forecasts with and without conservation savings.

Specifics

- Document by year annual production and consumption, and water distribution leakage volumes and percent
- Add to your water supply characteristics section, the fact that you will see no effect to your well levels until the 5 -10 year no rain scenario

Chapter 3 System Analysis. Identify the limiting factors of the water system (land use, source, storage, water rights, etc.) to determine the first limiting factor, second, etc.

Specifics

- Provide water right self-assessment (WRSA) forms in the plan for existing, 10 year planning period, and a 20 year estimate
- Update hydraulic model and provide any scenarios for new growth projections. Include new ½ million storage tank
- Provide a summary about the next actions needed to address any deficiencies found from your engineering analysis

Chapter 4 Water Use Efficiency (WUE) Program and Water Resource Analysis Update as necessary and include any changes.

Specifics

- Provide a water loss control action plan to maintain compliance with 10% DSL
- Reminder: DOH has electronic access for you to post notice of WUE goal setting **public forum** to our website, thus meeting the “beyond only customers” requirement (recommend posting 3 weeks in advance)

Chapter 5 Source Water Protection. Update your potential contaminant inventory. Identify residents in your one-year time-of-travel (TOT) and any businesses within the 10-year TOT. Provide a schedule for sending out educational letters.

Chapter 6 Operations and Maintenance.

Specifics

- Provide certification levels required and what certification level is in each position

- Include proposed maintenance schedule frequencies (e.g. annually, daily, etc.) for significant maintenance activities, such as valve exercising, flushing, reservoir inspections, and routine equipment checks
- Describe advisory procedures used when planned and controlled water outages affect a small portion of the distribution system and your internal processes
- Identify the coordination process between DOH, TPCHD and MVEWC for any water outages that may require a health advisory, and create a response plan for a water outage especially if any of your customers have County issued food permits
- Update the Coliform Monitoring Plan to include the Groundwater Rule (GWR) and the Revised Total Coliform Rule (RTCR) going into effect on April 1, 2016, and public notifications (PN's). Attached is the Level 1 Assessment for better understanding of the new EPA/DOH direction for your WSP appendix.
- Groundwater Rule (GWR) - If coliform hits occur in your distribution system, you will need to sample any active well within 24 hours
- Cross Connection Control (CCC) – Provide a summary; what to say in an executive summary or media press release about your program. Total numbers of devices installed, number left to install, compliance rates with testing, etc.

Chapter 7 Design Standards. Standard specifications and details may be submitted in PDF format if so desired.

Specifics

- Ensure that the most recent version of Washington DOT standards is referenced if using DOT standards
- Reminder: Your WSP main exemption means you keep on file any construction completion reports for any main extensions

Chapter 8 Capital Improvements. Provide a summary of any capital improvement projects for the next 10 year planning period and for the 20th year.

Specifics

- Any deficiencies identified from the hydraulic analysis

Chapter 9 Budgets. Provide a 10-year balanced budget for the 10 year planning period.

Chapter 10 Miscellaneous

Specifics

- Provide documentation of elected governing body approval of the plan prior to DOH's final approval (usually taken care after you see the DOH review comments on the WSP)
- Provide the new SEPA checklist and non-project action forms from ECY website. DOH will file.

Submittal Process:

- Complete a WSP Submittal Form. Identify on the form and provide adjacent purveyors notification that your plan is available for review.

- Provide DOH three hard copies of the plan – DOH formally submits one copy to Ecology.
- Provide one hard copy to Pierce County, four CD's, their time and materials form, and \$500 fee deposit.

Please keep me advised as to the submittal date of your plan if it changes from the stated goal of May 2017.

This letter portrays the outcome and agreed upon scope and content of your WSP as discussed in this meeting. Please contact me with any questions or clarifications about the planning requirements and John Ryding (253-395-6757) about engineering.

Sincerely,



Jennifer Kropack
Regional Planner
(253) 395-6769

E-Enclosures: (Revised Total Coliform Rule – Level 1 Assessment and Puyallup CCC program summary)

Ecc: Mike Craig, MVEWC
Joe Dominczyk, PE
Dan Cardwell, Planner, Pierce County, PALS
John Ryding, PE, and Brietta Carter, DOH
Tammy Hall, SWRO - Water Resources

Chapter	√ Required	Content Description	WSP Page #
Chapter 1		Description of Water System	
	(√)	Ownership and management	
	(√)	System history and background	
	(√)	Inventory of existing facilities	
	(√)	Related plans: Coordinated Water System Plan (CWSP), Comp./Community Information & Maps: Service area, retail service area, designated land use and zoning, future comprehensive plan request for changes to land use, & agreements for plan approval period.	
	(√)	Policies: Service area, SMA, conditions of service, annexation	
	(√)	Duty to serve* requirement: identify process, timeframes, conditions, appeals	
	(√)	Consistency from local planning* agency (LGC statement)	
		Basic Planning Data	
		Current water use: Population, customer classes, & ERUs	
Chapter 2	(√)	Demand forecast for plan approval period and a minimum of a 20 year period* for population, service connections & demand forecasts with & w/o expected efficiency savings	
	(√)	Monthly and annual production. Totals per source. Water Supply Characteristics & Demand Characteristics (see Ch.4). Add subtitles with description & discussion on effect of water use	
	(√)	Annual usage for water supplied to other systems	
	(?)	Annual usage by customer class.	
	(√)	Historical total water loss (DSL) – percent and volumes	
	(√)	>1000, seasonal variations in consumption by customer class	
		System Analysis	
	(√)	Capacity analysis with water right self assessment (3 forms DOH/ECY per MOU): Existing, plan approval period* and 20 th year projections	
	(√)	System design standards	
	(√)	Water quality analysis	
Chapter 3	(√)	System inventory, description and analysis	
	(√)	Source	
	(√)	Treatment	
	(√)	Storage	
	(√)	Distribution system/hydraulics	
	(√)	Summary of system deficiencies	
	(√)	Analysis of possible improvement projects	
		Water Use Efficiency Program and Water Resource Analysis	
	(√)	Water Use Efficiency Program: per WAC 246-290-810	
	(√)	>1,000 Estimate water savings from measures past six years. If DSL is > 10%, water loss control action plan required for compliance with a schedule & activities to minimize leakage in budget	
Chapter 4			

✓Required	Content Description	WSP Page #
(?)	Source of supply analysis and evaluation of supply alternatives	_____
(?)	Interties	_____
()	≥1,000 connections explore reclaimed water opportunities	_____
Chapter 5	Source Water Protection (Check One or Both)	_____
(✓)	Wellhead protection program	_____
()	Watershed control program	_____
Chapter 6	Operation and Maintenance Program	_____
(✓)	Water system management and personnel	_____
(✓)	Operator certification	_____
(✓)	Routine operating procedures and preventive maintenance	_____
(✓)	Water quality sampling procedures & program – Identify WQ PN Requirements	_____
(✓)	CMP plan/map. Add RTCR* and Ground Water Rule (GWR) narrative, actions	_____
(✓)	Emergency program, water shortage plan, service reliability per WAC 246-290-420	_____
(✓)	Address sanitary survey findings	_____
(✓)	Cross-connection control program – Summarize next actions to address	_____
(✓)	Recordkeeping, reporting, and customer complaint program	_____
(✓)	Summary of O&M deficiencies	_____
Chapter 7	Distribution Facilities Design and Construction Standards	_____
(?)	Standard construction specification for distribution mains	_____
Chapter 8	Improvement Program	_____
(✓)	Capital improvement schedule for the identified planning period and within a 20-year planning period at a minimum*	_____
Chapter 9	Financial Program	_____
(✓)	Balanced budget for the planning period* and demonstrating financial viability	_____
(✓)	Revenue and cash flow stability to fund capital and emergency improvements	_____
(✓)	Evaluation of affordable rate structure that encourages water demand efficiency. Budget line item if Water Loss Control Action Plan is required*	_____
Chapter 10	Miscellaneous Documents	_____
(✓)	Meeting of the consumers (documentation). Approval by EGB prior to DOH approval	_____
(✓)	County/Adjacent Utility Correspondence	_____
()	≥1000 connections - State Environmental Policy Act (SEPA) Determination	_____
(?)	Agreements (interfile, service area, franchise, etc.)	_____
(?)	Satellite Management Program	_____



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.

<u>MT. VIEW-EDGEWOOD WATER CO.</u> 1. Water System Name	<u>56820</u> PWS ID# or Owner ID#	<u>MT. VIEW-EDGEWOOD WATER CO.</u> Water Systems Owner's Name
<u>MIKE CRAIG</u> Contact Name for Utility	<u>253.863.7348</u> Phone Number	<u>FIELD MANAGER</u> Title
<u>11610 32ND/ ST. E.</u> Contact Address	<u>EDGEWOOD</u> City	<u>WA 98372</u> State Zip
<u>JOE DOMINCZYK</u> 2. Project Engineer <u>ECNW</u>	<u>253.952.7797</u> Phone Number	<u>WA 98354</u> State Zip
<u>811 PORTER WAY</u> Project Engineer Address	<u>MILTON</u> City	<u>253.863.0752</u> Billing Fax Number
3. Billing Contact Name (required if not the same as #1)	Billing Phone Number	Billing Address
	City	State Zip

4. How many services are presently connected to your system? 3099
5. Is your system expanding (circle what applies: seeking to extend service area or increase number of approved connections)? Yes No
6. If the number of services is expected to increase, how many new connections are proposed in the next six years? _____
7. If your system is private-for-profit, is it regulated by the State Utilities and Transportation Commission? N/A Yes No
8. Is the system located in a Critical Water Supply Service Area (i.e., have a Coordinated Water System Plan)? Yes No
9. Is your system a customer of a wholesale water system? Yes No
10. Will your system be pursuing additional water rights from the Department of Ecology in the next 20 years? Yes No
11. Is your system proposing a new intertie? Yes No
12. Do you have projects currently under review by us? Yes No
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? Yes No
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? Yes No
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? Yes No
16. Are you proposing a change in the place of use of your water right? Yes No
17. What is the last year of the plan approval period (the year the shortest WSP projection is made)? 2027

If answer to questions 7, 8, 11, 14 and/or 15 is "yes," list who you sent the WSP to: CITY OF EDGEWOOD, CITY OF MILTON, CITY OF FIPE, CITY OF PUYALLUP, CITY OF SUMNER, BECHAUX MUTUAL WATER, CHERRYWOOD MOBILE MANOR, PIERCE CO. HEALTH DEPT.

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).

Local Government Consistency Determination Form

Water System Name: Mt. View-Edgewood Water Co. PWS ID: 568203

Planning/Engineering Document Title: Watsr System Plan Plan Date: Draft May 2017

Local Government with Jurisdiction Conducting Review: City of Edgewood

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.

Local Government Consistency Statement	For use by water system	For use by local government
	Identify the page(s) in submittal	Yes or Not Applicable
a) The water system service area is consistent with the adopted <u>land use and zoning</u> within the service area.	Chapter 2	
b) The <u>growth projection</u> 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.	Chapter 2 Chapter 3	
c) For <u>cities and towns that provide water service</u> : All water service area policies of the city or town described in the plan conform to all relevant <u>utility service extension ordinances</u> .	N/A	
d) <u>Service area policies</u> 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.	Appendix B 3000 Series	
e) <u>Other relevant elements</u> 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.	Appendix I Chapter 8	

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.

Signature

Date

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).

Local Government Consistency Determination Form

Water System Name: Mt. View-Edgewood Water Co. PWS ID: 568203

Planning/Engineering Document Title: Watsr System Plan Plan Date: Draft May 2017

Local Government with Jurisdiction Conducting Review: TPCHD

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.

Local Government Consistency Statement	For use by water system	For use by local government
	Identify the page(s) in submittal	Yes or Not Applicable
a) The water system service area is consistent with the adopted <u>land use and zoning</u> within the service area.	Chapter 2	
b) The <u>growth projection</u> 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.	Chapter 2 Chapter 3	
c) For <u>cities and towns that provide water service</u> : All water service area policies of the city or town described in the plan conform to all relevant <u>utility service extension ordinances</u> .	N/A	
d) <u>Service area policies</u> 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.	Appendix B 3000 Series	
e) <u>Other relevant elements</u> 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.	Appendix I Chapter 8	

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.

