City of SUNNYSIDE WASHINGTON

WATER SYSTEM PLAN UPDATE

HLA Engineering and Land Surveying, Inc.

PROJECT NO. 22166

CITY OF SUNNYSIDE

WATER SYSTEM PLAN UPDATE

Prepared by:

HLA
Engineering and Land Surveying, Inc.

PROJECT NO. 22166

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

City of SUNNYSIDE WASHINGTON

INTRODUCTION AND EXECUTIVE SUMMARY

HLA Engineering and Land Surveying, Inc.

INTRODUCTION AND EXECUTIVE SUMMARY

INTRODUCTION

The City of Sunnyside is situated in the lower Yakima River basin between the Horse Heaven Hills and the Rattlesnake Hills in south-central Washington State, as shown on Figure 1-1 State Vicinity Map. The City lies along Interstate 82 between Yakima and Kennewick, approximately 3 miles north of the Yakima River. The area lies within the Walla Walla section of the Columbia Plateau physiographic province. Except for the Harrison Hill area, the terrain in Sunnyside and its Urban Growth Area (UGA) is nearly level. Slopes within the UGA average 0% to 5%, whereas the Harrison Hill area is steeper, averaging 5% to 15%. The elevation of the City of Sunnyside ranges from approximately 675 feet above mean sea level (amsl) in the southern portion of the City to 985 feet amsl at the top of Harrison Hill. The majority of the City lies between 690 and 770 feet amsl.

Sunnyside recognizes the need to improve and expand its water system if it is to meet the demands of its system users and to keep pace with other growth-oriented improvements as the City continues to expand. HLA Engineering and Land Surveying, Inc., was authorized by the City of Sunnyside to prepare this Water System Plan Update, which represents the culmination of planning and data collection efforts.

PLANNING REQUIREMENTS

Water systems with 1,000 or more services are required to have a water system plan approved by the Washington State Department of Health (DOH) pursuant to the Washington Administrative Code, WAC 246-290-100 and WAC 246-291-140.

To assist water utilities in preparing their plans, DOH has published a *Water System Planning Guidebook*, Publication No. 331-068. This guidebook identifies information needed in a water system plan to "identify future needs and apply available resources most efficiently in order to provide high quality service at lowest cost while protecting the health of the community." The guidebook is organized into ten major chapters, with each chapter representing a basic water system plan component. The ten chapters are:

1. Description of the Water System
2. Basic Planning Data
3. System Inventory and Analysis
4. Water Use Efficiency Program
5. Source Water Protection
6. Operation and Maintenance Program
7. Distribution Facilities Design and Construction Standards
8. Capital Improvement Program
9. Financial Program
10. Miscellaneous Documents

Each chapter is divided into several sections to address specific topics in detail. The City of Sunnyside *Water System Plan Update* has been prepared in the format of DOH's *Water System Planning Handbook*.

OBJECTIVE

The principal goal of water system planning is to make efficient use of available resources. This is accomplished by making decisions about water system capital improvements and operations which are in accordance with overall system policies and directions expressed in a utility's water system plan.

An equally important reason for developing a water system plan is to assure orderly growth of the system while maintaining reliable delivery of high-quality water. The Plan is intended to guide water utility actions in a manner consistent with other activities taking place in the community.

The water system plan is intended to look ahead at least 20 years into the future. Development of a definite improvement schedule and financial program is required for the Plan approval period, while the planning approach for the second period may be more conceptual. The Plan requires regular updating, and DOH Plan approval is effective for up to ten years from the date of written approval, based on the timeframe used for projections. To continually provide adequate guidance to decision makers, the Plan must be updated prior to expiration of the current Plan approval.

Once adopted by the City of Sunnyside and approved by DOH, the Water System Plan is considered by DOH "to be a commitment to implement the actions identified in the improvement schedule." Future water system decisions shall be in accordance with the Water System Plan.

PROJECTED WATER DEMANDS

Basic Planning Data (CHAPTER 2): Land use, future service area boundary, and population growth are used to evaluate demands on the Sunnyside water system. The City's 2022 service population was 17,037, and the future service population is projected to be 26,341 in the year 2044. Sunnyside's 2023 number of single-family residential water services was 3,071, and the future number of single-family residential services is projected to be 4,655 in the year 2044.

Current Water Demands (CHAPTER 2): Sunnyside's greatest year of water consumption was in 2018, when an average of 2.82 million gallons of water per day was used. Monthly consumption volumes are not monitored in City records, but the maximum month water production from City sources was experienced in July 2018, when the average daily well production for the month was 4.83 million gallons. Maximum day consumption is estimated at 6.59 million gallons, and peak hour consumption was estimated to be 7,486 gallons per minute (gpm).

Projected Water Demands (CHAPTER 2): Sunnyside's water demand forecast for the years 2034 and 2044 and the City's current water system capacity are shown below:

Category	2023	2034	2044
Annual Demand	3.07 MGD	3.82 MGD	4.66 MGD
Maximum Day Demand	6.59 MGD	8.19 MGD	9.99 MGD
Peak Hour Demand	7,479 gpm	9,298 gpm	11,334 gpm
ERUs	10,831	13,202	16,092

Category	Existing	With Improvements
Source Capacity	9,465 ERUs	20,113 ERUs
Storage Capacity	11,240 ERUs	22,480 ERUs
Water Rights Capacity (Q_a)	15,539 ERUs	To Be Determined
Water Rights Capacity (Q_i)	19,143 ERUs	To Be Determined

As identified above, the City currently has insufficient source capacity to meet DOH recommendations and will be deficient in storage capacity prior to 2034. Capital improvements to address both source and storage capacity shortfall are identified within this Plan.

SUMMARY OF SYSTEM DEFICIENCIES AND RECOMMENDED IMPROVEMENTS

The following is a listing of the major water system deficiencies and recommended improvements which have been identified in the existing water system. A more detailed description of these deficiencies and related improvements can be found in CHAPTER 8.

Supply

Source Well Capacity – The City currently has sufficient well capacity to meet existing maximum day demand (MDD), but only when all of the City's sources are available. It is recommended that the City maintain sufficient sources to allow the highest capacity source to be removed from service for cleaning or repair. Furthermore, source capacity will soon be insufficient for MDD, even with all sources in service. Because of this recommendation, source capacity is currently the limiting factor in growth of the water system, and a new source should be developed. Within the 20-year planning period, a second new source will also be required. Property will need to be procured for these sources.

Wells No. 6, 7, 10, and 11 use vertical turbine pumps that are expected to have a remaining service life of less than 10 years, and the wellhouses are expected to require improvements within 20 years due to age. Wells 12 and 13 use submersible vertical turbine pumps that may require replacement within 10 and 20 years.

Water Rights – Currently, Sunnyside has adequate combined annual (5,044 acre-feet) and instantaneous (5,020 gpm) water rights to meet demands. However, the projected 20-year annual demand of 5,219 acre-feet exceeds annual water rights, and the future expanded source capacity of 8,500 gpm exceeds instantaneous water rights. Water use efficiency measures may be sufficient to offset some projected increases in demand, as discussed in CHAPTER 4 of this Plan.

Water Treatment – The City currently provides chlorination of all of its sources using a combination of gas chlorination and sodium hypochlorite injection. Wells 12 and 13 were converted to gas chlorination in 2024. The City also plans to install sodium hypochlorite storage tanks and injectors at the Grandview and Skyline reservoir sites to allow for future emergency chlorination of the water supply, as needed.

Wells No. 6 and 7 have experienced ongoing maintenance issues and need to be rehabilitated to allow these wells to be operated on a consistent, dependable basis.

Booster Stations –The Grandview Booster Station pumps are all expected to require replacement within the 10-year planning period due to age and general wear.

Storage

Reservoir Cleaning, Inspection and Painting – The City recently had the Skyline reservoir updated, renovated, inspected and painted inside and out. The Grandview reservoirs were evaluated and cleaned by Advanced Diving Services in September 2023. Reports for all reservoirs were satisfactory, and no immediate capital improvement projects were identified. The recommended frequency of cleaning and inspections is variable depending on several characteristics (water quality, mixing, water age and turnover, etc.) but it is recommended that the reservoirs are at least inspected and cleaned approximately every 5 years.

Storage Capacity –The City is currently at the limit of its reservoir storage capacity, and a new reservoir is needed. Due to anticipated growth south of I-82 and the flat topography of Sunnyside, it is anticipated that a new reservoir would likely be located southwest of the City to elevate the tank and reduce the volume of dead storage. The City will need to locate and purchase property for this use.

Reservoir Water Treatment – As identified above, the City anticipates installing chlorination equipment at the Grandview and Skyline reservoirs to allow for emergency chlorination of the water distribution system or to increase chlorine residual in the distribution system as needed. The new future reservoir southwest of the City will similarly be equipped with chlorination equipment for this purpose.

Distribution

Fire Flow Capacity – Several locations within the City have been identified as having insufficient fire flow capacities. Fire flow deficiencies will require pipeline upsizing or looping in the future. The City will construct system improvements to increase fire flow capacities at key locations.

Distribution Capacity – Beyond the locations that have a defined need for fire flow capacity, there is additional looping that the City desires to construct to improve service pressure throughout the City, prepare the City for growth into currently unserved areas, and address aging and low diameter mains that could throttle flow in the future.

PROPOSED WATER SYSTEM FINANCIAL PROGRAM

Recommended system improvements are scheduled for completion in annual increments for the next ten years, as shown on Table 8-1 in CHAPTER 8 of this Plan. Scheduling of the remaining improvements beyond this ten-year period needs to be reviewed yearly as priorities and City growth patterns change and progress. Major recommended improvements for future years (2035 through 2044) have been estimated but have not been scheduled at this time. The estimated improvement costs are provided herein.

In order to fund the recommended water system improvements discussed in this Plan, a proposed financial program has been developed and is provided in Table 9-2 in CHAPTER 9 of this Plan. The proposed financial program incorporates projected operations, improvements, and loan costs for the next ten-year period. Projected revenues and expenditures of the water system include growth factors and inflation rates, in addition to the recommended rate increases, to account for estimated growth within the City, as discussed in CHAPTER 9 of this Plan.

The City of Sunnyside will continue annual reviews of the water system's financial program during their budget preparation process. The financial program will also be reviewed and revised as needed during the Water System Plan update in 2034. This continued review will allow for modifications to the proposed rate and revenue increases, should financial conditions change.

City of SUNNYSIDE WASHINGTON

CHAPTER 1

DESCRIPTION OF THE WATER SYSTEM

HLA Engineering and Land Surveying, Inc.