Signature

Date

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).

Pierce County WSP Review Requirement Guidelines

Water System: Mt. View-Edgewood Water Co. Date: April 17, 2017

CWSP Requirements	Y/N	Pg #	Comments
Consistent with local growth management plans and development policies	Y	1-11 1-12	The WSP should not contain information or policies that are inconsistent with the CWSP or Pierce County Comprehensive Plan policies
Recognize all applicable water resource plans, water quality plans, and water pollution plans that have been adopted by units of local government	Y	1-11 1-12	Discuss any relevant plans including the Coordinated Water System Plan (CWSP), Comprehensive Plan, community plans, basin plans, watershed plans, etc.
<p>Contain accurate retail service area boundaries. (i.e. Does it match what Pierce County has in GIS and Standard Service Agreement?)</p> <ul style="list-style-type: none"> ➤ Service area matches what Pierce County has in GIS and Standard Service Agreement (SSA). ➤ Contains a service area map that reflects a boundary around the retail service area as well as other areas where the system supplies water and adjacent water purveyors. <p>Are there signed Standard Service Agreements that accurately reflect service area boundaries?</p>	Y	Appx D Fig 1-3	<ul style="list-style-type: none"> • Include copy of Standard Service Agreement (SSA) in WSP (see SSA). • If a change in service area is proposed, then a new SSA will be required. • Include a reference to all water service and water service area agreements, and copies of these documents (as well as any associated Exhibits) in the WSP (typically located in an Appendix). Examples include the signed SSA that the County maintains, any agreements between purveyors for interties and wholesale water, emergency service, etc. • If we have an SSA that you do not have, then this will be mentioned in the comment letter and a copy provided. • Include a service area map that reflects a boundary around the CWSP/retail service area as well as other areas where the system supplies water and adjacent water purveyors. WSA boundaries shall follow parcel boundaries and be located down the centerline of all roads. • Include a copy of the proposed water service area boundary in an electronic format. The data can be either a GIS shapefile or a CAD file. If it is a CAD file, the service area needs to be designated by polylines, not hatching, which can then be imported as layer into GIS. All data needs to be in the projected coordinates system: NAD_1983_HARN_StatePlane_Washington_South_FIPS_4602_Feet
Address land use - zoning (and since Municipal Water Law, identification of any county-known future plans for large water usage to occur within their service area).	Y	Chap 2	<ul style="list-style-type: none"> • Include a discussion of the County's Comprehensive Plan if any portion of the water service area is located within unincorporated Pierce County. • Include a copy of the land use/zoning map that shows the utilities service area. • If a portion of the water service area is within unincorporated Pierce County, the WSP land use

Pierce County WSP Review Requirement Guidelines

Water System: Mt. View-Edgewood Water Co. Date: April 17, 2017

CWSP Requirements	Y/N	Pg #	Comments
Per WAC 246-290-100(b) “Basic planning data including (ii) projected land use, future population, and water demand for consecutive six-year and final twenty year planning period within the WSA.”			<p>information must match the County’s zoning and the Urban Growth Area (UGA) line (if applicable). Provide enough detail in the WSP text to indicate the types of allowable uses in each zone and the associated residential densities. Discuss the County’s provisions for Accessory Dwelling Units.</p> <ul style="list-style-type: none"> • Include a discussion of the existing land uses. This information may be obtained from the Pierce County Assessors data, which assigns each parcel a code for existing land use (e.g. vacant, single family, mobile homes, multi-family, commercial, etc.). Use this information to help describe the existing conditions within the water service area. • Address any known proposed zoning changes that will occur within the next six year time period. For example, if the jurisdiction is planning to expand their urban growth area (UGA) in the next few years then provide this information in the WSP. This would include details on what the proposed zoning would be within the UGA expansion area and associated allowable uses and residential densities. • See example of Existing Land Use and Zoning Information.
Is there an approved Water Franchise Agreement for areas where work is proposed in County rights-of-way?	N/A	Appx D	<ul style="list-style-type: none"> • Include a discussion about the current County Franchise Agreement. • The Franchise Agreement area must be large enough to cover the entire water service area. • If an expansion of the water service area is proposed then a new Franchise Agreement will be required for this area if larger. • MTVE’s entire service area falls within the City of Edgewood and covered by a franchise granted by Ordinance 16-0485.
Contain utility policies of service and service extension ordinances for cities and towns.	Y	Appx B	Include the utility service policies and cities and towns must include service extension ordinances.
Include demand forecast and growth projections.	Y	Chap 2 Chap 8	<p>In the section on future land use, growth and demand include:</p> <ul style="list-style-type: none"> • Population growth forecasts for the next 6 years (for each year) and 20 years. <ul style="list-style-type: none"> ◊ Take into consideration population forecasts generated/adopted by local governments. These include projected population as identified by Puget

Pierce County WSP Review Requirement Guidelines

Water System: Mt. View-Edgewood Water Co. Date: April 17, 2017

CWSP Requirements	Y/N	Pg #	Comments
			<p>Sound Regional Council, Pierce County Countywide Planning Policies, Pierce County Comprehensive Plan, and the CWSP.</p> <p>◇ Contact Dan Cardwell, PALS, dcardwe@co.pierce.wa.us, if you have any questions regarding population growth projections.</p> <ul style="list-style-type: none"> • An analysis of the amount of buildable land within the service area based on existing land use and zoning (to determine amount of vacant and underdeveloped or redevelopable properties). This analysis should consider subdivision potential per the parcels zoning and the potential for Accessory Dwelling Units (ADUs). See attached Buildable Lands Analysis Guidance. • A map of existing customers, pending customers (i.e. those who have been issued a Water Availability Letter who have not yet connected), and future customers. • A graph that visually depicts the projected growth over the 6yr/20yr timeframe and the max number of ERUs able to serve based on the limiting factors (both water rights and infrastructure). Include a clear discussion of limiting factors and, if limiting factors will impact ability to serve projected growth, what corrective measures are anticipated (e.g. obtain more water rights or build a new storage tank).
Wellhead Protection Program consistent with local provisions for such programs	Y	App I	Include information and mapping on Wellhead Protection Areas.
Emergency Response Program	Y	Chap 6	WSP should include information on emergency response measures (see Water System Emergency Plan Checklist).
Meet the CWSP Design and Construction Standard requirements including adopted local fire protection standards (i.e. levels of fire flow to meet Pierce County code for entire service area in PCC 17C)	Y	Chap 7 Appx B Appx E Fig 3-3	Include brief discussion of compliance with Pierce County Codes (PCC) 19D.130, 17C.60.160 and 165.
Capital improvements needed to provide LOS in each land use designation. For additional water service, the WSP shall include planned	Y	Chap 8 Chap 9	Include a list of proposed capital improvements necessary to meet growth projections and funding options to pay for improvements. Purveyors are to design their systems to provide a level of service adequate for the expected land use of the area over the following 20-year time period.

Pierce County WSP Review Requirement Guidelines

Water System: Mt. View-Edgewood Water Co. Date: April 17, 2017

CWSP Requirements	Y/N	Pg #	Comments
capital facilities necessary to provide increased service.			
An inventory of potential sources and uses for reclaimed water.	N/A	N/A	<p>At a minimum address the following:</p> <p><u>Potential Sources</u></p> <ul style="list-style-type: none"> • Fish Hatcheries • Stormwater Impoundments • Sewage Treatment Plant Effluent • Industrial and Commercial Process and Cooling Water <p><u>Potential Uses or Users</u></p> <ul style="list-style-type: none"> • Industries • Nurseries • Golf Courses and other Landscape Irrigators • Artificial Recharge of Aquifers • Parks and Parkways • Agricultural Irrigation • Flushing of Sanitary Sewers • Fire Protection • Street Cleaning, Dust Control, and other Washing Applications
Existing and proposed interties.	Y	Fig 1-3 Appx M	Identify existing and proposed interties on the water system map.
Water District changes to the district legal boundary.	N/A	N/A	<ul style="list-style-type: none"> • Include information about any proposed expansions in a Water Districts legal boundaries and a map that compares the legal district boundary to the water service area. • Water District boundary changes must be sent to the Boundary Review Board and County Council per State law.

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Hon. Daryl Eidinger, Mayor
City of Edgewood
2224 104th Avenue East
Edgewood, WA 98372

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Mayor Eidinger,

I would like to notify you that the Water Company's 2017 Draft Water System Plan is ready for review by interested parties. Enclosed is a CD containing the plan. In accordance with WAC 246-290-100(7), the Water Company is transmitting this plan to all adjacent purveyors and local governments having jurisdiction, to assess consistency with ongoing and adopted planning efforts.

We anticipate that the Department of Health will complete its review of the plan in 90 days, at which point the plan will be finalized. I would appreciate receiving any comments you may have within that time period.

Please contact me at your convenience at 253-863-7348 with any questions.

Sincerely,



Jacki Masters
General Manager

Encl

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Mr. Arthur Gregg
City of Fife
3725 Pacific Highway East
Fife, WA 98424

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Mr. Gregg,

I would like to notify you that the Water Company's 2017 Draft Water System Plan is ready for review by interested parties. Enclosed is a CD containing the plan. In accordance with WAC 246-290-100(7), the Water Company is transmitting this plan to all adjacent purveyors and local governments having jurisdiction, to assess consistency with ongoing and adopted planning efforts.

We anticipate that the Department of Health will complete its review of the plan in 90 days, at which point the plan will be finalized. I would appreciate receiving any comments you may have within that time period.

Please contact me at your convenience at 253-863-7348 with any questions.

Sincerely,


Jacki Masters
General Manager

Encl

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Mr. Glen Baker
City of Milton
1000 Laurel Street
Milton, WA 98354

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Mr. Baker,

I would like to notify you that the Water Company's 2017 Draft Water System Plan is ready for review by interested parties. Enclosed is a CD containing the plan. In accordance with WAC 246-290-100(7), the Water Company is transmitting this plan to all adjacent purveyors and local governments having jurisdiction, to assess consistency with ongoing and adopted planning efforts.

We anticipate that the Department of Health will complete its review of the plan in 90 days, at which point the plan will be finalized. I would appreciate receiving any comments you may have within that time period.

Please contact me at your convenience at 253-863-7348 with any questions.

Sincerely,



Jacki Masters
General Manager

Encl

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Mr. Craig Hale
City of Puyallup
1100 39th Avenue South East
Puyallup, WA 98374

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Mr. Hale,

I would like to notify you that the Water Company's 2017 Draft Water System Plan is ready for review by interested parties. Enclosed is a CD containing the plan. In accordance with WAC 246-290-100(7), the Water Company is transmitting this plan to all adjacent purveyors and local governments having jurisdiction, to assess consistency with ongoing and adopted planning efforts.

We anticipate that the Department of Health will complete its review of the plan in 90 days, at which point the plan will be finalized. I would appreciate receiving any comments you may have within that time period.

Please contact me at your convenience at 253-863-7348 with any questions.

Sincerely,



Jacki Masters
General Manager

Encl

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Mr. Pat Clerget
City of Sumner
1104 Maple Street, Suite 260
Sumner, WA 98390

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Mr. Clerget,

I would like to notify you that the Water Company's 2017 Draft Water System Plan is ready for review by interested parties. Enclosed is a CD containing the plan. In accordance with WAC 246-290-100(7), the Water Company is transmitting this plan to all adjacent purveyors and local governments having jurisdiction to assess consistency with ongoing and adopted planning efforts.

We anticipate that the Department of Health will complete its review of the plan in 90 days, at which point the plan will be finalized. I would appreciate receiving any comments you may have within that time period.

Please contact me at your convenience at 253-863-7348 with any questions.

Sincerely,



Jacki Masters
General Manager

Encl

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Mr. Patrick Kongsli
Cherrywood Mobile Home Manor
8412 38th St E
Edgewood, WA 98371

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Mr. Kongsli,

I would like to notify you that the Water Company's 2017 Draft Water System Plan is ready for review. In accordance with WAC 246-290-100(7), the Water Company is making this plan available to all adjacent purveyors and local governments having jurisdiction so that they can assess consistency with ongoing and adopted planning efforts. Please contact our office at 253-863-7348 to have a copy of the plan sent to you on a CD.