1.1 OWNERSHIP AND MANAGEMENT

1.1.1 Water System Ownership

The City of Sunnyside, a municipal corporation located within the eastern part of Yakima County as shown on Figure 1-1 State Vicinity Map, owns and operates its own water system. Decisions regarding daily water system operations are made by the Water Division Supervisor and the Public Works Director. Financial decisions regarding major water system improvements and establishment of water rates are made by the Sunnyside City Council. The following parties are involved in the operation, maintenance, and planning for the Sunnyside water production, storage, and distribution facilities:

WATER SYSTEM NAME, OWNER, OPERATOR, AND IDENTIFICATION NUMBER:

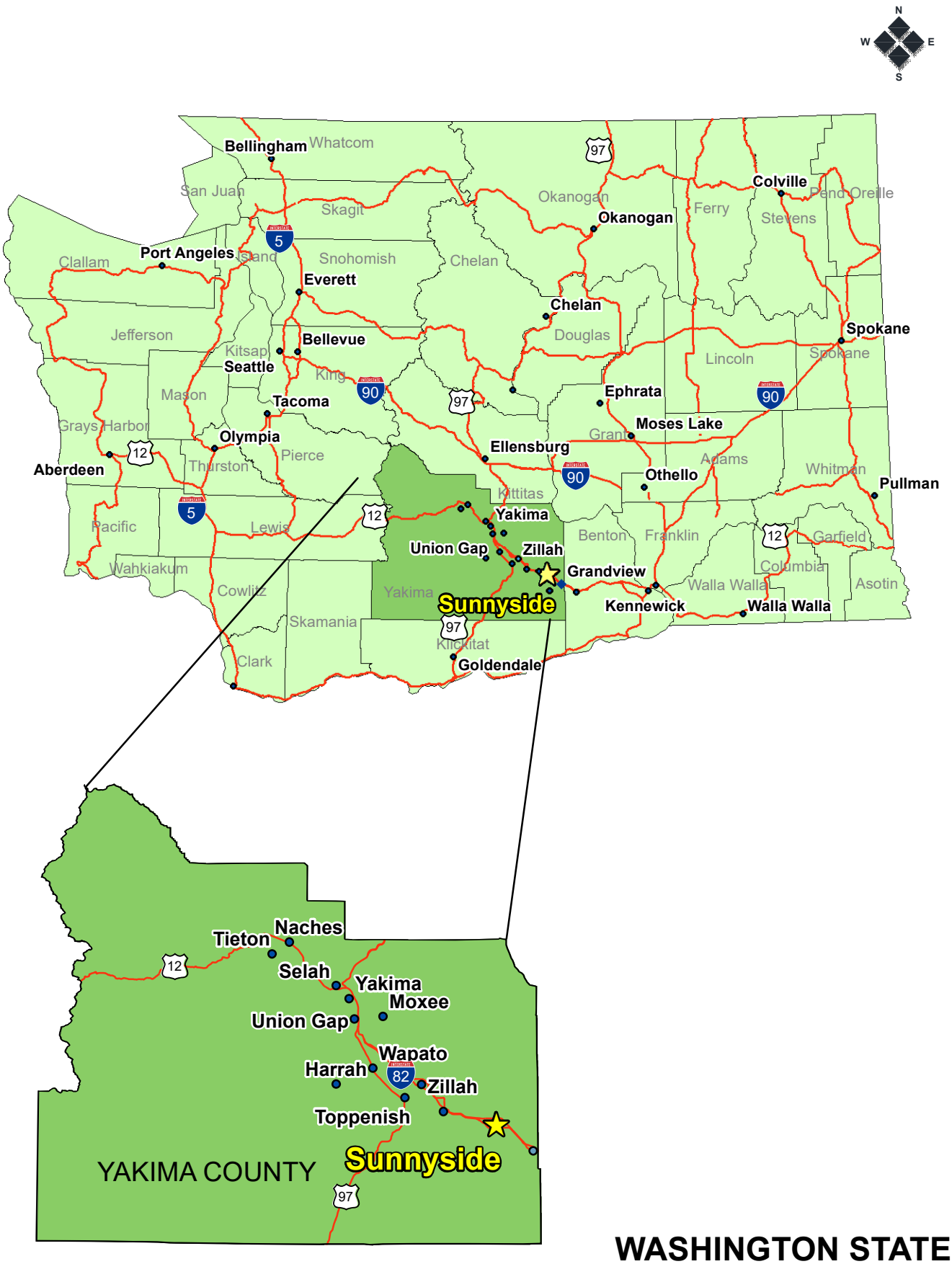
Water Division Supervisor: Daniel Tiliano, Water Distribution Manager 3
City of Sunnyside Water System
818 East Edison Avenue (mailing)
409 East Lincoln Avenue (physical)
Sunnyside, WA, 98944
Phone: (509) 837-5206

Mayor: Dean Broersma
Interim City Manager: Rob Layman
Public Works Director: Raul Sanchez
Deputy Public Works Director: Andrew Robinson
Water Supervisor: Daniel Tiliano
Water System Identification Number: 854003

WATER SYSTEM CONSULTING ENGINEER:

HLA Engineering and Land Surveying, Inc. (HLA)
2803 River Road
Yakima, WA 98902
Phone: (509) 966-7000
Project Engineer: Robert J. Scott, PE

A description of the City's water system management structure is presented in CHAPTER 6. A copy of the City's Water Facility Inventory (WFI) form is included in CHAPTER 10.



WASHINGTON STATE VICINITY MAP FIGURE 1-1

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

09-22-2021
P:\Projects\2022\22166\FIG 1-1a.mxd

1.2 SYSTEM BACKGROUND

1.2.1 History of Water System Development and Growth

In the late 1880s, the Yakima Valley was recognized by railroad officials and land speculators to be an area with an enormous amount of agricultural potential. Railroad officials acted quickly to purchase land in the valley and then formed companies to irrigate these lands. Pumping plants were installed, leading to the first intensive cultivation of land in 1903.

Sunnyside, like many other communities located in the Yakima Valley, can attribute its origins to the expansion of railroad lines and to the promotion of the towns and the area by companies like the Northern Pacific Railway. In 1893, a township company was formed by area settlers, but it was not until 1902 that the town was incorporated. In 1948, Sunnyside became the first city in the state to adopt a council-manager system of government, which provides for an elected council which is responsible for policy making, and a professional city manager, appointed by the council, who is responsible for administration.

The history of the City's water system has not been diligently recorded. Table 1-1 provides some information as to the development of Sunnyside's water system.

TABLE 1-1 MAJOR WATER SYSTEM IMPROVEMENTS

Year	Improvement Description
1910	Well No. 1 constructed
1929	Well No. 2 constructed
1940	Well No. 3 constructed
1940s	Distribution system in retail core of City constructed
1945	Well No. 4 constructed
1952	Well No. 5 constructed
1952- 1962	Construction of two 750,000 reservoirs on Harrison Hill
1962	Well No. 6 constructed
1962	Construction of 1.0 MG Skyline reservoir and 1.0 MG standpipe on Harrison Hill
1975-1976	Purchase of Well No. 7 from Port of Sunnyside and developed with wellhouse
1994-1995	Well No. 8 constructed
1998	Well No. 9 constructed
1998	Well No. 4A constructed
2005	Water System Plan completed (EES, Inc.)
2005	Wellhead Protection Plan completed (EES, Inc.)
2006	Well No. 11 constructed
2011	Well No. 12 constructed
2011	Well No. 13 constructed
2016	Water System Plan completed (BMI)
2024	Water System Plan completed (HLA)

1.2.2 Geography

The Sunnyside area is situated in the lower Yakima River basin between the Horse Heaven Hills and the Rattlesnake Hills in south-central Washington State, as shown on Figure 1-1 State Vicinity Map. The City lies along Interstate 82 between Yakima and Kennewick, approximately 3 miles north of the Yakima River. The area lies within the Walla Walla section of the Columbia Plateau physiographic province. With the exception of the Harrison Hill area, the terrain in Sunnyside and its UGA is nearly level. Slopes within the UGA average 0% to 5%, whereas the Harrison Hill area is steeper, averaging 5% to 15%. The elevation of the City of Sunnyside ranges from approximately 675 feet above mean sea level (amsl) in the southern portion of the City to 985 feet amsl at the top of Harrison Hill. The majority of the City lies between 690 and 770 feet amsl.

Sunnyside's existing retail water service area boundary generally corresponds to the current City Limits. Sunnyside's future retail service area boundary corresponds to its Urban Growth Area Boundary and is shown on Figure 1-2 Service Area.

Like the rest of the Yakima Valley, Sunnyside and its UGA have a warm and dry climate. The Cascade Mountain Range acts as a barrier between Yakima County and the Pacific Ocean, keeping precipitation low and temperatures warm. The mean annual temperature range is from a low of 25.3° F to a high of 87.1° F. The median temperature is 63.6° F, and the mean annual precipitation is 8.22 inches (weather-us.com). With a warm climate and rich soil, Yakima County is a significant agricultural region as well as a recreational area.

Sunnyside's economy is primarily dependent upon agriculture and food processing. A large portion of the area's agricultural commodities/products are exported. The most rapidly growing sectors of the local economy include the hop industry, wine production, high value-added food processing, and the development of the area as a center for retail trade and services. Many of the area's jobs and employment opportunities are seasonal.

The topography and geography of the Sunnyside area have a significant effect upon the City's water system. The majority of the City is served by a single pressure zone, but the Grandview Booster Station and Skyline Reservoir are required to create two additional pressure zones serving the western portions of the City in the vicinity of Harrison Hill. The static pressure within each pressure zone ranges from approximately 40 to over 100 psi. Water pressure is maintained by the City reservoirs and by pressure reducing valves.

1.2.3 Ordinances/Bylaws

The City of Sunnyside operates its water system in accordance with the following municipal code chapters and ordinance(s):

1. Chapter 8.24 – Fire Hydrants
2. Chapter 13.08 – General Provisions
3. Chapter 13.16 – Water Service
4. Chapter 13.18 – Cross-Connection Control Program
5. Chapter 13.20 – Rates and Charges
6. Chapter 13.24 – Reimbursement Agreements for Utility Improvements
7. Chapter 16.16 – Construction Standards and Specifications
8. Chapter 16.36 – Short and Long Subdivision – Improvement Requirements

Copies of these Sunnyside Municipal Code chapters are included in the Miscellaneous Documents Chapter (CHAPTER 10) of this Plan.

1.3 RELATED PLANS

1.3.1 Previous Comprehensive Water Plans

The City's most recent Water System Plan was completed in 2016, which identifies existing water system inventory, deficiencies, and potential growth.

1.3.2 Water System Plans for Adjacent Water Systems

The community of Outlook and the cities of Grandview and Mabton, Sunnyside's nearest municipal neighbors, are located approximately four miles northwest and eight miles southeast and south of Sunnyside, respectively. Grandview adopted its current water system plan in 2022, and Mabton adopted its current water system plan in 2013. There are currently no water service area agreements between any of these neighboring water systems and the City of Sunnyside.

1.3.3 Urban Growth Area Comprehensive Plan

The City of Sunnyside updated and adopted its Growth Management Act Comprehensive Plan in March 2022. This Plan identifies many of the physical, environmental and economic elements within the City and its Urban Growth Area and attempts to forecast anticipated changes within that geographical area. Understanding and predicting future changes within the City and its Urban Growth Area are critical in forecasting future demands on the City's water system.

1.3.4 Wellhead Protection Program

The City of Sunnyside completed a Wellhead Protection Plan in 2005 in partnership with Economic and Engineering Services, Inc. The City's plan identifies potential sources of contamination near its groundwater supplies, proposes management strategies to prevent contamination of those supplies, and develops a contingency plan for contamination mitigation if groundwater does become contaminated. The document contains the following elements:

1. A water system overview.
2. A well susceptibility determination for each well.
3. Definition of the regional hydrogeological framework, including applicable modeling parameters
4. A wellhead protection area determination for each well using a semi-analytical modeling approach
5. An inventory of potential ground water contaminant sources.
6. A spill response plan
7. A wellhead protection management plan
8. A contingency plan which includes an analysis of source capacity, reliability, and water rights; short- and long-term alternate water sources; and emergency and spill response procedures; and
9. Recommended management practices for protection of the City's groundwater sources.

1.3.5 General Sewer Plans

In 2016, the City of Sunnyside completed a General Sewer Plan for the City and its Urban Growth Area that describes the sewer system infrastructure within the City's UGA and determines capital projects required to continue providing service within a 20-year planning period. Then, in 2022, a General Sewer Plan Update Amendment was created for the City to determine the efficacy of various potential lift station projects and identify a wastewater treatment plant headworks upgrade. These General Sewer Plan documents provide Sunnyside with one component of its Capital Improvement Plan for providing future services within both the City and the Urban Growth Area and are the wastewater counterparts to the Water System Plan.

1.3.6 Watershed Plan

In 1998, the Washington State Legislature passed the Watershed Planning Act (RCW 90.82), providing a framework for developing local solutions to water issues on a watershed basis. Framed around watersheds, this voluntary comprehensive planning process is designed to allow local citizens, governments, and tribes to form watershed management planning units to develop watershed management plans.

The watershed planning process consists of three phases. In Phase 1 (Organization), initiating governments (the counties, largest city, and largest water utility in the watershed) identify and appoint Watershed Planning Unit members who represent water resource interests within the watershed. Phase 1 activities also include the development of operating and decision-making structures and goals, and development of a scope of work for Phase 2.