We anticipate that the Department of Health will complete its review of the plan in 90 days, at which point the plan will be finalized. I would appreciate receiving any comments you may have within that time period.

Please contact me at your convenience at 253-863-7348 with any questions.

Sincerely,


Jacki Masters
General Manager

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Mr. Kevin Odgaard
Dechaux Mutual Water
PO Box 123
Port Orchard, WA 98366

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Kevin,

I would like to notify you that the Water Company's 2017 Draft Water System Plan is ready for review. In accordance with WAC 246-290-100(7), the Water Company is making this plan available to all adjacent purveyors and local governments having jurisdiction so that they can assess consistency with ongoing and adopted planning efforts. Please contact our office at 253-863-7348 to have a copy of the plan sent to you on a CD.

We anticipate that the Department of Health will complete its review of the plan in 90 days, at which point the plan will be finalized. I would appreciate receiving any comments you may have within that time period.

Please contact me at your convenience at 253-863-7348 with any questions.

Sincerely,



Jacki Masters
General Manager

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Mr Richard McGowan
Long Range Planner
Pierce County Planning and Land Services
2401 S 35th Street
Tacoma, WA 98402

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Mr. McGowan,

Enclosed are one hard copy and four CD copies of the draft of the Mt. View-Edgewood Water Company's Water System Plan. The plan has been submitted to DOH, adjacent purveyors, and local governments having jurisdiction for their review.

The Pierce County WSP Review Requirement Checklist, Emergency Plan Checklist, and Consistency Checklist are included in Appendix O of the plan. A CD containing the Company's Water Service Area is attached as well as the signed Time and Materials Account Information Form and deposit.

Please contact me at your convenience at 253-863-7348 with any questions.

Sincerely,



Jacki Masters
General Manager

Encl

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

May 8, 2017

Ms. Jennifer Kropak
Washington State Department of Health
Drinking Water Program
20435 – 72nd Avenue South, Suite 200
Kent, WA 98032

Subject: Water System Plan
Mt. View-Edgewood Water Company
Pierce County, Washington
ECNW #2161713

Dear Ms. Kropak,

Enclosed are three copies of the draft of the Mt. View-Edgewood Water Company's Water System Plan. The plan has been submitted to Pierce County, adjacent purveyors, and local governments having jurisdiction for their review.

Please contact me at your convenience at 253-863-7348 with any questions you or Mr. John Ryding may have.

Sincerely,


Jacki Masters
General Manager

Encl

cc: Mr. Daryl Eidinger, City of Edgewood
Mr. Arthur Gregg, City of Fife
Mr. Glen Baker, City of Milton
Mr. Craig Hale, City of Puyallup
Mr. Pat Clerget, City of Sumner
Mr. Patrick Kongsli, Cherrywood Mobile Home Manor
Mr. Kevin Odegard, Dechaux Mutual Water



STATE OF WASHINGTON
DEPARTMENT OF HEALTH

NORTHWEST DRINKING WATER REGIONAL OPERATIONS
20425 72nd Avenue South, Suite 310, Kent Washington 98032-2388

June 9, 2017

MIKE CRAIG
MOUNTAIN VIEW-EDGEWOOD WATER CO
11610 32ND ST E
EDGEWOOD WA 98372-2099

RE: MOUNTAIN VIEW-EDGEWOOD WATER CO ID# 56820
PIERCE COUNTY
WATER SYSTEM PLAN
SUBMITTAL #17-0513

Dear Mike Craig:

On May 15, 2017, our office received your documents and assigned them the submittal number 17-0513. Please use this number on all correspondence or additional submittals about this project.

When we have completed the review you will receive either an approval letter or a comment letter listing items that need to be addressed prior to an approval. We expect to review the submittal within 90 days.

There is a fee for our review; we will send you an invoice for payment. The base fee includes our initial review and the review of one resubmittal if needed. If additional reviews are needed, you will receive additional invoices. Payment of the fee does not guarantee or imply approval of your submittal. There is a link to our fee schedule on our website www.doh.wa.gov/ehp/dw under rules, WAC 246-290-990.

Thank you for giving us the opportunity to serve you. We look forward to working with you to ensure your community has safe and reliable drinking water at the tap. Please call me at (253) 395-6750 if you have any questions.

Sincerely,

Mary Rucksdashel
Northwest Drinking Water Operations

cc: JOE DOMINCZYK, P.E.

Notice: Any purveyor who begins construction on a drinking water project without all required approvals may be subject to penalty of up to \$5,000 per service connection (Chapter 70.119A RCW). The Department is under no obligation to accept or approve any component installed or constructed prior to approval. You may be required to expose system components for inspection and rebuild/replace if necessary to meet Department requirements.

Public Health - Always Working for a Safer and Healthier Washington





STATE OF WASHINGTON
DEPARTMENT OF HEALTH

NORTHWEST DRINKING WATER REGIONAL OPERATIONS
20425 72nd Avenue South, Suite 310, Kent Washington 98032-2388

June 9, 2017

TAMMY HALL
DEPARTMENT OF ECOLOGY - M/S 47775
PO BOX 47775
OLYMPIA WA 98504

Subject: Mountain View-Edgewood Water Co Water System, ID #56820
Pierce County
Water System Plan
Submittal #17-0513

Dear Tammy Hall:

Here is the water system plan for the Mountain View-Edgewood Water Co located in Pierce County. Please review and provide comments as required in the 2007 Memorandum of Understanding. Please focus comments on the elements identified in the *Joint Review Procedures for Planning and Engineering Documents*. Comments on other elements of the document are welcome, but a response from the water system on other elements is not required.

Please provide written comments to the water utility and copy our office within 30 days from the date of this letter. We will forward any changes to the document regarding water rights to you for review.

Please mail comments to:

Jennifer Kropack
20425 72nd Ave South, Suite 310
Kent WA 98032-2388

If I receive no response by the comment deadline, DOH will determine compliance based on information provided by the water system. If you have any questions, please contact me at (253) 395-6769. Thank you for your time and assistance.

Sincerely,

Jennifer Kropack
Regional Planner
NW Drinking Water Operations

Enclosures – Water System Plan & Submittal Form

cc: MIKE CRAIG
JOE DOMINCZYK, P.E.
Public Health - Always Working for a Safer and Healthier Washington



ENVIRONMENTAL CHECKLIST

I. INTRODUCTORY INFORMATION

A. BACKGROUND

1. Name of proposed project, if applicable:

2017 Water System Plan

2. Name of applicant:

Mt. View-Edgewood Water Company

3. Address and phone number of applicant and contact person:

Ms. Jacki Masters, General Manager
11610 32nd Street East
Edgewood, Washington 98372
(253) 606-4548

4. Date checklist prepared:

April 2017

5. Agency requesting checklist:

Washington State Department of Health

6. Proposed timing or schedule:

The Water System Plan proposes phased system improvements through the year 2036.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The purpose of the Plan is to provide an orderly schedule for needed improvements and expansion of the water system in order to conform to regulatory standards and provide service to existing and future water system customers. The Plan is part of the Water Company's normal planning process and will be updated approximately every six years, or as required. This Plan provides a 10-year and 20-year capital improvement plan (CIP). These projects will be implemented based on need and available financing.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

None

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.

This plan will require approval by the Washington Department of Health.

10. List any government approvals or permits that will be needed for your proposal, if known.

Local agency approval and permits will be obtained for each project implemented in the Water System Plan's Capital Improvement Program as needed.

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.

The proposal consists of the Water System plan for the Mt View-Edgewood Water Company. The Water Company owns a Group A Community water system that provides service to an area comprising the majority of the City of Edgewood. The service is generally located between the cities of Puyallup, Milton, Sumner and Pacific (See Attachment 1). The Water Company is a privately owned non-profit corporation that is governed by an elected seven member Board of Directors. The Water Company currently serves approximately 3,080 connections with a population approaching 8,000 people. Nearly 98% of the Water Company's connections serve residential customers

The Water System Plan provides a schedule of system improvements required to serve the Water Company's current and future customers. Major improvements include:

- Construction of a new reservoir and Booster Pump Station at the South Reservoir site.
- Well 8 Improvements. Replace pump assembly, control valves and building.
- Well 3 Conversion. Remove pump and building. Convert to aquifer monitoring site.
- Water Main Replacement DS-3. Replace approximately 1,650 lineal feet of existing 5 inch diameter water main along 32nd Street E. From 110th Avenue E. to 112th Avenue E., with new 8 inch diameter main.
- 122nd Avenue E. Water Main Replacement. Replace approximately 1,000 lineal feet of existing 6 inch diameter water main along 122nd Avenue E., between 35th Street E. and 32nd Street E., with new 10 inch diameter main.
- 122nd Avenue E. Water Main Replacement. Replace approximately 1,680 lineal feet of existing 6 inch diameter water main along 122nd Avenue E., between 32nd Street E. and 27th Street E., with new 10 inch diameter main.
- 122nd Avenue E. Water Main Replacement. Replace approximately 730 lineal feet of existing 6 inch diameter water main along 122nd Avenue E., between 2520 122nd Avenue E. and 24th Street E., with new 12 inch diameter main.
- Water Main Replacement DS-8. Replace approximately 1,750 lineal feet of 6 inch diameter asbestos cement water main along 24th Street E. and 125th Avenue Ct. E., between 122nd Avenue E. and 22nd Street Ct. E., with new 8 inch diameter main.
- Water Main Replacement DS-9. Replace approximately 1,550 lineal feet of 6 inch diameter water main along 24th Street E. and 23rd Street E., beginning 125th Avenue Ct. E., with new 6 inch diameter main.

- Other miscellaneous repairs, upgrades and improvements as identified in the Water System Plan.

The locations of the major improvement projects are shown in Attachment 2.

- 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 study area for this Plan is located in the north central portion of Pierce County; the Water Company's service area is located within Sections 10 and 15 and within a portion of Sections 2, 3, 8, 9, 11, 14, 16, 17, 22 and 23, Township 20 North, Range 4 East, W.M., Pierce County. The Water Company service area lies within the boundaries of the City of Edgewood, with the exception of 6 parcels in the City of Sumner.

II. ENVIRONMENTAL IMPACTS

1. EARTH

- a. **General description of the site (circle one):**

Flat, Rolling, Hilly, steep slope, other:

- b. **What is the steepest slope on the site (approximate percent slope)?**

The service area is moderately hilly with elevations ranging from 200 feet to 475 feet. There are steep slopes throughout the water service area leading down to the valley to the east and south.

- 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.**

The classification of soils within the Water Company is provided by the Natural Resource Conservation Service (formerly known as the Soil Conservation Service). The major classifications of soils within the Water Company are sandy and silty loams.

- d. **Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.**

A small portion of the service area can be classified as having severe landslide hazards due to evidence of unstable soils. Construction of water system improvements are not planned in these areas.

- 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.**

At such time water system improvements are constructed, soil excavation, backfilling, and compaction may be required. Impacts will generally be localized to the immediate area surrounding such work. The approximate quantities and areas of filling and grading can not be determined until the improvements have been designed. The source of fill will be from a legal facility. The materials used will meet the requirements of the permitting agency.

- f. **Could erosion occur as a result of clearing, construction, or use? If so, generally describe.**

Minor increases in erosion may occur during construction of water system improvements, however these increases should be of short term duration. In addition, proper construction procedures should limit the potential for erosion.

- g. **About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?**

No changes in impervious surface coverage areas are proposed as a result of water main replacement projects. The new reservoir and booster station project will add impervious roof and site access surfacing. The percentage of the site coverage is unknown at this time, however, it should be less than allowed under the zoning code limitations for the project site.

- h. **Proposed measures to reduce or control erosion, or other impacts to the earth, if any:**

Timing of construction, use of temporary erosion and siltation control facilities and proper construction procedures, as required by the specific project, will minimize the erosion impacts.