Phase 2 (Technical Assessment), directed by the watershed planning unit, focuses on developing strategies for improving water quality, protecting, or enhancing fish habitat, setting instream flow recommendations, and applies for funding for the collection, management, and distribution of data. Phase 2 is at least a one-year process.

Phase 3 (Plan Development and Approval) requires actual development of the watershed plan. The plan must include water supply strategies to meet minimum flows for fish and to provide for future out-of-stream uses. Phase 3 is at least a one-year process.

The City of Sunnyside is in the Lower Yakima River Basin Watershed Planning Area (WRIA 37). In 1998, the Yakima River Basin Watershed Planning Unit was formed to develop a comprehensive watershed management plan for the entire Yakima River Basin and the Naches River Basin watersheds. In December 2002, the Watershed Planning Unit completed and approved the *Yakima River Basin Watershed Management Plan* (Phase 3 of the planning process) and forwarded the Plan to the county commissioners of Yakima, Benton, Klickitat, and Kittitas Counties. In late 2005, Yakima, Benton, and Klickitat Counties approved and adopted the Plan, while Kittitas County opted to withdraw from the process. The watershed plan contains no obligations for county or state agencies. There is not an operating lead agency for the purposes of adopted watershed plan implementation needs. Instead, water quantity-related plan implementation needs are being addressed by the Yakima River Basin Water Enhancement Project working group.

In 2009, Ecology and Reclamation formed the Yakima River Basin Water Enhancement Project Working Group to help develop a solution to the basin's water problems. The group includes the Yakama Nation, irrigation districts, federal, state, county, and city governments, and environmental organizations. The group developed the *Yakima River Basin Integrated Water Resource Management Plan* (Plan). Elements of the Plan include construction of fish passages at dams, habitat restoration, watershed protection, development of new surface water retention and groundwater storage, enhanced agricultural and municipal water conservation programs, and more effective water banking processes. In total, approximately $3.8 billion is needed to complete the priority projects identified in the Plan.

The *Final Programmatic Environmental Impact Statement* (FPEIS) was issued in March 2012 for the Plan. The FPEIS evaluates two alternatives to meet the water supply and environmental needs in the Yakima River Basin: "No Action Alternative" and "Yakima River Basin Integrated Water Resource Management Plan Alternative," the latter as the preferred alternative.

In July 2013, the Legislature approved more than $130 million in state funding to advance the *Yakima River Basin Integrated Water Plan*. The funding has been used to purchase 50,000 acres of privately owned timber land in the Teanaway River basin, east of Cle Elum, helping to preserve the area's watershed.

This City of Sunnyside Water System Plan is consistent with the Yakima River Basin Watershed Management Plan.

1.4 EXISTING SERVICE AREA

Sunnyside's service area is where the water system currently provides service, and where the City plans to provide service in the future. The service area generally corresponds to the City Limits and the UGA boundary, as shown in Figure 1-2 Service Area. Sunnyside's UGA boundary is also shown in Figure 1-2. The City's Service Area/UGA boundary also represents their water rights place of use.

Figure 1-2 and Map A, provided in CHAPTER 10, show the existing Sunnyside water system, including the general location of water mains, valves, fire hydrants, wells, booster pump stations, and reservoirs.

The existing water system serves a combination of residential, commercial, industrial, and public users. The boundary of the Existing Service Area as shown in Figure 1-2 is approximately 4,901 acres, all of which is within the Sunnyside City Limits.

1.4.1 Neighboring/Adjacent Purveyors

There are seven Group A water systems within 5 miles of the City's service area. These Cities are listed in Table 1-2. In addition to these water systems, there are several Group B water systems near Sunnyside that could be incorporated into the City's water system if their service areas were to be annexed. The City's connection policy is to not serve existing developments without annexation of the development into the City. Currently, the Group A and Group B water systems within the vicinity of the City have not expressed an interest in annexation. However, there have been informal discussions regarding a potential emergency intertie with the City of Grandview, which could provide a benefit to both communities.

TABLE 1-2 NEIGHBORING GROUP A WATER SYSTEMS

DOH ID#	Name	Type	Connections	Distance/Direction
28970	City of Grandview	Community	3,581	2.5 miles / SE
29000	City of Granger	Community	987	5 miles / NW
64937	Outlook Community Water	Community	56	2 miles / W
65919	Panorama Place Water Assn.	Community	47	2.5 miles / S
04157	Teddy Bear Corner	NTNC	5	3 miles / S
02351	Sunnyview Park	TNC	2	Within City Limits / SW
64940	Outlook Elementary School	NTNC	1	2 miles / NW

CITY OF SUNNYSIDE

Water System Plan Update

SERVICE AREA MAP

WELL 12
WELL 13
WELL 8
WELL 10
WELL 11
WELL 9
WELL 6
GRANDVIEW RESERVOIRS
GRANDVIEW BOOSTER STATION
SKYLINE RESERVOIR
WELL 7

N
W
E
S

0 1250 2500

LEGEND

- CITY LIMITS / RETAIL SERVICE AREA
- SERVICE AREA BOUNDARY (UGA) AND WATER RIGHT PLACE OF USE
- EXISTING SOURCE WELL
- EXISTING RESERVOIR
- EXISTING BOOSTER STATION

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP-Figures.dwg

FIGURE 1-2

1.4.2 Existing Zoning and Future Land Use

Existing zoning within the City is presented in Table 1-3, and is shown on Figure 1-3.

TABLE 1-3 EXISTING ZONING WITHIN CITY LIMITS

Zoning (Grouped Land Use) Category	Total Acreage*	Percent of Total
Urban Residential Agricultural	42	0.9%
Low Density Residential (R-1)	639	13.0%
Medium Density Residential (R-2)	365	7.4%
High Density Residential (R-3)	343	7.0%
Mobile Home Residential (M-H)	0	0.0%
Neighborhood Business (B-N)	2	0.0%
Professional Business (P-N)	48	1.0%
Freeway Commercial (B-1)	103	2.1%
General Commercial (B-2)	509	10.4%
Retail Core Commercial (B-3)	55	1.1%
Planned Unit Development (PUD)	135	2.8%
Light Industrial (M-1)	673	13.7%
Heavy Industrial (M-2)	805	16.4%
Airport	85	1.7%
Public Facilities (PF)	285	5.8%
Un-zoned**	812	16.6%
TOTAL	**4,901**	**100.0%**

*Source: *City of Sunnyside 2022 Comprehensive Plan*, March 2022.
**Un-zoned areas include rivers, streets, alleys, right-of-way, and other un-zoned areas within the City limits boundary.

As shown in Table 1-3, Sunnyside is predominantly an industrial city, and the largest combined zoning designation within the City is industrial (M-1 and M-2), which accounts for 1,478 acres, or 30% of the land within City limits. The second largest designation is residential (R-1, R-2, R-3), which accounts for 1,347 acres, or 27% of the land within City limits.

The service area for the City of Sunnyside water system generally corresponds to the City's Urban Growth Area (UGA), as adopted in the City's *2022 Comprehensive Plan*. The Service Area/UGA boundary is shown on Figure 1-3. The City of Sunnyside UGA includes an area of approximately 7,409 acres total, 2,508 acres of which is outside the City Limits. A breakdown of future land use within the UGA and outside the City Limits is provided in Table 1-4 and Table 1-5. Future land use within the UGA is presented on Figure 1-4.

TABLE 1-4 GMA PLANNING AREA OUTSIDE CITY LIMITS AND WITHIN UGA		
Zoning Category	Total Acreage*	Percent of Total
Residential (UGA)	1,311	52.3%
Commercial (CG)	108	4.3%
Industrial (M-1)	927	36.9%
Un-zoned**	163	6.5%
TOTAL	2,508	100.0%
*Source: City of Sunnyside GIS data, January 2023. **Un-zoned areas include streets, alleys, right-of-way, and other un-zoned areas within the UGA boundary.		

TABLE 1-5 SUNNYSIDE FUTURE LAND USE ACREAGE		
Land Use Category	Total Acreage*	Percent of Total
Non-Residential	3,886	52.5%
Residential	2,548	34.4%
Un-zoned**	975	13.2%
TOTAL	7,409	100.0%
*Source: City of Sunnyside GIS data, January 2023. **Un-zoned areas include streets, alleys, right-of-way, and other un-zoned areas within the UGA and City limits boundary.		

As shown in Table 1-4, residential area is the largest land use within Sunnyside's UGA and outside the City Limits comprising of approximately 1,311 acres (52.3%). Non-Residential area is the largest future land use within Sunnyside's UGA, comprising of approximately 3,886 acres (52.5%) of the land, as shown in Table 1-5.

CITY OF SUNNYSIDE

Water System Plan Update

EXISTING ZONING MAP

N
W E
S

0 1250 2500

LEGEND

- EXISTING CITY LIMITS
- SERVICE BOUNDARY (UGA)
- (AP) AIRPORT
- (B-1) FREEWAY COMMERCIAL
- (B-2) GENERAL COMMERCIAL
- (B-3) RETAIL CORE
- (BN) NEIGHBORHOOD BUSINESS
- (M-1) LIGHT INDUSTRIAL
- (M-2) HEAVY INDUSTRIAL
- (PB) PROFESSIONAL BUSINESS
- (PF) PUBLIC FACILITIES
- (R-1) LOW DENSITY RESIDENTIAL
- (R-2) MEDIUM DENSITY RESIDENTIAL
- (R-3) HIGH DENSITY RESIDENTIAL
- (URA) URBAN RESIDENTIAL AGRICULTURE
- (PUD) PLANNED UNIT DEVELOPMENT

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.

2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP-Figures.dwg

FIGURE 1-3

CITY OF SUNNYSIDE

Water System Plan Update

FUTURE LAND USE MAP

N
W E
S

0 1250 2500

LEGEND

- EXISTING CITY LIMITS
- SERVICE BOUNDARY (UGA)
- INDUSTRIAL
- RESIDENTIAL
- COMMERCIAL
- PUBLIC
- MIX USE

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP-Figures.dwg

FIGURE 1-4

1.5 SERVICE AREA POLICIES

Many policies are established by a utility which affect its growth and development. Some policies deal specifically with drinking water and have a direct impact upon utility development within its future service area. The City of Sunnyside has identified the following policies which directly or indirectly affect the water system:

1. The City will make every effort to provide domestic water service to new customers within Sunnyside's Future Service Area (Urban Growth Area) under the following conditions:

    - All costs associated with providing water service, e.g., extending water mains to the site, shall be the responsibility of the proponent/developer. Requirements to be met by proponents/developers when extending the City's water system are identified in the City of Sunnyside Design and Construction Standards and Specifications for Public Works Improvements which is provided in the Miscellaneous Documents Chapter (CHAPTER 10) of this Plan.
    - The City may choose to participate in such improvements through grant, loan, and/or City funding on a case-by-case basis if it is determined that such an investment is in the interests of the community.
    - The City maintains adequate water rights capacity per DOH's required "water rights self-assessment" to serve the proposed property/properties.
    - The City maintains adequate physical source and/or storage capacity to serve the proposed property/properties.
    - The proponent/developer shall "decommission" any and all groundwater wells on the property in accordance with the applicable Washington Administrative Code (WAC) requirements, unless a well is to become part of the City's water system.

2. The City may choose to require a water main extension to be oversized for future demand. The difference in material and construction costs between the two sizes may be paid for by the City, or it may enter into an agreement requiring those costs to be repaid by the future users.

3. Service will not be provided to proposed structures which have fire flow requirements greater than the capacity of the system. The cost of upgrading the existing water system which is required by a development to meet fire flow requirements shall be the responsibility of the developer including, but not limited to:

    a. Upsizing existing water mains.
    b. Looping of the distribution system by installing new water mains.
    c. Increasing storage and/or pumping capacities.

4. The City will administratively assist property owners who wish to establish a Local Improvement District for the purposes of constructing water system improvements, as long as the facilities do not extend outside the City's established service area.

5. The City has established provisions for connections to water mains and extensions (City Codes 13.16 and 16.16).

6. The City will not allow its mains to be used to transmit another water purveyor's water through the City's system to other non-City water users (wheeling of water).

7. The City will not wholesale water to other utilities.

8. The City may provide water service to properties outside the City Limits in accordance with Chapter 13.08.010 of the City Code, a copy of which is provided in the Miscellaneous Documents (CHAPTER 10). The “outside customers” will be assessed water rates which are higher than those charged to customers within the City Limits.

9. The City may choose to manage and operate or provide specific contract services for a satellite water system outside the City Limits, but within the City's service area. In making its decision, the City will take into consideration factors such as:

   a. The possibility of extending water service to the area and annexing the property.
   b. Construction materials, standards, and specifications of the satellite system.
   c. Condition of the various components of the satellite system including, but not limited to, pipes, valves, pumps, reservoirs, and sources of supply.
   d. Easements and access to the satellite system.
   e. Fire protection capability of the satellite system.
   f. Cross-connection control of the satellite system.
   g. Specific operation, management, or contract service responsibilities to be provided; and
   h. Conditions for assuming management and operation of the satellite system.

   City operation of satellite systems will be done on a case-by-case basis. In those cases where agreements for City operation are reached between the City and the satellite system, contracts for ownership, operation, and maintenance will be developed and included in the Water System Plan.

10. The City shall not accept ownership or operation of existing private water systems annexed into the City unless said systems meet the City of Sunnyside standards. Substandard systems shall be upgraded or replaced prior to integration into the City’s water system.

11. Newly annexed properties will transfer the balance of unused domestic and/or irrigation water rights to the City.

1.5.1 Service Area Agreements

There are currently no other large water purveyors within Sunnyside’s UGA. In addition, Sunnyside currently has no water service area agreement with its nearest municipal neighbors, the community of Outlook located four miles to the northwest and the cities of Grandview and Mabton, located eight miles to the southeast and south, respectively.

1.5.2 Conditions of Service

The City of Sunnyside uses a combination of planning applications available at City Hall for potential customers to use in applying for water service. These include applications for a Conditional Use Permit, General Application, Long Plat Application, Planned Unit Development, and Short Plat Application. Information regarding such items as water service charges, billing information, developer extension requirements, meter and material specifications, connection fee schedule, cross-connection control requirements, and latecomer payback provisions are presented to customers, builders, and developers when they apply to the City for water service and are also available on the City’s website and within the City’s Municipal Code.

1.5.3 Satellite Management Agencies

As discussed in the previous section of this Chapter, Service Area Agreements, the City of Sunnyside may, in the future, choose to manage and operate a satellite water system outside the City Limits, but within the City's Urban Growth Area. The City has no specific plans currently to become a satellite management agency. If Sunnyside develops specific plans to manage and/or operate a satellite water system, the City will develop a satellite management program.

1.5.4 Complaints

The Sunnyside Public Works Department responds to all water system complaints. All complaints received by the City are recorded on a work order form, investigated, and resolved. A record of all complaints received, and their resolution is kept by the Sunnyside Public Works Department. Sunnyside's complaint response program is discussed in more detail in CHAPTER 6 of this Plan.

1.6 DUTY TO SERVE

The City of Sunnyside recognizes municipal water suppliers have a duty to provide service to all new connections within their retail service area when sufficient water rights and capacity exits, when the service request is consistent with the Municipal Code, and when service can be provided in a timely and reasonable manner. Each of these factors is discussed in this Plan.

Sunnyside is committed to providing water service to those persons and commercial and industrial establishments in accordance with City Municipal Code Chapters 8.24, 13.08, 13.16, 13.18, 13.20, 13.24, 16.16, and 16.36. Copies of these codes and ordinances are included in CHAPTER 10 of this Plan.

The following is a summary of the City's procedures for addressing requests for water service:

1. Service Requests – Applications for water service within the City and within the UGA are addressed in accordance with City Code Chapter 13.16.010. Applicants are required to complete an application with City of Sunnyside Planning Department to begin the process of adding a connection to the water system. City planning staff coordinate with Public Works staff to determine the availability of capacity to serve the new connection(s) and permitting cost to accept the application. A copy of this form is included within the Miscellaneous Documents Chapter (CHAPTER 10) of this Plan.

2. Water Rights Adequacy – Each application for water service is reviewed by the City Public Works Department to determine the amount of water requested, and that the City has sufficient water rights to provide service.

3. Conditions of a Non-Technical Nature – Conditions for connection to the City's water system are addressed in accordance with Municipal Code Chapters 13.08 and 13.16. Copies of these Municipal Code chapters are included in CHAPTER 10.

4. Procedures for Handling Time Extensions, Disputes, and Appeals – Applications for water service which conform to operating procedures of the Water Department and are in areas already served by City water mains will be installed upon order and payment of charges and meeting of conditions incident to the installation. Requests for water service found to be out of the ordinary must be made in writing and filed with the City Clerk for a public hearing before the City Council and/or Planning Commission. Recommendations will be made on the application per Municipal Code Chapters 19.01 and 19.02.

City of SUNNYSIDE WASHINGTON

CHAPTER 2

BASIC PLANNING DATA

HLA Engineering and Land Surveying, Inc.

2.1 CURRENT POPULATION, SERVICE CONNECTIONS, AND ERUS

2.1.1 Current Population

According to the U.S. Census Bureau, the 2020 population of the City of Sunnyside was 16,375, an increase of approximately 3.3% (or 517 people) since 2010. Sunnyside's growth rate for the period 2010-2020 was approximately 0.3% per year. Population trends for the City of Sunnyside, Yakima County, and the State of Washington for the period 2010 through 2022 are presented in Table 2-1. Office of Financial Management (OFM) data was used for estimating population growth within Yakima County and the State of Washington subsequent to the 2020 census, and an annual growth rate of 2.0% was used for the City to remain consistent with other City planning in recent years, including the 2016 *Water System Plan* and the 2022 *General Sewer Plan and Wastewater Facilities Plan Amendment*. This growth rate is higher, and therefore more conservative, than the OFM projection between 2020 and 2022.

TABLE 2-1 CENSUS POPULATION TRENDS

Year	City of Sunnyside		Yakima County		State of Washington	
	Population	Annual Growth Rate	Population	Annual Growth Rate	Population	Annual Growth Rate
2010	15,858	-	243,231	-	6,724,540	-
2020	16,375	0.3%	256,728	0.5%	7,707,047	1.4%
2021	16,703 (1)	2.0%	258,100 (2)	0.5%	7,766,975 (2)	0.8%
2022	17,037 (1)	2.0%	259,950 (2)	0.7%	7,864,400 (2)	1.3%

Source: U.S. Census Bureau
(1) Estimate assuming 2.0% annual growth rate to remain consistent with current City planning.
(2) Estimate based on 2021 and 2022 Office of Financial Management Data

In 2022, there was an average of 3,071 Single-Family Residential water services and 173 Multi-Family Residential water services (1,903 dwelling units, assuming 11 per service, per 2016 WSP). Assuming the average household sizes of these services are similar, the average persons per residential service would be:

$$\frac{17{,}037}{3{,}071 + 1{,}903} = \mathbf{3.4}\ persons\ (rounded)$$

This will be the basis for projecting future population and future water service demands in both the City and UGA.

2.1.2 Existing Water Service Connections and ERUs

The location and user category of each water service are critical components in assessing demands throughout a water system. The current number of metered water services by user category is used as a basis for projecting the number of future water services from population estimates provided in Section 2.1.1. The DOH defines a "service connection" or "connection" as the number of dwelling units (single family and/or multi-family residential) the City provides water to. Equivalent residential units (ERUs) are defined as the amount of water consumed by a typical full-time single-family residential service. More information on ERUs is provided in Section 2.2.4. The average number of metered water services and service connections by user category for the year 2022 is shown in Table 2-2. The City recognizes that there are likely more than 11 water services dedicated to irrigation purposes; however, the existing billing software does not classify these separately. These services are those with an "Irrigation" designation in

the service name and collectively include City parks, separate school irrigation services, and a few multifamily services dedicated to landscaping.

TABLE 2-2 YEAR 2022 METERED WATER SERVICES AND SERVICE CONNECTIONS BY USER CATEGORY

User Category	Metered Water Services	Service Connections (Units)
Residential		
Single-Family	3,071	3,071
Multi-Family	173	1,903 (1)
Non-Residential		
Commercial	574	574
Irrigation	11	11
Total Connections	**3,829**	**5,559**

(1) Assumes 11 service connections per water service based upon historical billing records.

The City generally determines the population location by identifying user categories and number of water services within each pressure zone. However, the software does not currently record which pressure zone a service is in, and therefore estimates have been made as to how many connections are in the various pressure zones. The 2016 Water System Plan (WSP) estimated that 15.5% of single-family residential connections are in Zones 2 and 3, and that estimate is used herein. In addition to determining population locations and related residential water services, it is important to understand the location of all other water service users. Water services are divided into user categories and pressure zones as shown in Table 2-3.

TABLE 2-3 YEAR 2022 SERVICE CONNECTIONS BY USER CATEGORY PER PRESSURE ZONE

User Category	Lower Zone (Zone 1)	Upper Zones (Zones 2 and 3)	TOTAL
Single-Family Residential	2,595	476	3,071
Multi-Family Residential	1,903	0	1,903
Commercial	574	0	574
Irrigation	11	0	11
TOTAL	**5,083**	**476**	**5,559**

2.2 WATER PRODUCTION AND USAGE

Current and historical metered water consumption and production data records are the preferred method for determining demand trends and establishing a basis for forecasting future demand. All water system sources and services in the City of Sunnyside are metered. Source well and meters (production) are typically read daily, and consumption meters are read monthly.

2.2.1 Existing Water Production

Annual water production by source well for the period 2018 through 2022 is presented in Table 2-4. As identified in this table, the City has 8 wells, one of which (Well No. 10) is an emergency source only, and Well No. 9 produces a significant fraction of the City's water. Water production has decreased over the past six years. This may be due in part to water use efficiency efforts or could represent one or more source meters underreporting flow.

TABLE 2-4 SUNNYSIDE ANNUAL WATER PRODUCTION 2017 – 2022
(values are in million gallons)

Source	2018	2019	2020	2021	2022
Well #6 (S06)	4.6	5.1	0.8	80.9	76.1
Well #7 (S07)	147.3	206.1	73.9	199.5	0.0
Well #8 (S08)	267.1	283.5	196.3	239.0	231.5
Well #9 (S09)	450.4	275.4	460.0	272.3	472.8
Well #10 (S10)	0.0	0.0	0.0	0.0	0.0
Well #11 (S11)	99.1	96.7	115.5	111.5	64.8
Well #12 (S12)	44.8	56.7	57.0	45.3	21.3
Well #13 (S13)	62.4	94.9	119.2	93.8	132.9
TOTAL	**1,075.8**	**1,018.4**	**1,022.7**	**1,042.3**	**999.2**

Monthly water production in 2018 (the year of highest annual production within the past five years) is provided in Table 2-5. Figure 2-1 shows total source production between 2018 and 2022. Figure 2-2 shows monthly production for each source in 2018, which is representative of typical seasonal variation. Similar to many eastern Washington communities, Sunnyside's water demand increases in the summer due to the use of potable water for irrigation at services without separate irrigation provided by Sunnyside Valley Irrigation District (SVID). It is anticipated that less than 20 percent of the City's customers have an SVID connection for separate irrigation. The City has other large irrigation demands that it serves, including parks and schools. Finally, many of the City's commercial customers support the agricultural industry and water demands often vary during the year based upon agricultural activity.