2. AIR

- 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.**

Some increases in dust and equipment exhaust fumes would be expected as result of construction activities. The impacts on air quality will be of short term duration and should be minimal. No increases in emissions will result from the completed improvements.

- b. **Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.**

None to our knowledge.

- c. **Proposed measures to reduce or control emissions or other impacts to air, if any:**

None should be required.

3. WATER

a. **Surface:**

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.

There are several water bodies located within the Water Company's borders. These water bodies are fed by storm water runoff. Lake Chalet is located in a depression in west central Edgewood. Surprise Lake is located in the neighboring City of Milton, but an outlet creek enters Edgewood. In addition, several topographic depressions, locally known as "potholes", dot the landscape. The largest of these are the Edgewood Bowl, the 114th Avenue Pothole, the 122th Avenue Pothole, and the 108th Avenue Pothole. Three perennial creeks, Jovita Creek, Simons Creek, and Wapato Creek, flow through the City of Edgewood.

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.

Future improvements to the water system may require construction within 200 feet of the previously listed water bodies and/or require crossing of the previously listed creeks.

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.

The placement of fill or removal of dredge material from surface waters or wetlands is not expected.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

Surface water withdrawals or diversions will not be required.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The proposed water system improvements will not lie within a 100-year floodplain.

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.

Discharges of waste materials to surface waters will not be required for any future project proposed by the Water System Plan.

b. **Ground:**

1) Will ground water be withdrawn from a well for drinking water or other purposes? If so, give general description of the well, purposed use and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give a general description, purpose, and approximate quantities if known.

The Water Company is currently served potable water by several groundwater wells. No new wells are currently proposed however, the development of any new water

supply well will result in the withdrawal of groundwater. The expected withdrawal rate is unknown until a well site can be identified and evaluated.

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 is expected to serve.

The majority of the existing development within the Water Company's service area is served by individual on-site sewage disposal facilities. A portion of the properties fronting onto Meridian Avenue are served by a publicly owned sanitary sewer system.

c. Water Runoff (including storm water):

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.

Periodic routine flushing of the water distribution mains and the storage tanks will discharge unchlorinated/unfluoridated waters to the storm drainage system.

2) Could waste materials enter ground or surface waters? If so, generally describe.

See answer above.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

No.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

Water main and storage tank flushing is considered standard practice for public water systems. Flushing operations are typically of very short duration. Provisions are made prior to the work to direct the waters to established drainage facilities. Impacts to the environment should be negligible.

4. PLANTS

a. Check or circle types of vegetation found on the site:

- deciduous tree: alder, maple, aspen, other
- evergreen tree: fir, cedar, pine, other
- shrubs
- grass
- pasture
- crop or grain
- Orchards, vineyards or other permanent crops
- wet soil plants: cattail, buttercup, bulrush, skunk cabbage, other
- water plants: water lily, eelgrass, milfoil, other
- other types of vegetation

The Water Company's service area contains a mixture of the types of vegetation listed, however, the existing and proposed water mains are located within established public right-of-way and/or utility easements.

b. What kind and amount of vegetation will be removed or altered?

None likely. The majority of water system improvements will be constructed within the public right-of-way or dedicated private easements. Minor amounts of vegetation would be removed on a portion of the properties used for water main routing, storage facilities or pumping stations to accommodate those facilities.

c. List threatened or endangered species known to be on or near the site.

None known

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Construction of water system improvements will attempt to minimize disturbances to existing vegetation.

e. List all noxious weeds and invasive species known to be on or near the site.

None known.

5. ANIMALS

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:

birds: ducks, geese, songbirds, eagles, hawks
mammals: typical of region
fish: typical of region

b. List any threatened or endangered species known to be on or near the site.

None known

- c. **Is the site part of a migration route? If so, explain.**

The entire Puget Sound basin is located within the Pacific Flyway.

- d. **Proposed measures to preserve or enhance wildlife, if any:**

Any water system improvement project will be evaluated for impacts to wildlife. Appropriate measures will be taken to preserve wildlife.

- e. **List any invasive animal species known to be on or near the site.**

None known.

6. ENERGY AND NATURAL RESOURCES

- 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.**

Electrical energy will be required for normal operation of the proposed water system improvements. The energy will be used to run pumping equipment and to heat and light utility buildings.

- b. **Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.**

No

- 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:**

Energy efficient equipment and construction materials will be used where appropriate, in order to reduce energy usage.

7. ENVIRONMENTAL HEALTH

- 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.**

No. In fact, the recommendations in the Plan are intended to help eliminate environmental health hazards by maintaining, and in some cases, enhancing the effectiveness of the public water system.

- 1) **Describe any known or possible contamination at the site from present or past uses.**

The existing and proposed water mains are located within established public right-of-way and private utility easements. No contaminated area were discovered during main installation. The Water Company's source wells, storage reservoirs and booster pump stations are situated on properties free from contamination.

- 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.**

Natural gas pipelines are located within a portion of the same public right-of-way as the Water Company's water mains. Minimum horizontal and vertical separation between the two utilities are maintained to protect each other from damage and contamination.

3) Describe any toxic and 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.

None required or proposed.

4) Describe special emergency services that might be required.

Not required.

5) Proposed measures to reduce or control environmental health hazards, if any:

None required

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Existing noise in the area from traffic, property use, etc. would not affect the proposed water system improvements.

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, or production equipment, other)? Indicate what hours noise would come from the site.

Construction related activities may temporarily increase noise levels in the immediate vicinity of the work. The impacts will be of short term duration and occur only during normal working hours. Upon completion, the project will not generate any noise.

3) Proposed measures to reduce or control noise impacts, if any:

The proposed construction activity will comply with City of Edgewood and Pierce County regulations intended to minimize potential noise impacts. In addition, construction activity will be limited to daytime hours.

8. LAND AND SHORELINE USE

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.

The current land uses in the area are described in the City of Edgewood Comprehensive Plan. The proposed water system improvements could assist properties situated within the Water Company's service area in developing to the full potential allowed by the City of Edgewood's codes and ordinances by enhancing the capabilities and operational reliability of the system.

b. Has the 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? for agriculture? If so, describe.

There are areas of the Water Company's service area which have been used for agricultural purposes. None of the proposed water system improvements would change the use of these properties.

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:

No.

c. Describe any structures on the site.

The Water Company's service area and surrounding areas have numerous residential and some small commercial structures typical for a rural community.

d. Will any structures be demolished? If so, what?

None by this action.

e. What is the current zoning classification of the site?

The zoning classifications within the service area as established in the City of Edgewood's Zoning Code are Single Family Residential, Mixed Residential, Mixed Use Residential, Commercial, Town Center, Public and a relatively small area designated as Industrial. A map showing zoning boundaries within the service area is included in the Plan.

f. What is the current comprehensive plan designation of the site?

The land uses in the area are described in the City of Edgewood Comprehensive Plan and the Zoning Code.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

Portions of the service area have been classified as environmentally sensitive areas. These include floodways, wetlands, slopes over 40 percent and landslide hazard areas. Water system construction is not planned in any of these areas.

i. Approximately how many people would reside or work in the completed project?

None as a direct result of the listed projects.

j. Approximately how many people would the completed project displace?

None

k. Proposed measures to avoid or reduce displacement impacts, if any:

None required

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The Comprehensive Water System Plan is compatible with the City of Edgewood and the Pierce County Comprehensive Plans.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:

The proposed improvements will not impact any nearby agricultural or forest lands. The improvements are compatible with these land uses.

9. HOUSING

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

c. Proposed measures to reduce or control housing impacts, if any:

None required

10. AESTHETICS

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

No new structures are proposed.

b. What views in the immediate vicinity would be altered or obstructed?

None

c. Proposed measures to reduce or control aesthetic impacts, if any:

None required.

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None

- b. **Could light or glare from the finished project be a safety hazard or interfere with views?**

No

- c. **What existing off-site sources of light or glare may affect your proposal?**

None

- d. **Proposed measures to reduce or control light and glare impacts, if any:**

None required

12. **RECREATION**

- a. **What designated and informal recreational opportunities are in the immediate vicinity?**

Fishing, swimming, boating, biking and hiking

- b. **Would the proposed project displace any existing recreational uses? If so, describe.**

No

- c. **Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:**

None required

13. **HISTORIC AND CULTURAL PRESERVATION**

- 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 located on or near the site? If so, generally describe.**

None known. The existing and proposed water mains are located within established public rights-of-way and private utility improvements. No structures are constructed in these areas. The properties on which the Water Company's source wells, storage reservoirs and booster pumping stations are located do not contain any structures other than the utility related ones owned by the Water Company.

- 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.**

None have been discovered during installation and construction of the existing improvements.

- 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.**

Historic maps, published archaeological survey results, historic preservation records, etc. will be researched during the design phase to determine the potential for encountering or impacting any cultural resources.

- 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.**

All proposed water system improvements work will be completed in accordance with all required permits. In the event that any archaeological data is discovered as a result of construction activities, the work will be stopped until an evaluation of the site can be made by the appropriate authorities to ensure the archaeological data is preserved.

14. **TRANSPORTATION**

- 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.**

The major streets and roads accessing the service area are shown in the Plan. The major access road to the area is Meridian Avenue.

- b. **Is 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?**

Pierce County Transit provides bus service along Meridian Avenue.

- c. **How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?**

The proposed water system improvement projects would not create or eliminate any parking spaces other than for two to three spaces that would be added for the parking of Water Company trucks to operate and maintain the proposed reservoir and booster pump station at the South Reservoir site.

- 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).**

No. Temporary traffic control or detours may be required for construction of certain improvements, however, delays will be limited to 5 minutes or less.

- e. **Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so generally describe.**

No

- 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 truck (such as commercial and**

nonpassenger vehicles). **What data or transportation models were used to make these estimates?**

None

- 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.**

Not permanently. No. Temporary traffic control or detours may be required for construction of certain improvements, however, delays will be limited to 5 minutes or less.

- h. Proposed measures to reduce or control transportation impacts, if any:**

Construction work will be conducted in accordance with City of Edgewood and Pierce County standards, as appropriate for the specific project, in order to minimize transportation impacts.

15. PUBLIC SERVICES

- 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.**

Not as a direct result of adoption or implementation of the Plan.

- b. Proposed measures to reduce or control direct impacts on public services, if any.**

None required

16. UTILITIES

- a. Identify utilities currently available at the site:**

Electricity, refuse service, water, individual septic systems, sanitary sewer service, cable TV and natural gas.

- b. 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.**

The Water System Plan proposes infrastructure improvements to the Water Company's potable water, storage, pumping and distribution facilities. Construction activities could include trench and foundation excavation, filling, grading, water main installation, and storage reservoir and relatively small utility building construction, depending on the project.

C. SIGNATURE

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: Jacki Masters

Name of Signee: JACKI MASTERS

Position and Agency/Organization: GENERAL MANAGER

Date Submitted: MAY 15, 2017

D. SUPPLEMENTAL SHEET FOR NON-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 proposed water system improvements might cause temporary increases in discharges to the water, emissions to the air, and the production of noise. These would be of short term duration coinciding with the construction of the proposed improvements. Appropriate control measures would be implemented during construction to minimize the impacts to the environment.

Proposed measures to avoid or reduce such increases are:

Construction activities related to the proposed improvements will comply with City of Edgewood and Pierce County regulations and codes to minimize potential impacts. Provisions will be made to take care of excess soils, surplus water, mud, silt, or other runoff pumped from excavations or resulting from other operations. Water Sprinkler trucks may be used during construction of the proposed improvements to control dust.

- 2. How would the proposal be likely to affect plants, animals, fish, or marine life?**

Plants, animals, fish and marine life are not expected, to be affected by the proposed water system improvements.

Proposed measures to protect or conserve plants, animals, fish, or marine life are:

The water system improvements will be designed to minimize the effects on plant, animals, and fish. These designs will be dependent on the conditions of the particular improvements. In all cases, the designs will meet the requirements of the City of Edgewood, Pierce County, the Department of Fisheries, and other regulatory agencies.

- 3. How would the proposal be likely to deplete energy or natural resources?**

The improvements proposed in the Water System Plan will improve the ability of the system to deliver safe and reliable potable water throughout its service area. Depletion of energy or natural resources will not result from the proposed improvements.