TABLE 2-5 SUNNYSIDE MONTHLY WATER PRODUCTION 2018 (values are in million gallons)								
Month	Well #6 (S06)	Well #7 (S07)	Well #8 (S08)	Well #9 (S09)	Well #11 (S11)	Well 12 (S12)	Well 13 (S13)	All Wells
January	0.0	0.0	13.6	42.6	0.0	0.0	0.0	**56.2**
February	0.0	12.6	20.8	19.7	0.0	0.0	0.0	**53.1**
March	0.0	6.5	20.8	28.0	7.9	0.2	0.2	**63.5**
April	0.0	7.1	23.7	39.9	2.8	2.4	0.0	**75.9**
May	0.0	5.0	26.5	47.1	17.2	15.4	0.0	**111.2**
June	0.0	25.2	24.9	49.8	18.2	6.1	0.0	**124.2**
July	0.0	38.6	34.7	57.2	17.9	0.0	1.3	**149.7**
August	0.0	19.3	33.4	40.8	16.4	1.3	24.3	**135.4**
September	0.0	22.1	9.3	24.9	15.9	12.5	23.6	**108.3**
October	0.1	1.5	33.3	26.5	3.0	7.0	13.0	**84.3**
November	0.0	4.5	26.1	31.6	0.0	0.0	0.0	**62.3**
December	4.4	4.8	0.0	42.3	0.0	0.0	0.0	**51.6**
TOTAL	**4.6**	**147.3**	**267.1**	**450.4**	**99.1**	**44.8**	**62.4**	**1,075.8**

FIGURE 2-1 TOTAL WELL PRODUCTION

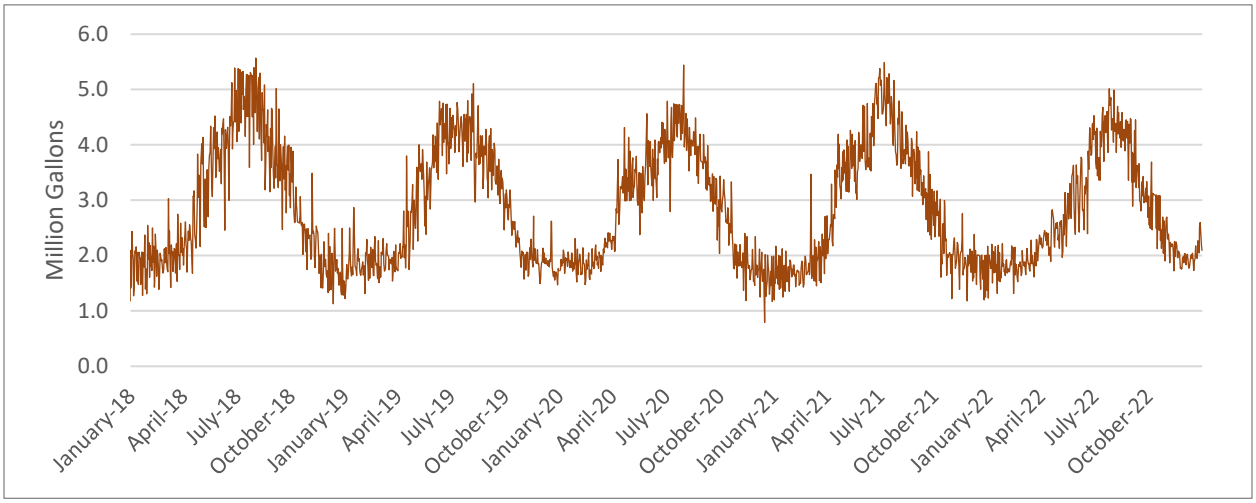
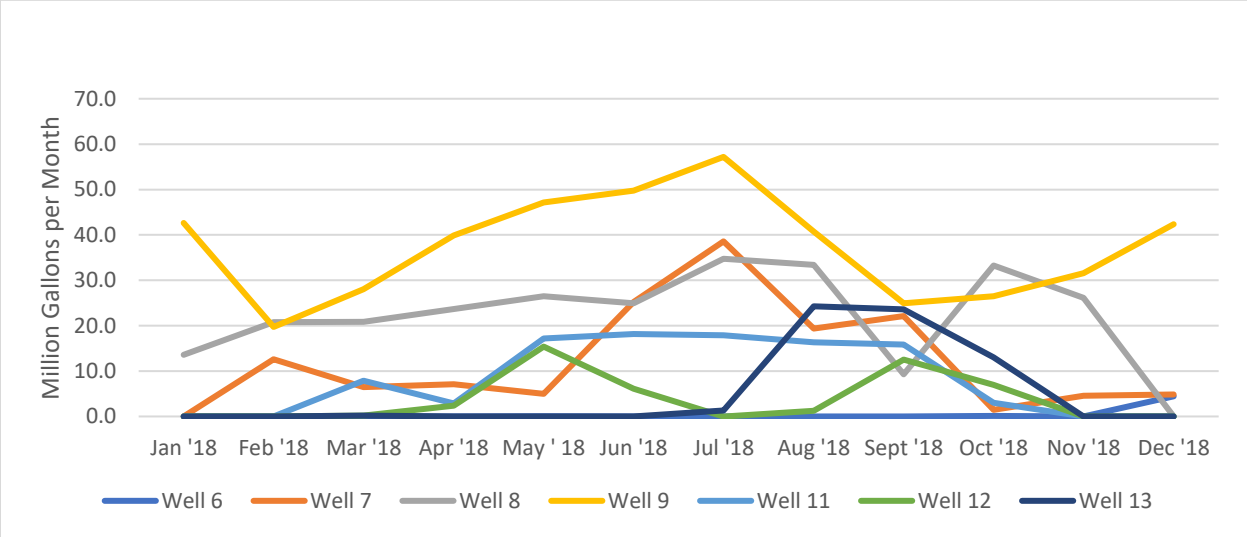


FIGURE 2-2 2018 WELL PRODUCTION



2.2.2 Existing Water Consumption

Currently, water consumption data is maintained by the City's billing computer database. Services are identified by billing category and water meter size. The number of metered water service connections by user category for 2022 is presented in Table 2-3 For multi-family connections, the number of residential units is not currently tracked in the billing software, and reporting features do not allow City staff to determine monthly water use for service categories. Prior to the current software being used for billing, the City tracked the number of residential units in multi-family connections, and the average multi-family connection consisted of 11 residential units. That historical average is used herein and summarized in Table 2-2.

The annual volume of water consumed (in million gallons per year) by user category for the period 2018 through 2022 is presented in Table 2-11.

TABLE 2-6 ANNUAL WATER CONSUMPTION BY USER CATEGORY 2018-2022 (values are in million gallons per year)						
User Category	2018	2019	2020	2021	2022	2018-2022 Avg.
Residential						
Single-Family Residential	300.4	270.2	318.9	330.9	363.2	316.7
Multi-Family Residential	160.0	147.7	161.2	143.4	128.8	148.2
Non-Residential						
Commercial	497.7	478.8	419.5	438.0	444.1	455.6
Irrigation	71.1	55.7	77.8	60.9	47.5	62.6
TOTAL	**1,029.2**	**952.5**	**977.4**	**973.2**	**983.7**	**983.2**

During the period 2018 through 2022, the total number of services increased from 3,559 to 3,776 (a 6.1% increase), and the volume of water consumption decreased from 1,026.6 MG to 983.7 MG (a 4.2% decrease).

The average day water consumption per service by user category (in gallons per service per day) for the period 2018 through 2022 is presented in Table 2-7. It can be seen from Table 2-7 that the average day consumption per service for single-family residential categories increased, while the remaining categories decreased. During development of this Plan, the City encountered difficulty in generating classification-specific reports within the billing software, which may have resulted in some connections that are not single-family residential being miscategorized in the dataset. The difficulty with managing billing data has included an inability to determine how water consumption changes on a seasonal basis, aside from a general understanding that consumption increases during the summer. For this reason, the City is unable to meet the provisions of WAC 246-290-100(4)(b)(ii)(D) requiring that the City identify seasonal variations in its water system planning. The City is in the process of implementing new billing software that will allow this requirement to be met in future planning efforts.

With respect to single-family residential water consumption, the 2016 WSP identified a single-family residential water demand of 297.4 gpd; therefore, the average value of 290 gpd in Table 2-6 is not unreasonable. It also represents an overall trend towards reduction in single-family residential water use since 2016, despite the recent trend upward since 2019.

TABLE 2-7 AVERAGE DAY WATER CONSUMPTION BY USER CATEGORY 2018-2022 (values are in gallons per metered water service per day)						
User Category	2018	2019	2020	2021	2022	2018-2022 Avg.
Residential						
Single-Family Residential	287	254	286	298	324	290
Multi-Family Residential	2,534	2,424	2,630	2,396	2,040	2,405
Multi-Family Units	230	220	239	218	185	219
Non-Residential						
Commercial	2,841	2,527	2,303	2,371	2,419	2,492
Irrigation (1)	10,790	9,514	12,880	10,743	8,959	10,577
(1) Assumes that irrigation demand occurs within 180 days, rather than 365.						

2.2.3 Maximum and Peak Consumption

As identified above, the City has had difficulty in accessing the necessary billing data to determine monthly water consumption based upon service categories or to evaluate peak water consumption. However, it is assumed that the City's water production closely matches consumption from one day to the next, and production trends provide sufficient information to understand the City's seasonal water use. Furthermore, the City's water usage patterns are unlikely to have changed significantly since the 2016 WSP, and peaking factors identified therein can be used for estimating maximum and peak water consumption.

The 2016 WSP identified that the maximum day demand (MDD) between 2009 and 2015 varied between 1.7 and 2.4 times the average day demand (ADD), as evaluated using production data. An MDD:ADD ratio of 2.0 was used in that plan for forecasting purposes and is considered herein. As a matter of comparison, the resulting MDD of 5,387,400 gpd using an MDD:ADD ratio of 2.0 is similar to the maximum production day of 5,569,000 gpd identified on August 2, 2018. Considering this minimal difference, the use of production data for evaluating seasonal variation and peaking factors is reasonable. An MDD:ADD ratio of 2.1 will be used, based upon the maximum production day of 5,569,000 gpd.

Peak hour demand (PHD) is the calculated maximum rate of water consumed, excluding fire flow, that can be expected to occur over a continuous 60-minute period. A peaking factor was calculated consistent with the *2020 Water System Design Manual (WSDM)*, Equation 3-1 as shown below. Using the maximum day of water production to calculate the MDD and PHD for projection of future system demand will account for the highest likely demand on the system, based upon available historical data.

Equation:

$$PHD = \left(\frac{MDD_{ERU}}{1440}\right)[(C)(N) + F] + 18 \qquad \text{(WSDM, Equation 3-1)}$$

Where,

C $= Coefficient\ associated\ with\ range\ of\ ERU = 1.6$ (WSDM, Table 3-1 >500 ERUs)
N $= Number\ of\ ERUs\ on\ MDD\ basis = 9{,}888$ (ERUs for the maximum month)
F $= Factor\ associated\ with\ range\ of\ ERUs = 225$ (WSDM, Table 3-1 >500 ERUs)
$MDDERU$ $= Flow\ per\ ERU\ on\ an\ MDD\ basis$ (Table 2-7, multiplied by 2.1)

$$MDD_{ERU} = (290)(2.1) = 609\,\boldsymbol{\frac{gpd}{ERU}}$$

Therefore,

$$PHD_{\square} = \left(\frac{609}{1440}\right)[(1.6 \times 9{,}888) + 225] + 18 = \mathbf{6{,}799}\ gpm$$

$$Peaking\ Factor_{\square} = \frac{PHD}{MDDgpm} = \frac{6{,}799\ gpm}{3{,}928\ gpm} = \mathbf{1.7}$$

A PHD: MDD peaking factor of 1.7 will be used for future calculations in this report.

TABLE 2-8 MAXIMUM DAY AND PEAK HOUR DEMAND					
User Category	No. of Connections	Maximum Day Demand (gallons) (1)	Maximum Day Demand per Connection (gallons)	Peak Hour Demand (gpm)	Peak Hour Demand per Connection (gpm)
Residential Connections					
Single-Family Residential	3,071	1,822,300	609	2,190	0.7
Multi-Family Residential Units	1,903	852,900	459	1,025	0.5
Non-Residential Connections					
Commercial	574	2,621,300	5,234	3,151	5.5
Irrigation	11	360,200	22,212	433	39.4
TOTAL	**5,559**	**5,656,700**	**-**	**6,799**	**-**
(1) Calculation Assumes Maximum Day Demand = Average Consumption from Table 2-6 multiplied by 2.1 peaking factor.					

2.2.4 Equivalent Residential Units (ERU)

An Equivalent Residential Unit (ERU) is defined as the amount of water consumed by a typical full-time single-family residence. The actual quantity of water represented by an ERU is related to the type of demand (average day or peak day) being considered. The City of Sunnyside calculates maximum day demand herein using a peaking factor, rather than classification-specific consumption data. As a result, the peaking factor from an average day demand (ADD) to a maximum day demand (MDD) is the same for all service categories. ERU values for both ADD and peak day demand (MDD and PHD) have been calculated as shown in Table 2-9. This ERU information is useful for forecasting and analyzing future water system demand.

Single-Family Residential ADD per connection between 2018 and 2022 varied from a low of 254 gpd/service in 2019 to a high of 324 gpd/service in 2022. The average ADD for the period 2018 to 2022 for each user category is shown in Table 2-9.

The peak day demand per service provided in Table 2-8 is based upon the calculated MDD assuming an MDD:ADD ratio of 2.1, which is similar to the ratio identified using the average source production for the period and the highest daily source production, which occurred on August 2, 2018.

TABLE 2-9 EQUIVALENT RESIDENTIAL UNIT FACTORS (ERUS)				
User Category	ADD (2018-2022 avg.)		MDD (July 2021)	
	ADD per Connection (1)	ERUs per Connection	MDD per Connection (2)	ERUs per Connection
Residential				
Single-Family Residential	290	1.0	609	1.0
Multi-Family Residential Units	219	0.8	459	0.8
Non-Residential				
Commercial	2,492	8.6	5,234	8.6
Irrigation (3)	5,289	18.3	22,212	36.5
(1) ADD values based upon 2018 to 2022 average. (2) Maximum Day Demand is based upon MDD:ADD ratio of 2:1. (3) ADD for Irrigation assumes total annual consumption, whereas MDD is based upon 180 days of irrigation use.				

2.3 DISTRIBUTION SYSTEM LEAKAGE (DSL)

Table 2-10 shows annual water production, annual metered water consumption, and the difference between production and total authorized consumption, including the DSL percentage. The City of Sunnyside does not track the estimated authorized consumption from unmetered uses such as water main flushing, fire department use, reservoir turnover and other uses in its consumption data, but it is assumed to be a minimal volume. Water production from Sunnyside's sources for the period 2018 through 2022 averaged 1,032 million gallons per year. Metered consumption during that same time period averaged 983 million gallons per year. The difference between production and authorized consumption for that period 2018-2022 averaged 48.5 million gallons per year, or 4.7% of total water production for the period.

TABLE 2-10 WATER PRODUCTION AND CONSUMPTION 2018-2022 (MG/YR)

Year	Production	Consumption	DSL	% DSL
2018	1075.8	1029.2	46.6	4.6%
2019	1018.4	952.5	65.9	4.0%
2020	1022.7	977.4	45.3	4.4%
2021	1042.3	973.2	69.1	6.7%
2022	999.2	983.7	15.5	1.6%
Average	**1031.7**	**983.2**	**48.5**	**4.7%**

Sunnyside has been diligent in reducing water system DSL through quick response to evidence of leaks, meter calibration, and replacement of meters on a periodic basis. DSL has been below the 10% standard required by DOH for all years reviewed for this Plan. The three-year average DSL for 2020-2022 is equal to 4.3%. The City will continue to track the difference between production and total authorized consumption to maintain DSL below the 10% standard.

2.4 WATER SUPPLY CHARACTERISTICS

The single most important aspect of a water utility is its domestic water supply source. The City of Sunnyside's water supply is dependent on ground water sources. As previously discussed, the City currently utilizes seven active source wells, although the City has preferred to use Wells No. 9 and 11 in recent years because Wells No. 6 and 7 need to be cleaned/rehabilitated to address discoloration and sanding problems. The City plans to address this issue with a capital improvement project soon, as discussed in CHAPTER 8. Wells No. 11, 12, and 13 shared onsite chlorine generation facilities until 2024, therefore use of these sources concurrently led to significant City staff time moving chemical between the sites. The locations of these wells within the water system are shown in Map A in CHAPTER 10. All seven active City wells are located on property owned by the City and have protective covenants establishing a 100-foot sanitary radius. All wells are in locked wellhouse buildings, and the well sites are fenced. Copies of the property deeds and protective covenants for each well are provided in CHAPTER 10.

As discussed later in CHAPTER 3, there have been no significant changes in source well water quality from any of Sunnyside's wells as demonstrated by inorganic chemical and volatile organic chemical monitoring over time. Sunnyside has taken steps to protect its aquifers through implementation of its *Wellhead Protection Plan*. Completed in 2005, Sunnyside's *Wellhead Protection Plan* is intended to protect aquifers through a combination of regulatory measures, best management practices, and public education and awareness. Details of Sunnyside's *Wellhead Protection Program* are provided in CHAPTER 5.

The City recognizes the importance of monitoring groundwater level trends as it has a direct impact on the long-term reliability of the City's groundwater sources. The City records groundwater levels through the telemetry system, and instantaneous levels are available through the software display at the Water Division building. Table 2-11 summarizes minimum groundwater levels at each source for the period 2018-2022. Telemetry monitors groundwater elevations, which fluctuate significantly based upon whether the well is operating, the duration of pumping, and the amount of time that the well rests between operating cycles. It is unlikely that groundwater levels are varying to the extent shown below, and instead the differences are likely a result of a changed operating condition for the pumps, with corresponding dynamic water level changes.

TABLE 2-11 SUNNYSIDE GROUNDWATER LEVEL CONDITIONS 2018 – 2021

Period	Source					
	Well No. 6 (ft BGS)	Well No. 8 (ft BGS)	Well No. 9 (ft BGS)	Well No. 11 (ft BGS)	Well No. 12 (ft BGS)	Well No. 13 (ft BGS)
Jan-Jun 2018	480.4	217.6	130.1	332.0	316.5	235.5
Jul - Dec 2018	483.7	225.2	145.7	332.0	316.5	235.5
Jan-Jun 2019	483.7	---	140.3	332.0	316.5	235.5
Jul - Dec 2019	483.7	---	148.9	332.0	316.5	235.5
Jan-Jun 2020	483.7	---	136.4	332.0	316.5	235.5
Jul - Dec 2020	483.7	---	149.0	332.0	316.5	235.5
Jan-Jun 2021	483.7	---	129.9	217.1	316.5	235.5
Jul - Dec 2021	316.0	---	128.0	231.7	287.7	235.5
Jan-Jun 2022	---	---	144.2	---	316.5	235.5
Jul - Dec 2022	---	---	165.8	---	316.5	235.5

2.5 FUTURE POPULATION PROJECTIONS AND LAND USE

Water use is contingent upon several varying and uncertain factors, which makes forecasting future demand difficult. Of primary importance are the following factors:

1. Population
2. Type of residential development (i.e., single-family, or multi-family)
3. Per capita income
4. Types of commercial and industrial enterprises
5. Climate
6. Irrigation use of water
7. Price charged for water and type of rate structure (i.e., the base water quantity and cost for individual service meters)

Forecasting future system demands is based upon the projected number of single-family residential, multi-family residential, commercial, and irrigation service categories, as well as the annual average day, maximum day, and peak hour water demand.

The population projections for the City of Sunnyside are estimated based on reviewing past population trends and confirming recent City planning efforts. Future water services are based upon the projected population growth within the City and the UGA.

Other factors such as income, climate, and water cost will be assumed to remain consistent with current trends. Climate does have a major influence on Sunnyside's water consumption during summer months due to the use of domestic water supply for irrigation purposes. However, the area's climate has generally remained consistent with historical averages.

2.5.1 Projected Population

As identified above, the City of Sunnyside has undertaken recent planning efforts with a higher annual growth rate than Yakima County or Office of Financial Management, due to an expectation of accelerated growth in the future. While conservative, it also serves to protect the City from underestimating the need for capital projects and being incapable of serving potential new customers. Table 2-12 identifies the projected population for the City for the next 5, 10, and 20 years.

TABLE 2-12 CITY POPULATION PROJECTIONS

Year	Population	Annual Growth Rate
2023	17,378	2.0%
2024	17,726	2.0%
2025	18,081	2.0%
2026	18,443	2.0%
2027	18,812	2.0%
2028	19,188	2.0%
2034	21,609	2.0%
2044	26,341	2.0%

2.6 FUTURE WATER DEMAND

2.6.1 Future Water Service Connections

The number of single-family residential water services within the City Limits is anticipated to increase consistently with the population growth rate projection, and the number of new connections within Pressure Zones 2 and 3 will be consistent with the assumed existing 15.5-percent of overall single-family residential connections. It is further assumed that other user categories will increase at the same 2.0% annual growth rate. Table 2-13 identifies the projected number of future connections for each user category, and Table 2-14 provides the number of connections in each pressure zone for 2034 and 2044, respectively.

TABLE 2-13 FUTURE WATER CONNECTIONS BY USER CATEGORY

User Category	2023	2024	2025	2026	2027	2028	2034	2044
Residential Connections								
Single-Family Residential	3,071	3,132	3,195	3,259	3,324	3,391	3,818	4,655
Multi-Family Residential	173	176	180	184	187	191	215	262
Multi-Family Residential Units	1,903	1,936	1,980	2,024	2,057	2,101	2,365	2,882
Non-Residential Connections								
Commercial	574	585	597	609	621	634	714	870
Irrigation	11	11	11	12	12	12	14	17
Total Services	**5,559**	**5,665**	**5,784**	**5,904**	**6,014**	**6,138**	**6,911**	**8,423**

TABLE 2-14 YEARS 2034 AND 2044 WATER CONNECTIONS PER ZONE BY USER CATEGORY						
User Category	**2034 Zone 1**	**2034 Zones 2 and 3**	**2034 Total**	**2044 Zone 1**	**2044 Zones 2 and 3**	**2044 Total**
Residential Connections						
Single-Family Residential	3,227	591	**3,818**	3,933	722	**4,655**
Multi-Family Residential	215	0	**215**	262	0	**262**
Multi-Family Residential Units	2,365	0	**2,365**	2,882	0	**2,882**
Non-Residential Connections						
Commercial	714	0	**714**	870	0	**870**
Irrigation	14	0	**14**	17	0	**17**
Total Services	**6,319**	**591**	**6,911**	**7,701**	**722**	**8,423**

2.6.2 Future ERUs and ADD

The projected number of water system connections, ERUs and ADD, are calculated from the future water system connections provided in Section 2.6.1 and the average day demand (ADD) per ERU by user category, provided in Table 2-9.

The calculated future number of connections, ERUs and projected ADD for years 2023, 2034 and 2044 are presented in Table 2-15, Table 2-16, and Table 2-17, respectively. To accommodate the uncertainties in projecting future water demand and to account for system losses, a 10% contingency factor has been applied to the ADD projections, as shown.