Proposed measures to protect or conserve energy and natural resources are:

None required

4. **How would the proposal be likely to use or affect environmentally sensitive areas or areas designed (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 proposed improvements would not affect any environmentally sensitive areas.

Proposed measures to protect such resources or to avoid or reduce impacts are:

None required

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 proposed improvements would not affect land and shoreline uses. The Water System Plan is compatible with the City of Edgewood and Pierce County Comprehensive Plans.

Proposed measures to avoid or reduce shoreline and land use impacts are:

None required

6. **How would the proposal be likely to increase demands on transportation or public services and utilities?**

The proposed improvements will not increase demands on transportation, public services or utilities.

Proposed measures to reduce or respond to such demands(s) are:

None required.

7. **Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.**

It is not anticipated that the proposed improvements will conflict with local, state, or federal laws or requirements for the protection of the environment. The Water System Plan is compatible with the City of Edgewood and Pierce County Comprehensive Plans.



STATE OF WASHINGTON
DEPARTMENT OF HEALTH

NORTHWEST DRINKING WATER REGIONAL OPERATIONS
20425 72nd Avenue South, Suite 310, Kent Washington 98032-2388

July 13, 2017

JACKI MASTERS, GENERAL MANAGER
MOUNTAIN VIEW-EDGEWOOD WATER CO
11610 32ND ST E
EDGEWOOD, WA 983722099

RE: Mountain View-Edgewood Water Company, ID # 56820
Pierce County
Water System Plan
Determination of Non-Significance &
Notification of Electronic Submittal to SEPA Unit
Submittal # 17-0513

Dear Ms. Masters:

This is to advise you that the Department of Health, Office of Drinking Water has issued a Determination of Non-Significance for the following proposal:

MOUNTAIN VIEW-EDGEWOOD WATER COMPANY
Water System Plan 2017 Update

This Determination fulfills the requirements of the State Environmental Policy Act. If you have any questions on this decision or the appeal process, please call me. Enclosed is a signed Determination of Non-Significance. I have provided the DNS, the environmental checklist, and the non project action review form electronically to the SEPA Unit on July 12, 2017. The comment period ends on July 27, 2017.

Sincerely,

A handwritten signature in blue ink that reads "Jennifer Kropack".

Jennifer Kropack
Regional Planner
(253) 395-6769

Enclosure: Copy of Signed DNS

Cc: Aaron Nix, Acting PWD and Assistant City Administrator, City of Edgewood



WAC 197-11-970 - Determination of Nonsignificance (DNS).

DETERMINATION OF NONSIGNIFICANCE

Description of proposal: **Mountain View-Edgewood Water Company's 2017 Water System Plan**

Population and demand projections were made for the Mt. View-Edgewood Water Company's service area. Existing facilities were evaluated to determine the water system's ability to provide adequate water service to the current and future population. A capital improvement plan and schedule is included to show how they plan to meet existing and projected water system needs.

Proponent: **Mountain View-Edgewood Water Company** (located in Pierce County)

Location of proposal, including street address, if any: 11610 32nd ST E, Edgewood, WA 98372-2099

Lead agency: Department of Health, Office of Drinking Water

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. 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 and other information on file with the lead agency. This information is available to the public on request.

There is no comment period for this DNS.

This DNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.

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 below.

You may appeal this Determination to the Department of Health, Office of Drinking Water by July ~~21~~²⁷, 2017.

ATTN: Jennifer Kropack, Regional Planner, Northwest Regional Office, 20425 72ND AVE S, STE 310, Kent WA 98032-2388. You should be prepared to make specific factual objections. Contact: Jennifer Kropack at (253) 395-6769 if you have further questions.

Responsible Official: Garin Schrieve

Position/Title: Director

Phone: 360-236-3110

Mailing Address: POB 47822, Olympia, WA 98504-7822

Date: 7-12-17 Signature _____





2401 South 35th Street
Tacoma, Washington 98409-7460

July 17, 2017

Jacki Masters, General Manager
Mt. View-Edgewood Water Co.
11610 - 32nd Street East
Edgewood, WA 98372

Subject: **Mountain View-Edgewood Water System Plan (DOH ID# 568203)**

Dear Ms. Masters:

Thank you for the time and effort put toward the Coordinated Water System Plan (CWSP) process. We reviewed your plan dated May 2017, and find that all submittals are consistent with the County's Comprehensive Plan and CWSP. Attached is a signed Local Government Consistency Statement for your records.

If you have any questions, please contact me at rmcgowa@co.pierce.wa.us or 253-798-7121.

Sincerely,

Rich McGowan
Assistant Planner

RMG:cla

- C: Mike Craig, Mountain View-Edgewood Water Co., 11610-32nd St. E., Edgewood, WA 98372
- Jennifer Kropack, Washington State DOH, 20425-72nd Ave. S., Suite 310, Kent, WA 98032-2358
- Glen Baker, City of Milton, 1000 Laurel St., Milton, WA 98354
- Arthur Gregg, Fife Department of Public Works, 3725 Pacific Hwy. E., Fife, WA 98424
- Craig Hale, City of Puyallup, 1100-39th Ave. SE, Puyallup, WA 98374
- Patrick Kongslie, Cherrywood Mobile Home Manor, 8412-38th St. E., Edgewood, WA 98371
- Kevin Odegard, Dechaux Mutual Water, 7245 Bethel Burley Rd., Port Orchard, WA 98367
- Kelli Pinchak, Cherrywood Village Apartments, PO Box 65671, University Place, WA 98464
- Shaun Piper, City of Sumner, 1104 Maple St., Suite 260, Sumner, WA 98390
- Jim Schunke, City of Pacific, 100 3rd Ave. SE, Pacific, WA 98047
- Debbie Bailey, Pierce County Dept. of Emergency Management
- Brad Harp, Tacoma-Pierce County Health Department
- Warner Webb, Pierce County Fire Marshal

Local Government Consistency Determination Form

Water System Name: Mt.View-Edgewood PWS ID: 568203

Planning/Engineering Document Title: Water System Plan Plan Date: May 2017

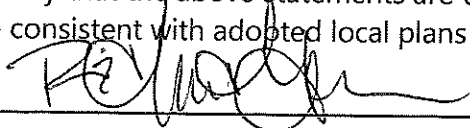
Local Government with Jurisdiction Conducting Review: Pierce County Planning & Public Works

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.

Local Government Consistency Statement	For use by water system	For use by local government
	Identify the page(s) in submittal	Yes or Not Applicable
a) The water system service area is consistent with the adopted <u>land use and zoning</u> within the service area.	1-14 thru 1-17	Yes
b) The <u>growth projection</u> 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.	2-11 thru 2-13	Yes
c) For <u>cities and towns that provide water service</u> : All water service area policies of the city or town described in the plan conform to all relevant <u>utility service extension ordinances</u> .	N/A	Not Applicable
d) <u>Service area policies</u> 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.	Appendix B 3000 Series	Yes
e) <u>Other relevant elements</u> 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.	Appendix I & Ch. 8	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.



Signature

7/14/2017

Date

Rich McGowan, Assistant Planner, Pierce County Planning & Public Works

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).



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 · Olympia, Washington 98504-7775 · (360) 407-6300
711 for Washington Relay Service · Persons with a speech disability can call 877-833-6341

July 27, 2017

Jennifer Kropack, Regional Planner
WA State Department of Health
Office of Drinking Water
PO Box 47822
Olympia, WA 98504-7822

Dear Ms. Kropack:

Thank you for the opportunity to comment on the determination of nonsignificance for the Mountain View-Edgewood Water Company's 2017 Water System Plan Project located at 11610 32nd Street East in Edgewood as proposed by Jacki Masters, Mountain View-Edgewood Water Company. The Department of Ecology (Ecology) reviewed the environmental checklist and has the following comment(s):

WATER QUALITY: Chris Montague-Breakwell (360) 407-6364

The following construction activities require coverage under the Construction Stormwater General Permit:

1. Clearing, grading and/or excavation that results in the disturbance of one or more acres **and** discharges stormwater to surface waters of the State; and
2. Clearing, grading and/or excavation on sites smaller than one acre that are part of a larger common plan of development or sale, if the common plan of development or sale will ultimately disturb one acre or more **and** discharge stormwater to surface waters of the State.
 - a) This includes forest practices (including, but not limited to, class IV conversions) that are part of a construction activity that will result in the disturbance of one or more acres, **and** discharge to surface waters of the State; and
3. Any size construction activity discharging stormwater to waters of the State that Ecology:
 - a) Determines to be a significant contributor of pollutants to waters of the State of Washington.
 - b) Reasonably expects to cause a violation of any water quality standard.

Jennifer Kropack, Regional Planner

July 27, 2017

Page 2

If there are known soil/ground water contaminants present on-site, additional information (including, but not limited to: temporary erosion and sediment control plans; stormwater pollution prevention plan; list of known contaminants with concentrations and depths found; a site map depicting the sample location(s); and additional studies/reports regarding contaminant(s)) will be required to be submitted.

You may apply online or obtain an application from Ecology's website at: <http://www.ecy.wa.gov/programs/wq/stormwater/construction/> - Application. Construction site operators must apply for a permit at least 60 days prior to discharging stormwater from construction activities and must submit it on or before the date of the first public notice.

Ecology's comments are based upon information provided by the lead agency. As such, they may not constitute an exhaustive list of the various authorizations that must be obtained or legal requirements that must be fulfilled in order to carry out the proposed action.

If you have any questions or would like to respond to these comments, please contact the appropriate reviewing staff listed above.

Department of Ecology
Southwest Regional Office

(SM:17-3679)

cc: Chris Montague-Breakwell, WQ
Jacki Masters, Mountain View-Edgewood Water Company (Proponent)



MT. VIEW-EDGEWOOD WATER COMPANY

11610 – 32ND STREET EAST

EDGEWOOD, WA 98372-2099

Phone: (253) 863-7348; Fax: (253) 863-0752

www.mfvewater.com

August 4, 2017

Jennifer Kropack, Regional Planner
WSDOH, Office of Drinking Water
PO Box 47822
Olympia, WA 98504-7822

Dear Jennifer,

Thank you for forwarding the WS DOE response to the determination of nonsignificance for the environmental checklist for the draft 2017 Water System Plan. The Field Manager, Mike Craig, and I have discussed each point raised in the response and have determined that none of the projects proposed in the Capital Projects section of the draft Plan fit the criteria outlined in DOE's letter.

The only project that could possibly be subject to any of the regulations cited would be the proposed new reservoir at our south reservoir site. However, the project is less than an acre and will not discharge into surface waters of the State nor is it a part of a larger common plan of development or sale. Therefore, this project would not require a Construction Stormwater General Permit.

Additionally, we have been in contact and will coordinate with the City of Edgewood who is the local authority for this project regarding this proposed work. I have attached that electronic exchange for your information.

Sincerely,

A handwritten signature in cursive script that reads "Jacki Masters".

Jacki Masters
General Manager

Hi Meghan,

No additional plans for either.

The existing Reservoirs were seismically retrofitted in 2012-2014. At this time we added seismic valves and FLEX-FEND expansion joints on all the piping.

Best Regards,

Mike Craig
Field Manager
Mt. View-Edgewood Water Company
2012 NRWA Best Water in the U.S.A.
mikec@mtvewater.com
mtvewater.com
Office 253-863-7348
Cell 253-606-4549

From: Meghan Mullen [<mailto:mmullen@herrerainc.com>]
Sent: Tuesday, July 25, 2017 11:08 AM
To: Mike Craig; Jacki Masters
Cc: Matt Fontaine; Jeremy Metzler (jeremy@cityofedgewood.org)
Subject: Re: reservoir drainage

Hi Mike,

Thanks for sharing this information about the planned drainage for the new Reservoir. Are there additional drainage plans for this new Reservoir or the existing Reservoirs at this site in case of an earthquake or other emergency, where flow is not controlled at 500 GPM?