TABLE 2-15 YEAR 2023 ERUS AND ADD					
User Category	No. of Connections	ERUs/ Connection	ADD/ERU (gallons)	Total ERUs	Total ADD (gallons)
Residential Connections					
Single-Family Residential	3,071	1.0	290	3,071	899,900
Multi-Family Residential Units	1,903	0.8	219	1,436	416,100
Non-Residential Connections					
Commercial	574	8.6	2,492	4,937	1,430,700
Irrigation	11	18.3	5,289	201	58,200
Subtotal	**5,559**			**9,645**	**2,794,900**
10% Contingency				965	279,500
TOTAL	**5,559**			**10,610**	**3,074,400**

TABLE 2-16 YEAR 2034 ERUS AND ADD					
User Category	No. of Connections	ERUs/ Connection	ADD/ERU (gallons)	Total ERUs	Total ADD (gallons)
Residential Connections					
Single-Family Residential	3,818	1.0	290	3,818	1,106,400
Multi-Family Residential Units	2,365	0.8	219	1,784	517,000
Non-Residential Connections					
Commercial	714	8.6	2,492	6,138	1,778,700
Irrigation	14	18.3	5,289	250	72,400
Subtotal	**6,911**			**11,990**	**3,474,500**
10% Contingency				1,199	347,500
TOTAL	**6,911**			**13,189**	**3,822,000**

TABLE 2-17 YEAR 2044 ERUS AND ADD					
User Category	No. of Connections	ERUs/ Connection	ADD/ERU (gallons)	Total ERUs	Total ADD (gallons)
Residential Connections					
Single-Family Residential	4,655	1.0	290	4,655	1,349,000
Multi-Family Residential Units	2,882	0.8	219	2,174	630,000
Non-Residential Connections					
Commercial	870	8.6	2,492	7,483	2,168,500
Irrigation	17	18.3	5,289	304	88,100
Subtotal	**8,423**			**14,616**	**4,235,600**
10% Contingency				1,462	423,600
TOTAL	**8,423**			**16,078**	**4,659,200**

2.6.3 Future MDD and PHD

Future MDD and PHD for the system were calculated for the years 2023, 2034 and 2044 using the projected number of connections for each user category and demand per service discussed in Section 2.5.3. Calculated future MDD and PHD values for 2023, 2034 and 2044 are presented in Table 2-18, Table 2-19, and Table 2-20, respectively. To accommodate the uncertainties in projecting future water demand and to account for system losses, a 10% contingency factor has been applied to the MDD and PHD projections, as shown.

TABLE 2-18 YEAR 2023 MDD AND PHD							
User Category	No. of Connections	ERUs/ Connection	Total ERUs	MDD/ Connect. (gpd)	Total MDD (gpd)	PHD/ Connect. (gpm)	Total PHD (gpm)
Residential Connections							
Single-Family Residential	3,071	1.0	3,071	609	1,868,900	0.7	2,190
Multi-Family Residential Units	1,903	0.8	1,436	459	873,600	0.5	1,025
Non-Residential Connections							
Commercial	574	8.6	4,937	5,234	3,004,300	5.5	3,151
Irrigation	11	36.5	402	22,212	244,300	39.4	433
Subtotal	**5,559**		**9,846**		**5,991,100**		**6,799**
10% Contingency			985		599,100		680
TOTAL	**5,559**		**10,831**		**6,590,200**		**7,479**

TABLE 2-19 YEAR 2034 MDD AND PHD							
User Category	No. of Connections	ERUs/ Connection	Total ERUs	MDD/ Connect. (gpd)	Total MDD (gpd)	PHD/ Connect. (gpm)	Total PHD (gpm)
Residential Connections							
Single-Family Residential	3,818	1.0	3,818	609	2,323,700	0.7	2,723
Multi-Family Residential Units	2,365	0.8	1,784	459	1,085,700	0.5	1,274
Non-Residential Connections							
Commercial	714	8.6	6,138	5,234	3,735,400	5.5	3,918
Irrigation	14	36.5	499	22,212	303,800	39.4	538
Subtotal	**6,911**		**12,239**		**7,448,600**		**8,453**
10% Contingency			1,224		744,900		845
TOTAL	**6,911**		**13,463**		**8,193,500**		**9,298**

TABLE 2-20 YEAR 2044 MDD AND PHD							
User Category	No. of Connections	ERUs/ Connection	Total ERUs	MDD/ Connect. (gpd)	Total MDD (gpd)	PHD/ Connect. (gpm)	Total PHD (gpm)
Residential Connections							
Single-Family Residential	4,655	1.0	4,655	609	2,832,600	0.7	3,319
Multi-Family Residential Units	2,882	0.8	2,174	459	1,323,000	0.5	1,552
Non-Residential Connections							
Commercial	870	8.6	7,483	5,234	4,553,500	5.5	4,776
Irrigation	17	36.5	609	22,212	370,300	39.4	656
Subtotal	**8,423**		**14,921**		**9,079,400**		**10,304**
10% Contingency			1,492		907,900		1,030
TOTAL	**8,423**		**16,413**		**9,987,300**		**11,334**

Shown below in Table 2-21, Table 2-22, and Table 2-23, the ERUs, MDD, and PHD are listed by pressure zone for years 2023, 2034, and 2044 respectively.

TABLE 2-21 YEAR 2023 WATER DEMAND BY PRESSURE ZONE			
Single-Family Residential	**Zone 1**	**Zones 2 and 3**	**Total**
Number Of Services	2,595	476	3,071
Number Of ERUs (ERU_{MDD})	2,854	524	3,378
Annual Demand (MGD)	827,200	151,700	978,900
Maximum Day Demand (MGD)	1,737,100	318,600	2,055,700
Peak Hour Demand (GPM)	2,036	373	2,409
Multi-Family Residential			
Number Of Services	1,903	0	1,903
Number Of ERUs (ERU_{MDD})	1,580	0	1,580
Annual Demand (MGD)	457,700	0	457,700
Maximum Day Demand (MGD)	961,000	0	961,000
Peak Hour Demand (GPM)	1,128	0	1,128
Commercial			
Number Of Services	574	0	574
Number Of ERUs (ERU_{MDD})	5,431	0	5,431
Annual Demand (MGD)	1,573,770	0	1,573,770
Maximum Day Demand (MGD)	3,304,700	0	3,304,700
Peak Hour Demand (GPM)	3,466	0	3,466
Irrigation			
Number Of Services	11	0	11
Number Of ERUs (ERU_{MDD})	440	0	440
Annual Demand (MGD)	64,000	0	64,000
Maximum Day Demand (MGD)	268,700	0	268,700
Peak Hour Demand (GPM)	476	0	476
Total			
Number Of Services	5,083	476	5,559
Number Of ERUs (ERU_{MDD})	10,305	524	10,828
Annual Demand (MGD)	2,922,670	151,700	3,074,370
Maximum Day Demand (MGD)	6,271,500	318,600	6,590,100
Peak Hour Demand (GPM)	7,106	373	7,479

TABLE 2-22 YEAR 2034 WATER DEMAND BY PRESSURE ZONE			
Single-Family Residential	**Zone 1**	**Zones 2 and 3**	**Total**
Number Of Services	3,226	592	3,818
Number Of ERUs (ERU_{MDD})	3,549	651	4,200
Annual Demand (MGD)	1,028,400	188,600	1,217,000
Maximum Day Demand (MGD)	2,159,900	396,200	2,556,100
Peak Hour Demand (GPM)	2,531	464	2,995
Multi-Family Residential			
Number Of Services	2,365	0	2,365
Number Of ERUs (ERU_{MDD})	1,962	0	1,962
Annual Demand (MGD)	568,700	0	568,700
Maximum Day Demand (MGD)	1,194,300	0	1,194,300
Peak Hour Demand (GPM)	1,401	0	1,401
Commercial			
Number Of Services	714	0	714
Number Of ERUs (ERU_{MDD})	6,752	0	6,752
Annual Demand (MGD)	1,956,600	0	1,956,600
Maximum Day Demand (MGD)	4,108,900	0	4,108,900
Peak Hour Demand (GPM)	4,310	0	4,310
Irrigation			
Number Of Services	14	0	14
Number Of ERUs (ERU_{MDD})	550	0	550
Annual Demand (MGD)	79,600	0	79,600
Maximum Day Demand (MGD)	334,200	0	334,200
Peak Hour Demand (GPM)	592	0	592
Total			
Number Of Services	6,319	592	6,910
Number Of ERUs (ERU_{MDD})	12,813	651	13,464
Annual Demand (MGD)	3,633,300	188,600	3,821,900
Maximum Day Demand (MGD)	7,797,300	396,200	8,193,400
Peak Hour Demand (GPM)	8,834	464	9,298

TABLE 2-23 YEAR 2043 WATER DEMAND BY PRESSURE ZONE			
Single-Family Residential	**Zone 1**	**Zones 2 and 3**	**Total**
Number Of Services	3,933	721	4,655
Number Of ERUs (ERU_{MDD})	4,327	794	5,121
Annual Demand (MGD)	1,253,900	230,000	1,483,900
Maximum Day Demand (MGD)	2,632,900	483,000	3,115,900
Peak Hour Demand (GPM)	3,085	566	3,651
Multi-Family Residential			
Number Of Services	2,882	0	2,882
Number Of ERUs (ERU_{MDD})	2,391	0	2,391
Annual Demand (MGD)	693,000	0	693,000
Maximum Day Demand (MGD)	1,455,300	0	1,455,300
Peak Hour Demand (GPM)	1,708	0	1,708
Commercial			
Number Of Services	870	0	870
Number Of ERUs (ERU_{MDD})	8,231	0	8,231
Annual Demand (MGD)	2,385,400	0	2,385,400
Maximum Day Demand (MGD)	5,008,900	0	5,008,900
Peak Hour Demand (GPM)	5,253	0	5,253
Irrigation			
Number Of Services	17	0	17
Number Of ERUs (ERU_{MDD})	669	0	669
Annual Demand (MGD)	96,900	0	96,900
Maximum Day Demand (MGD)	407,300	0	407,300
Peak Hour Demand (GPM)	722	0	722
Total			
Number Of Services	7,702	721	8,425
Number Of ERUs (ERU_{MDD})	15,618	794	16,414
Annual Demand (MGD)	4,429,200	230,000	4,659,200
Maximum Day Demand (MGD)	9,504,400	483,000	9,987,500
Peak Hour Demand (GPM)	10,768	566	11,334

City of SUNNYSIDE WASHINGTON

CHAPTER 3

SYSTEM INVENTORY AND ANALYSIS

HLA Engineering and Land Surveying, Inc.

3.1 ASSET MANAGEMENT – ASSET INVENTORY AND ANALYSIS

The existing City of Sunnyside domestic water system consists of three distribution pressure zones, as shown in Table 3-1, all of which provide a minimum of 30 psi service pressure, as required by DOH. Information on the three pressure zones, including their service elevations, pressure ranges, and how each zone is served is provided in Table 3-1 and Figure 3-1.