Thank you,

Meghan

From: Mike Craig <MikeC@mtvewater.com>
Sent: Monday, June 26, 2017 1:44 PM
To: Meghan Mullen; Jacki Masters
Cc: Matt Fontaine; Jeremy Metzler (jeremy@cityofedgewood.org)
Subject: RE: reservoir drainage

Hi Meghan,

The new IMG Reservoir will be located at 12224 – 48th St E, just south of the two existing Reservoirs. The proposed size is 80 feet diameter and 30 feet tall. We plan on using DN Tanks to construct a prestressed concrete Reservoir.

We have an easement along the northern property line of 4817 Monta Vista Drive E. The drain line will be located on this easement and go from the Reservoir to the eastern side of Monta Vista. From this point the flow will head north to 48th St and tie into the storm.

The drain rate of the Reservoir will be limited to 500 GPM through a control valve.

We plan on selecting an engineering firm at the end of this year, design in 2018, construct and commission in 2019.

Best Regards,

Mike Craig
Field Manager
Mt. View-Edgewood Water Company
2012 NRWA Best Water in the U.S.A.
mikec@mtvewater.com
mtvewater.com
Office 253-863-7348
Cell 253-606-4549

From: Meghan Mullen [<mailto:mmullen@herrerainc.com>]
Sent: Monday, June 26, 2017 11:00 AM
To: Jacki Masters; Mike Craig
Cc: Matt Fontaine
Subject: reservoir drainage

Hello Jacki and Mike,

Jeremy Metzler from the City of Edgewood gave us your contact information. We are working with the City to identify projects to address potential water quality and flooding concerns. One potential project we are looking at is an emergency drainage route for the proposed reservoir at 48th and 122nd.

Has the Mountain View- Edgewood Water Company already considered an emergency drainage route for this location? Can you send us any info about the proposed facility, such as how much water will be stored?

Thank you,

Meghan Mullen
(206) 787-8239



STATE OF WASHINGTON
DEPARTMENT OF HEALTH

NORTHWEST DRINKING WATER REGIONAL OPERATIONS
20425 72nd Avenue South, Suite 310, Kent Washington 98032-2388

July 25, 2017

JACKI MASTERS, GENERAL MANAGER
MOUNTAIN VIEW-EDGEWOOD WATER CO
11610 32ND ST E
EDGEWOOD, WA 983722099

RE: Mountain View-Edgewood Water Company, ID # 56820
Pierce County
Water System Plan
Submittal # 17-0513

Dear Ms. Jacki Masters:

Thank you for submitting the draft Water System Plan (WSP) for the Mountain View-Edgewood Water Company on May 15, 2017. Upon review of the plan, we offer the following comments.

Planning Data and Water System Description

1. Figure 1-6, Page 1-6. Please add "retail" to this service area map and identify the corporate boundary of the City of Edgewood and what part of their UGA is in your service area.
2. Figure 1-2 and Page 2-11. Please add clarifying narrative about the unclaimed "white area" between City of Pacific and your service area. Is there any potential to expand here?
3. Provide signed local government consistency statements from Pierce County and the City of Edgewood.

System Demand, Analysis, and Water Right Self-Assessment

4. Hydraulic Model – Run 1. There are several nodes, especially J-495 and J-496, with pressures below 30 psi. Are there or will there ever be active service connections in the areas of these nodes? If so, how will these low pressures be addressed?
5. Hydraulic Model - Run 2. There was no input data for Run 2. Is there a concise summary of input data available for this scenario? There are several hydrants on dead end lines that cannot meet City of Edgewood fire flow standards. Is the local fire department aware of these hydrant limitations? Are there agreements to limiting the use of these hydrants in an emergency?

Operation & Management

6. Include procedures for localized distribution system pressure loss including health advisory distribution and customer and regulatory agency communication.
7. Coliform Monitoring Plan – Intertie Sampling Procedures. Refer to any intertie samples as Investigative not Routine. Routine implies they are compliance samples. In order to avoid raw water

Public Health - Always Working for a Safer and Healthier Washington



sampling in the event the purchasing system (City of Milton) has a positive routine sample you will need to coordinate your sampling so that there is data from your distribution system available from the same day as the positive routine sample. You may also wish to develop procedures so that adequate distribution system data (3 or 4 samples) is generated in the event of unusual events that could cause sampling by Milton outside of scheduled days.

8. Cross Connection Control. Per the 2016 pre-plan meeting, provide a narrative about what to say for a media press release about your program. General talking points to include are: resources, total numbers of devices installed, number left to install, compliance rates with testing and next actions.

Other

9. Provide any comments from adjacent utilities regarding your plan update.
10. Provide a signed resolution adopting the plan by the governing body.
11. DOH has filed SEPA on your behalf. Comment periods ends July 27, 2017.

We hope that you have found these comments to be clear, constructive and helpful in the development of your final WSP. We ask that you submit the revised WSP pages, maps, etc. (two copies) on or before October 25 2017. In order to expedite the review of your revised submittal, please include a cover letter summarizing how each of the above comments was addressed and where each response is located (i.e., page numbers, Appendices, etc.).

Regulations establishing a schedule for fees for review of planning, engineering and construction documents have been adopted (WAC 246-290-990). Please note that we have included an invoice in the amount of **\$3,705.00** for the review of the Water System Plan. This fee covers our cost for review of the initial submittal, plus the review of one revised document. Please remit your 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 send payment to: **DOH, Revenue Section, and P.O. Box 1099, Olympia, WA 98507-1099.**

Thank you again for submitting your plan for our review.

Sincerely,



Jennifer Kropack
Regional Planner
(253) 395-6769



John Ryding
Regional Engineer
(253) 395-6757

Enclosure: Invoice

cc: Mike Craig, MTVEWC, Field Manager
Joe Dominczyk, PE, ECNW
Rich McGowan, Pierce County Planning and Land Services
Brad Harp, Tacoma-Pierce County Health Department
Tammy Hall, Ecology, SWRO

Local Government Consistency Determination Form

Water System Name: Mt. View-Edgewood Water Co. PWS ID: 568203

Planning/Engineering Document Title: Watsr System Plan Plan Date: Draft May 2017

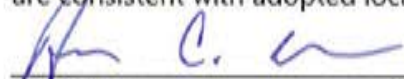
Local Government with Jurisdiction Conducting Review: City of Edgewood

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.

Local Government Consistency Statement	For use by water system	For use by local government
	Identify the page(s) in submittal	Yes or Not Applicable
a) The water system service area is consistent with the adopted <u>land use and zoning</u> within the service area.	Chapter 2	YES
b) The <u>growth projection</u> 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.	Chapter 2 Chapter 3	YES
c) For <u>cities and towns that provide water service</u> ; All water service area policies of the city or town described in the plan conform to all relevant <u>utility service extension ordinances</u> .	N/A	YES
d) <u>Service area policies</u> 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.	Appendix B 3000 Series	YES
e) <u>Other relevant elements</u> 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.	Appendix I Chapter 8	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.


Signature

9/13/2017
Date

Aaron C. Nix
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.

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Awaiting Board Approval

The meeting was called to order by President Don Nelson at 6:00 pm in the MTVE Water Company Conference Room.

Board Members Present: Don Nelson, Larry Runge, Luke Meyers, Loren Pease, Bev Strodtz, Steve Ellison, and Michael Lubovich. General Manager Jacki Masters and Field Manager Mike Craig were also present.

Board Members Absent: None.

Guests: Mark Creley, City of Edgewood; Aaron Nix, Assistant City Administrator for Edgewood; Jeremy Metzler, Edgewood Storm Water Engineer.

Communications:

The Annual Picnic is at Don's house on September 15th. Families are welcome and it is important to have all staff attend. Board members not able to attend at this time are Bev, Loren, Luke, and Michael.

Robert Matney, an Edgewood citizen and MTVE member appears to be opposed to the development of a parcel near his home. He has requested information from MTVE staff but the questioning was unclear. Mike responded and asked for direct, specific questions. The questions were 1) Did MTVE approve the plat? Answer: No, MTVE does not approve plats. We did provide the developer with a letter of water availability. 2) Is there 32 feet of glacial till on the subject property? Answer: We have not done any soil testing on this parcel, and therefore cannot provide an answer because we do not know. Jacki asked for direction from the Board should the situation continue. The Board does not want MTVE to become involved in this dispute and recommends that MTVE staff provide factual forthcoming answers that pertain to MTVE jurisdictions only.

Review and Approval of Consent Agenda;

There were three corrections to the minutes of the last meeting:

Section F of the GM's report was corrected to read, "Johnson, Stone, and Pagano, our accountants, hosted an employment practice policy luncheon at Fruitland Water. It was well received and it was discovered that we need to add two new policies – Whistleblower Protection and Records Retention."

Section G of the GM's report was corrected to read, "Michael pointed out that typically a GEO/TECH report will have to be done as part as the grant application and Luke thought that would cost around \$10,000. This report is typically not reimbursable. The grant application is due September 30th. The Board requested Jacki consider the above and make her decision on moving forward with the grant process. Luke believes it is worthwhile to proceed with the grant application.

A typographical error in Section C of Old Business was reported and "an" was changed to "and".

Awaiting Board Approval

Steve moved to approve the consent agenda with modifications as noted above, it was seconded by Larry and approved by the board.

GM REPORT:

- A. Jacki reminded everyone the importance of going to the Storm Water Management Plan at the City Hall starting at 6pm to 8:30pm.
- B. Leakage level is at 3.98% based upon current water useage.
- C. SEP-IRA Plan concerns, after further review there was not that much difference between 2015 and 2016, because the 2015 SEP-IRA amount was over stated.
- D. Steve is meeting with our accountant to amend the foot notes. Specifically, he wants to make sure our members realize that our significant cash reserves are being collected and will be used for future capital projects such as the additional south reservoir.
- E. No biographies were received from Don or Loren due to a misunderstanding on receiving the previous biography. It was agreed that the staff would update the terms of service and publish.
- F. Jacki performed a cost/benefit analysis on applying for a seismic grant from the County. She summarized that the seismic portion of the \$383,000 upgrade would be around \$32,000 and with the approximate cost of a geo/tech report of \$10,000, plus the significant effort required by her and the staff it would not be worth it. The Board agreed with her analysis.
- G. Lease revenue for the Antenna on our tanks equates to approximately \$165,000 per year.
- H. Tank cleaning at South Reservoir is scheduled to occur towards late September. Mike received 3 bids and awarded Sparkle Wash the contract for approximately \$4000, providing the contractor can do the work on the weekends. The \$6000 difference between the low bidder and the 2nd bidder pays for one of the crew to come in on the weekend to open up the facility.
- I. Hydrant maintenance reimbursement funds that MTVE received in the amount of \$13,000 from the Fire Department last year will not be received this year. The Fire Department informed Jacki of this, it was disappointing but expected. Don wants to have a discussion with Commissioner Egan about this.
- J. EMGOV update has still not taken place.
- K. EMGOV asset module is being addressed by Steve and Stephanie. EMGOV and Caselle are now in sync and assets are being depreciated properly. There are three items that Steve requested Stephanie to research and once she does her research, Steve will meet with her and they will be resolved. He does not think that any issues will be considered material. It does appear that EMGOV will have to correct the depreciation formulas at their cost.
- L. The annual membership meeting and election will be held October 11th. The auditor's report will be presented and Don will present a short report on activities and statistics for 2016.

Old Business:

Membership Issues: NONE

Committee Reports: The Finance Committee met and minutes of that meeting are attached. The committee presented their recommendation to invest \$1 million in 4 CDs that have different

Awaiting Board Approval

maturity dates. Before investing in these CDs, Jacki was tasked with confirming that there are no penalties for early withdrawal. If they do have penalties, she is to find equivalent rates and maturities that do not have the penalty and present this to the board for an email proxy. **Loren moved to approve the purchasing of the CDs providing there are no penalties for early withdrawal per Steve's amendment. It was seconded by Larry. MSC.**

Election Committee (Luke) called several members requesting they run for office and was able to get a couple of interested parties. Jacki has emailed details to them and they have until September 15 to get letters of interest and biographies to her. Don, Loren, and Michael are up for reelection. Luke or Larry will be present during the vote counting.

City of Edgewood Issues: Mr. Nix and Mr. Metzler explained that they are working on a new comprehensive plan for the City that includes stormwater management. They have received a grant from Pierce County to study the use of stormwater injection wells. The study will include surface water testing as well as a pilot well to monitor the ground water. They assured us that they are very concerned with the purity of our aquifer and all state and federal regulations will be strictly followed. Mr. Nix pointed out that he is "pretty transparent" in his public duty and that that he is not necessarily opposed to injection wells, but he realizes the need for studies. The white paper that was submitted to Jacki on Tuesday needed correction, she pointed this out to Mr. Nix and he requested that she submit her comments in writing to him and Mr. Metzler. The Board asked many questions about other alternatives to stormwater management rather than wells and Mr. Nix agreed that infiltration or pumping the excess stormwater was better than injection. The discussion went on for an hour, with no formal position being issued by the Board. After Mr. Nix and Metzler left, the general consensus was that several board members should attend the upcoming Stormwater Workshop being held at City hall. Jacki emphatically stated that she is adamantly opposed to any well the city drills for stormwater injection whether it is for studying the ground water or doing a pilot well. The Board completely supports her position!

Audited Financial Statements: As stated earlier, Steve will work with our accountants to amend the footnotes. The amended footnotes will not be a significant change to the audit, but will clarify and inform the reader why we are accumulating large cash reserves. **Steve made a motion that the audited statements be approved with amended footnotes. Motion was MSC.**

Backflow Tester Certification: Bev pointed out that maybe part of an incentive program should be that the employee must stay with MTVE for a year or some of their incentive will be scaled back. It was discussed that the Backflow Assembly Tester certification costs MTVE close to \$5000 with the employee's time, class, and exam fees including the \$300 bonus. Jacki agreed to consider this and will present the board with her plan.

Calendar Interface: As discussed, Larry will move forward and work with our IT consultant on setting up Outlook Interfacing for MTVE events with board members' calendars.

NEW BUSINESS:

A. There are 13 very difficult backflow preventers left to be installed and then MTVE will be one of the few water purveyors to have 100% backflow protection installed. The entire MTVE staff has worked hard and has really come together as a team to achieve this challenge.

MT. VIEW-EDGEWOOD WATER COMPANY (MTVE)

Draft Board Meeting Minutes

September 13, 2017

Awaiting Board Approval

The Board encouraged them to continue and will be happy to see them collect their incentive pay once they have met the goal.

B. A total of three of the old surface computers have been turned into MTVE.

C. Jacki asked if the board members were able to review the draft Water System Plan loaded onto their tablets at the last meeting. **Bev made a motion to approve the Water System Plan as submitted. The motion was seconded by Luke and passed unanimously.**

BOARD COMMENTS:

Don commended Mike Craig for all his effort on the plan and his hard work that saves the members of MTVE considerable amounts of money.

Luke requested that the board meeting agenda be flagged where an action by the board is requested.

Adjournment: There being no further business, President Don Nelson adjourned the meeting at 8:21 pm.

Minutes were prepared by the Board Secretary and reviewed by the General Manager.



MT. VIEW-EDGEWOOD WATER COMPANY

11610 – 32ND STREET EAST

EDGEWOOD, WA 98372-2099

Phone: (253) 863-7348; Fax: (253) 863-0752

www.mfvewater.com



December 13, 2017

The Board of Directors of Mt. View-Edgewood Water Company hereby approves and adopts the 2017 Comprehensive Water System Plan Update as prepared by staff and Engineering Consultants Northwest.

Don Nelson, President

Beverly Strodtz, Vice President

Loren Pease, Secretary

Steve Ellison, Treasurer

Larry Runge, Director

Luke Meyers, Director

Michael Lubovich, Director

Mt. View-Edgewood Water Co.
11610 – 32nd St E
Edgewood, WA 98372
Phone 253-863-7348 Fax 253-863-0752

October 4, 2017

Ms. Jennifer Kropack
Mr. John Ryding
Washington State Department of Health
Northwest Regional Office
Drinking Water Program
20425 – 72nd Avenue South, Suite 310
Kent, WA 98032-2388

RE: RESPONSE TO COMMENTS, WATER SYSTEM PLAN
MT. VIEW-EDGEWOOD WATER COMPANY, ID#568203
SUBMITTAL # 17-0513

Dear Ms. Kropack and Mr. Ryding:

The following is in response to comments from the Washington State Department of Health, Northwest Regional Office dated July 25, 2017 regarding the Water System Plan for Mt. View-Edgewood Water Company, DOH ID #568203. Enclosed are two packets of updated pages for your copies of the draft Water System Plan. We have inserted the Department's comments as they appear in the comment letter in *italics* followed by our responses to the comments.

Planning Data and Water System Description

1. *Figure 1-6, Page 1-6. Please add "retail" to this service area map and identify the corporate boundary of the City of Edgewood and what part of their UGA is in your service area.*

These changes have been made to Figure 1-3 and 1-6.

2. *Figure 1-2 and Page 2-11. Please add clarifying narrative about the unclaimed "white area" between City of Pacific and your service area. Is there any potential to expand here?*

There is no potential for MTVE to serve this area due to terrain and a fish bearing stream. Please see the second paragraph under "Future Service Area" on page 2-11 for the narrative.

3. *Provide signed local government consistency statements from Pierce County and the City of Edgewood.*

The signed consistency statements are added to Appendix O.

System Demand, Analysis, and Water Right Self-Assessment

4. *Hydraulic Model – Run 1. There are several nodes, especially J-495 and J-496, with pressures below 30 psi. Are there or will there ever be active service connections in the areas of these nodes? If so, how will these low pressures be addressed?*

There are a several junction nodes (J-5, J-149-J-495, J-496 and J-497) in the computer model which have pressures below 30 psi. All of these nodes are located on short sections of piping near the South Reservoirs. These sections of pipe do not have any services connected to them and never will. A parallel main fed from the High Pressure Zone Booster Station is relied on to serve the properties in that area.

5. *Hydraulic Model - Run 2. There was no input data for Run 2. Is there a concise summary of input data available for this scenario? There are several hydrants on dead end lines that cannot meet City of Edgewood fire flow standards. Is the local fire department aware of these hydrant limitations? Are there agreements to limiting the use of these hydrants in an emergency?*

The input data for Hydraulic Run 2 is the same for Run 1. Both scenarios are based on the Maximum Day Demand for 4300 ERU's. Run 2 has the added demand for the fire flow at the individual junction nodes.

We have adopted the NFPA 291 Color Code and have painted the tops of these hydrants Orange. The fire department also has received the updated fire flow map. Hydrant color coding will continue as the hydrants are painted.

Operation & Management

6. *Include procedures for localized distribution system pressure loss including health advisory distribution and customer and regulatory agency communication.*

Main break procedures have been added to Chapter 6 and start on page 6-16.

7. *Coliform Monitoring Plan – Intertie Sampling Procedures. Refer to any intertie samples as Investigative not Routine. Routine implies they are compliance samples. In order to avoid raw water sampling in the event the purchasing system (City of Milton) has a positive routine sample you will need to coordinate your sampling so that there is data from your distribution system available from the same day as the positive routine sample. You may also wish to develop procedures so that adequate distribution system data (3 or 4 samples) is generated in the event of unusual events that could cause sampling by Milton outside of scheduled days.*

Intertie samples have been changed to Investigative samples. Three sample sites have been added to the procedure and are sampled when the City of Milton samples outside of our normal sample day.

8. *Cross Connection Control. Per the 2016 pre-plan meeting, provide a narrative about what to say for a media press release about your program. General talking points (resources, dedication, total numbers of devices installed, number left to install, compliance rates with testing, etc.*

The Cross Connection Control section, beginning on page 6-22, has been updated and a Public Information Bulletin was added on page 6-23.

Other

9. *Provide any comments from adjacent utilities regarding your plan update.*

A comment was received from the City of Sumner regarding a change in personnel. Page 6-14 has been updated.

A comment was received from DOE. The comment letter and our response are included near the end of Appendix O.

10. *Provide a signed resolution adopting the plan by the governing body.*

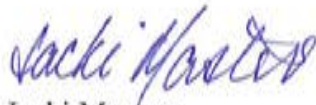
The WSP was adopted by motion at the September 13, 2017 meeting. Meeting minutes are included in Appendix O. The approval is under New Business (C) on page 4.

11. *DOH has filed SEPA on your behalf. Comment periods ends July 27, 2017.*

Thank you. The SEPA has been added near the end of Appendix O.

Hopefully this addresses all questions. Please call if you need further clarification or changes.

Sincerely,



Jacki Masters
Enclosures

cc: Joseph Dominczyk, PE, Engineering Consultants NW



STATE OF WASHINGTON
DEPARTMENT OF HEALTH

NORTHWEST DRINKING WATER REGIONAL OPERATIONS
20425 72nd Avenue South, Suite 310, Kent Washington 98032-2388

November 28, 2017

JACKI MASTERS, GENERAL MANAGER
MOUNTAIN VIEW-EDGEWOOD WATER CO
11610 32ND ST E
EDGEWOOD, WA 983722099

RE: Mountain View-Edgewood Water Company, ID # 56820
Pierce County
Water System Plan - APPROVAL
Submittal # 17-0513

Dear Ms. Jacki Masters:

Mountain View-Edgewood Water Company's Water System Plan (WSP), received in this office on May 15, 2017, with revisions submitted on October 4th and November 20, 2017, has been reviewed, and in accordance with the provisions of WAC 246-290-100, is **APPROVED**.

Approval of the plan is valid as it relates to current standards outlined in Chapter 246-290 WAC, revised January 2017, Chapter 246-293 WAC, revised September 1997, Chapter 70.116 RCW, the Pierce County Coordinated Water System Plan (CWSP), and is subject to the qualifications herein.

An approved update of this WSP is required on or before **November 28, 2027**, unless ODW requests an update or plan amendment pursuant to WAC 246-290-100(9).

APPROVED NUMBER OF CONNECTIONS

The analysis provided in the Mountain View-Edgewood Water Company's WSP shows the water system has sufficient capacity to meet the growth projections during this planning period and that the next limiting factor is storage. Your CIP identifies a completion date of 2019, much sooner than 2023 which is when it's needed. The water system can support an "**unspecified**" designation for its approved number of connections. A specific number of approved connections will not be applied at this time. Development may occur in compliance with the schedule and information provided in this WSP. This designation may be rescinded (and replaced with a specified number of approved connections) if ODW determines that the WSP is no longer representative of system activities.

CONSTRUCTION WAIVERS

Standard Construction Specifications were approved. Consistent with WAC 246-290-125 (2), the water system may proceed with the installation of distribution main extensions *provided the water system completes and keeps on file, the enclosed construction completion report form* in accordance with WAC 246-290-125 (2) and WAC 246-290-120 (5) and makes them available for review upon request by the department.

Public Health - Always Working for a Safer and Healthier Washington



LOCAL GOVERNMENT CONSISTENCY

The WSP meets local government consistency requirements for WSP approval pursuant to RCW 90.03.386 and RCW 43.20.

SERVICE AREA AND DUTY TO SERVE

Pursuant to RCW 90.03.386 (2), the service area identified in this WSP service area map may now represent an expanded "place of use" for this system's water rights. Changes in service area should be made through a WSP amendment.

Mountain View-Edgewood Water Company has a duty to provide new water service within its retail service area.

WATER RESOURCES

The department's approval of your water system design does not confer or guarantee any right to a specific quantity of water. The approved number of service connections is based on your representation of available water quantity. If the Washington Department of Ecology, a local planning agency, or other authority responsible for determining water rights and water system adequacy determines that you have use of less water than you represented, the number of approved connections may be reduced commensurate with the actual amount of water and your legal right to use it.

Ecology, Water Resources, did not comment on this submittal.

WATER SYSTEM PLANNING

We recognize the significant effort and resource commitment involved in the preparation of this plan. Thank you for your cooperation and we look forward to working with you in the future.

Sincerely,



Jennifer Kropack
Regional Planner
(253) 395-6769



John Ryding
Regional Engineer
(253) 395-6757

Enclosure: Construction Completion Report

cc: Mike Craig, MTVEWC, Field Manager
Joe Dominczyk, PE, ECNW
Rich McGowan and Dan Cardwell, Pierce County, Planning and Land Services
Brad Harp, Tacoma-Pierce County Health Department
Tammy Hall, Ecology, SWRO

CONSTRUCTION COMPLETION REPORT FOR DISTRIBUTION MAIN PROJECTS

In accordance with WAC 246-290-120(5), a *Construction Completion Report* is required for all construction projects. Under the submittal exception process for distribution main projects, designed by a professional engineer but not submitted to DOH for approval, the report does not need to be submitted. **However, the purveyor must keep the Construction Completion Report on file and make it available for review upon request by DOH in accordance with WAC 246-290-125 (2)(b).** Furthermore:

- (1) The report form **must** bear the seal, date and signature of a professional engineer (PE) licensed in the state of Washington; and
- (2) Per WAC 246-290-120(5)(c), the amount of change in the physical capacity of a system must be documented, if the project results in a change in physical capacity.

MOUNTAIN VIEW-EDGEWOOD WATER CO

DOH System ID No.: **56820**

Name of Water System

MIKE CRAIG

Date Water System Plan that includes

Name of Purveyor (Owner or System Contact)

Standard Construction Specifications

11610 32ND ST E

Date Standard Specifications

Mailing Address

Approved by DOH: **11/28/2017**

EDGEWOOD, WA 98372-2099

City State Zip

PROJECT NAME AND DESCRIPTIVE TITLE:

(Include the name of any development project and number of services.)

Date Project or Portions Thereof Completed

PROFESSIONAL ENGINEER'S ACKNOWLEDGMENT

The undersigned professional engineer (PE), or his/her authorized agent, has inspected the above-described project that, as to layout, size and type of pipe, valves and materials, and other designed physical facilities, has been constructed and is substantially completed in accordance with construction documents reviewed by the purveyor's engineer. In the opinion of the undersigned engineer, the installation, physical testing procedures, water quality tests, and disinfection practices were carried out in accordance with state regulations and principles of standard engineering practice.

I have reviewed the disinfection procedures, pressure test results, and results of the bacteriological test(s) for this project and certify that they comply with the requirements of the construction standards/specifications approved by DOH.

Date Signed

Name of Engineering Firm

Name of PE Acknowledging Construction

Mailing Address

City State Zip

Engineer's Signature

State/Federal Funding Type (if any)

P.E.'s Seal

Please keep a completed, signed, and stamped copy on file.

NWRO Drinking Water
Department of Health
20425 72nd Ave. S, Ste 310
Kent, WA 98032-2358
(253) 395-6750

SWRO Drinking Water
Department of Health
PO Box 47823
Olympia, WA 98504-7823
(360) 236-3030

ERO Drinking Water
Department of Health
16201 E Indiana Ave, Suite 1500
Spokane Valley, WA 99216
(509) 329-2100

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 P

Service Area for Water Right Place of Use Benefit

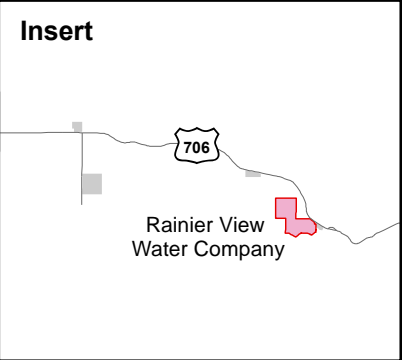
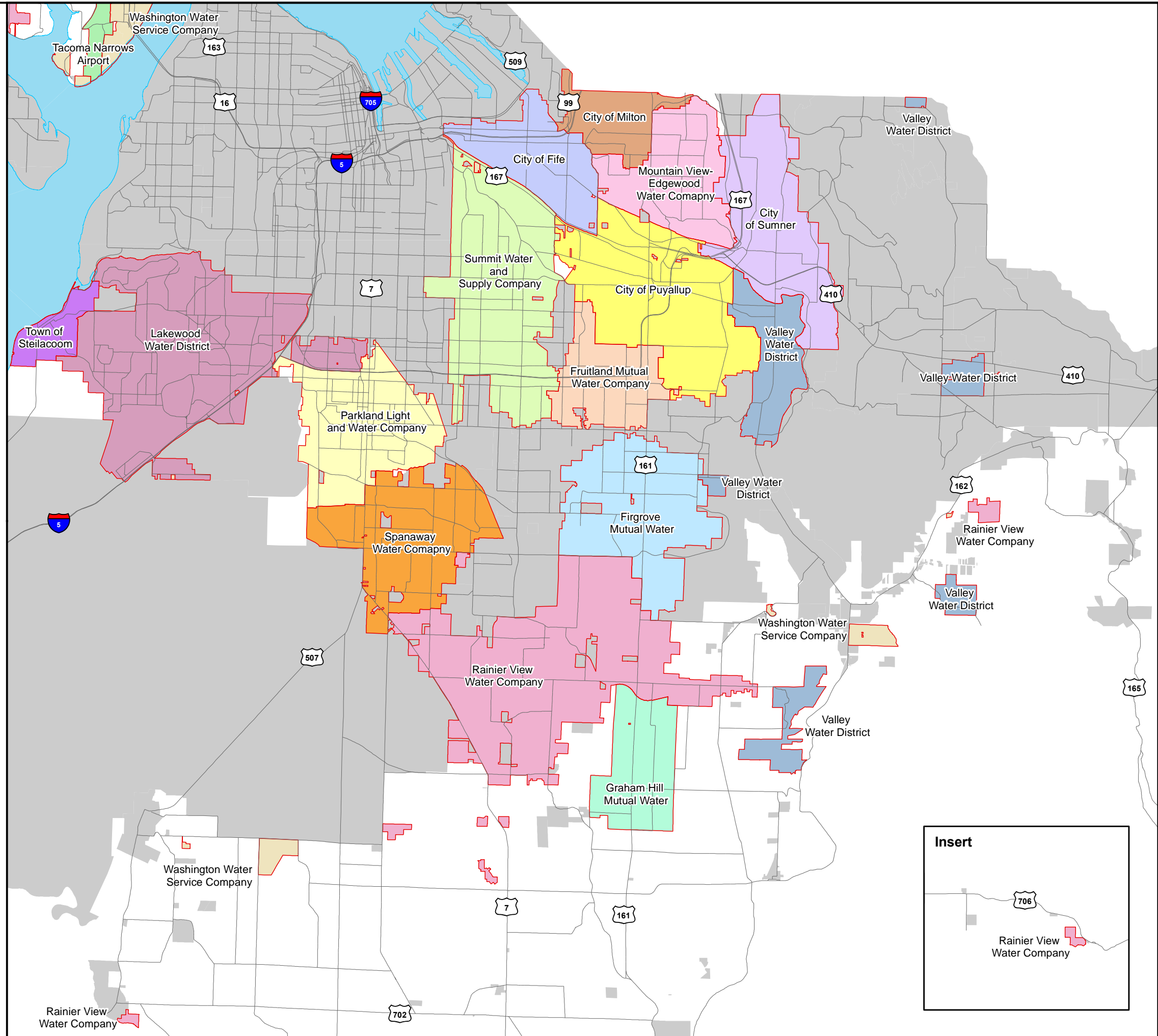
Service Area for Water Right Place of Use Benefit for the Water Cooperative of Pierce County Members

- City of Fife
- City of Milton
- City of Puyallup
- City of Sumner
- Firgrove Mutual, Inc.
- Fruitland Mutual Water Company
- Graham Hill Mutual Water
- Lakewood Water District
- Mountain View-Edgewood Water Co.
- Parkland Light and Water
- Pierce County Public Works and Utilities
- Rainier View Water Company
- Lake Josephine/Riviera Community Club
- Spanaway Water Company
- Summit Water and Supply Co.
- Town of Steilacoom
- Valley Water District
- Washington Water Service Company
- Other Water Service Areas not in the Water Cooperative of Pierce County

DISCLAIMER:
 The map features are approximate and are intended only to provide an indication of said feature. Additional areas that have not been mapped may be present. This is not a survey. Orthophotos and other data may not align. The County assumes no liability for variations ascertained by actual survey. ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS'. The County makes no warranty of fitness for a particular purpose.

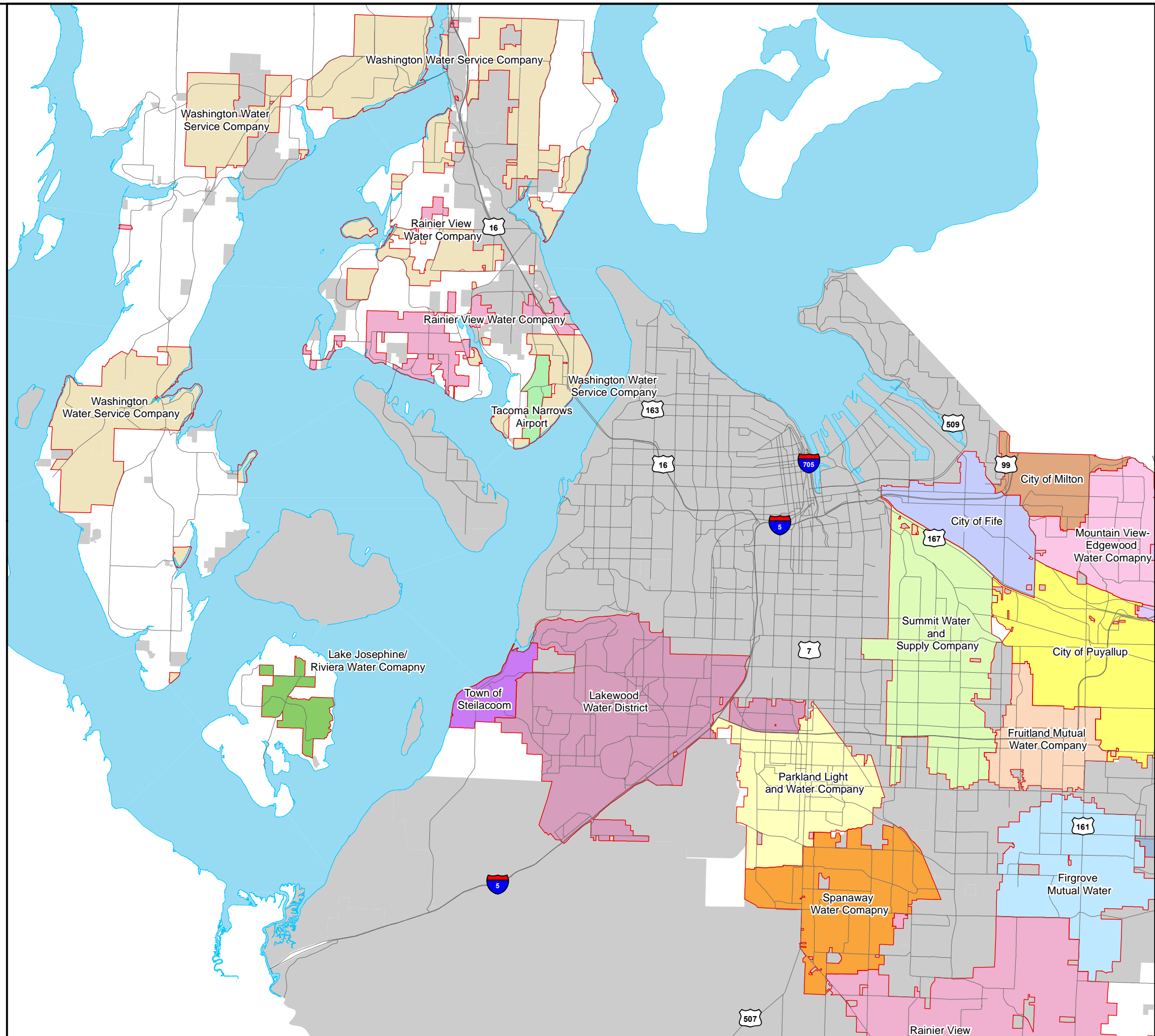


Date: 08/01/2011



Service Area for Water Right Place of Use Benefit for the Water Cooperative of Pierce County Members

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Date: 08/01/2011