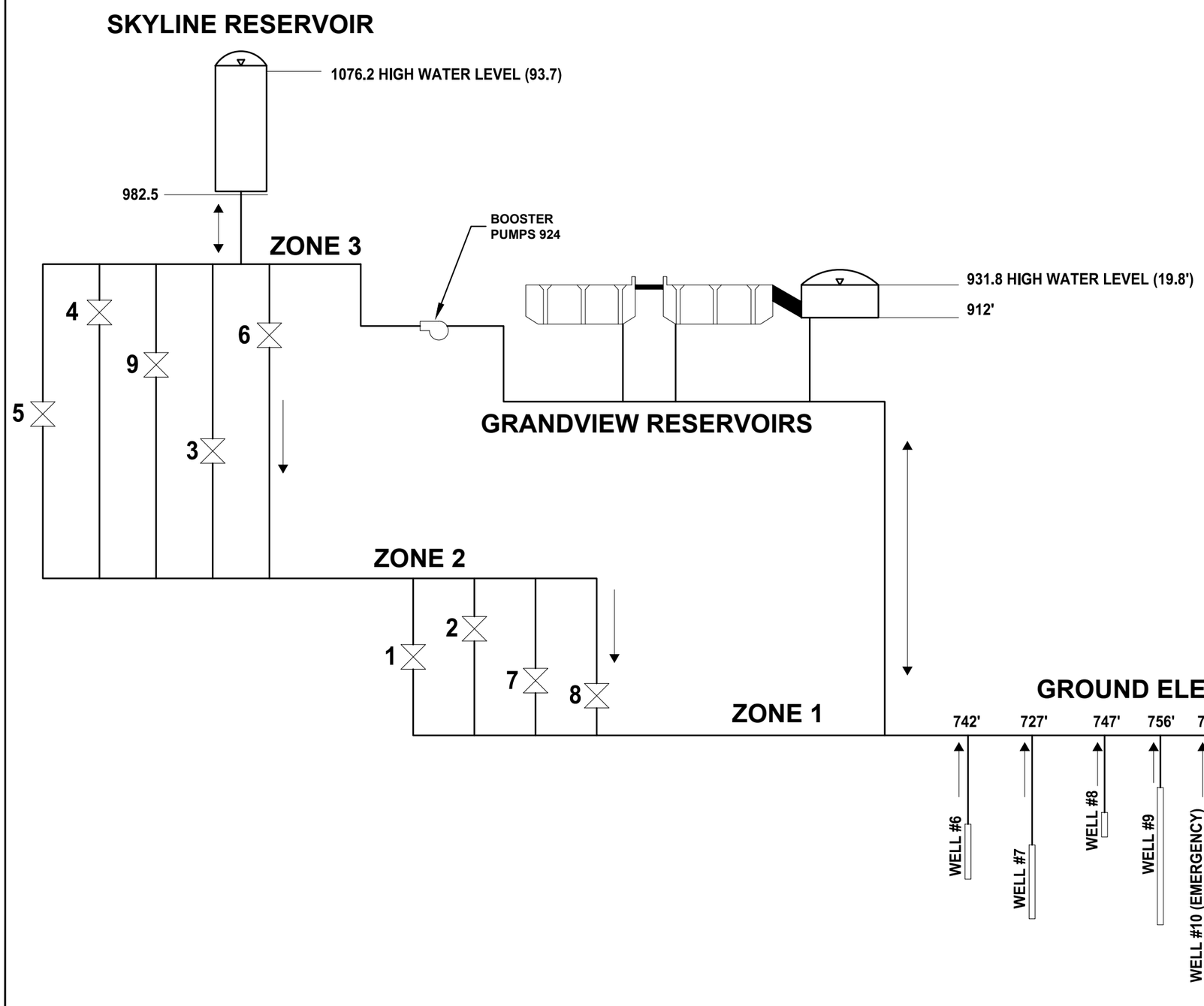
TABLE 3-1 SUNNYSIDE WATER SYSTEM PRESSURE ZONES

Service Pressure Zone	Supply Source	Storage Reservoirs	Highest Service Elevation (Static Pressure)	Lowest Service Elevation (Static Pressure)
Zone 1	Wells 6, 7, 8, 9, 11, 12, 13	Grandview 1, 2, 3 (2.4 MG)	850 ft. (35 psi)	689 ft. (105 psi)
Zone 2	Zone 3 via Pressure Reducing Valves 3,4,5,6,9	-	920 ft (36 psi)	806 ft (85 psi)
Zone 3	Grandview Booster Pumps	Skyline (1.0 MG)	987 ft (40 psi)	879 ft (85 psi)

The City is supplied with water from seven (7) active source wells. The City also has five inactive source wells (Well No. 1, Well No. 3, Well No. 4, Well No. 5, Well No. 10). Wells No. 1, 3, 4, and 5 were decommissioned at various dates between 1992 and 2011, and Well No. 10 is maintained as an emergency source due to water quality concerns. The current maximum pumping capacity of the 7 active wells is 5,500 gallons per minute (gpm) or 7.92 million gallons per day (MGD), which does not include the City's emergency source (Well No. 10). However, the City's total existing water rights only allow for a maximum instantaneous withdrawal of 5,020 gpm. Further discussion of the City's existing water rights is provided in Section 3.4.3

Sunnyside's total reservoir capacity is 3.4 million gallons, although a portion of the storage is considered to be dead storage as service pressures would drop below 30 psi when the tanks are drawn down. The lowest pressure level (Zone 1) is served by three reinforced concrete reservoirs (Grandview Reservoirs 1, 2, and 3) with a total capacity of 2.4 million gallons. Water from Zone 1 is boosted into the Zone 3 (upper) pressure level through the Grandview Booster Station located at the Grandview Booster Station site. Service pressure in Zone 3 is maintained by a 1.0-million-gallon welded steel reservoir (Skyline Reservoir). Water is provided to Zone 2 through a series of pressure reducing valves, and Zone 1 can be served from Zone 3 through pressure reducing valves during emergency conditions.

Figure 3-2 provides a schematic depicting the inter-relationship between the water system components and the location of major system components. The existing distribution system is looped where possible and consists of various water main sizes, primarily between 6-inch and 12-inch diameter. An enlarged map (Map A) of Sunnyside's existing water system is provided in CHAPTER 10.



CITY OF SUNNYSIDE

Water System Plan Update

WATER SYSTEM SCHEMATIC

PRV NO.	ELEVATION AT VALVE
1	809
2	822
3	817
4	916
5	884
6	914
7	803
8	802
9	909

RESERVOIRS	VOLUME	OVERFLOW ELEVATION
GRANDVIEW	2.44 MG	931.8
SKYLINE	0.98 MG	1076.2

WELL NO.	DEPTH
6	742
7	727
8	747
9	756
10	745
11	750
12	767
13	764

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP-Figures.dwg

FIGURE 3-1

CITY OF SUNNYSIDE

Water System Plan Update

WATER SYSTEM MAJOR COMPONENTS MAP

N
W E
S

0 1250 2500

WELL 12
DEPTH 397 FT
CAPACITY 350 GPM

WELL 8
DEPTH 440 FT
CAPACITY 800 GPM

WELL 11
DEPTH 435 FT
CAPACITY 500 GPM

WELL 10
DEPTH 1,701 FT
CAPACITY 1,000 GPM

WELL 9
DEPTH 919 FT
CAPACITY 1,500 GPM

WELL 13
DEPTH 431 FT
CAPACITY 650 GPM

GRANDVIEW RESERVOIRS
TOTAL CAPACITY 2.44 MG
OVERFLOW ELEVATION 938 FT

910

WELL 6
DEPTH 769 FT
CAPACITY 650 GPM

SKYLINE RESERVOIR
TOTAL CAPACITY 0.98 MG
OVERFLOW ELEVATION 1,078 FT

ZONE 3

GRANDVIEW BOOSTER STATION
TOTAL CAPACITY 1,693 GPM

ZONE 2
810

WELL 7
DEPTH 1,057 FT
CAPACITY 1,000 GPM

ZONE 1

LEGEND

- CITY LIMITS
- FUTURE SERVICE AREA
- ELEVATION CONTOUR LINE
- WATER MAINS
- WATER MAIN 12" AND GREATER
- RESERVOIR
- WELL
- BOOSTER PUMP STATION
- ZONE 1 (710 – 810 FT.)
- ZONE 2 (810 – 910 FT.)
- ZONE 3 (910 – 980 FT.)

NOTE: STATIC PRESSURE ZONE BOUNDARIES ARE BASED ON YAKIMA COUNTY CONTOURS AND DO NOT REPRESENT ACTUAL ELEVATIONS OF ALL SERVICES. BOUNDARIES ARE INTENDED TO BE A GENERAL GUIDE OF THE SERVICE AREA FOR EACH ZONE. ACTUAL ELEVATIONS SHALL BE VERIFIED TO CONFIRM SUPPLY PRESSURES AT EACH SERVICE.

EXISTING NUMBER OF SERVICES IN ZONE 2: 237
EXISTING NUMBER OF SERVICES IN ZONE 3: 194

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP-Figures.dwg

FIGURE 3-2

3.1.1 Water Sources

The City of Sunnyside has eight (8) source wells, all located on City-owned properties within a single service pressure zone, although Well No. 10 is used only as an emergency source due to concerns about water quality. The City's sources are shown in Figure 3-2 and Map A in CHAPTER 10. The following are descriptions of the City's wells and pump installations.

Well No. 6 (S06): Well No. 6 is located adjacent to Sunnyside High School near the intersection of Grant Ave. and S. 16th St. The well was drilled in 1963 to a depth of 769 feet and reconditioned in 2012 to install a 16" steel liner in the lower 523 feet. At that time, the static water level was measured to be 4 feet. The original capacity of the well was 1,380 gpm, but it has since declined to 650 gpm. The wellhouse is a concrete masonry unit (CMU) block construction and is in good condition. Disinfection is provided by a chlorine gas cylinder with Terminator™ emergency shutoff valve.

Well No. 7 (S07): Well No. 7 is located at 198 South Hill Rd. The well was drilled in 1973 to a depth of 1,057 feet and was identified as artesian at that time. The well was originally developed to 1,000 gpm, but its capacity has been increased to 1,100 gpm. The wellhouse is brick construction and is in good condition. Disinfection is provided by a chlorine gas cylinders with Terminator™ emergency shutoff valves.

Well No. 8 (S08): Well No. 8 is located near the police department at 340 Homer St. The well is equipped with a standby generator interior to the wellhouse. The well was drilled in 1994 to a depth of 440 feet and completed to 385 feet. At development, the static water level was 44 feet. The well was originally developed to 800 gpm, but its capacity has since decreased to 750 gpm. The wellhouse is a CMU block construction and is in good condition. Disinfection is provided by chlorine gas cylinders with Terminator™ emergency shutoff valves.

Well No. 9 (S09): Well No. 9 is located south of the airport at 818 E. Edison Ave. The well is equipped with a standby generator exterior to the wellhouse. The well was drilled in 1997 to a depth of 919 feet. The well was originally developed to 1,500 gpm, which is the current capacity of the source. The wellhouse is a CMU block construction and is in good condition. Disinfection is provided by chlorine gas cylinders with Terminator™ emergency shutoff valves. The City replaced the pump in 2023, and the horsepower of the pump approaches the capacity of the wellhouse electrical service. Therefore, if this source were to experience capacity loss due to declining groundwater levels, electrical upgrades would become necessary to maintain source capacity.

Well No. 10 (S10): Well No. 10 is located at 210 S. 7th St. The well was drilled in 1997 to a depth of 1,701 feet to replace Well No. 4. The well was originally developed to 1,000 gpm, which is the current capacity of the source. However, the well is not currently operated on a routine basis due to water quality concerns and is instead maintained for use as an emergency well.

Well No. 11 (S11): Well No. 11 is located at the Well No. 10 site at 210 S. 7th St. The well was drilled in 2005 to a depth of 435 feet and completed to 420 feet. It was reconditioned in 2008 to add an 8" stainless steel screen between 357 ft. below ground surface (bgs) and 420 feet bgs. The well was originally developed to 500 gpm, which is the current capacity of the source. The wellhouse is a CMU block construction and is in good condition. Disinfection is provided by liquid sodium hypochlorite generated on site and stored in an external tank at the wellhouse.

Well No. 12 (S12): Well No. 12 is located at 2330 Outlook Rd and shares a wellhouse with Well No. 13. The well was drilled in 2007 to a depth of 397 feet. The well was originally developed to 350 gpm, which is the current capacity of the source. The wellhouse is a CMU block construction and is in good condition. Disinfection is provided by chlorine gas cylinders with Terminator™ emergency shutoff valves, and there is infrastructure installed to allow liquid sodium hypochlorite to be fed as a system backup.

Well No. 13 (S13): Well No. 13 is located at 2320 Outlook Rd and shares a wellhouse with Well No. 12. The well was drilled in 2010 to a depth of 431 feet. The well was originally developed to 650 gpm, which is the current capacity of the source.

A summary of Sunnyside's source wells, including well depth, current static water levels and capacity is provided in Table 3-2 below. Copies of the well logs, susceptibility assessment surveys, and protective well covenants are included in CHAPTER 10.

TABLE 3-2 SUNNYSIDE SOURCE WELL INFORMATION SUMMARY

Well No. (DOH Source Number)	DOE Well Tag Number	Date Drilled	Depth (ft)	Ground Elevation (ft amsl)	Well Type	Depth to First Open Interval (ft)	Tested Capacity	Original Developed Capacity (gpm)	Current Pumping Rate (gpm)
1		1907-08	166	740	Alluvium		420	490	Decommissioned
2		1927-29	833	740	Rock		230	350	Decommissioned
3		1939-40	1,162	746	Rock		930	780	Decommissioned
4		1944-46	1,576	746	Rock		1,200	1,000	Decommissioned
5		1953-54	458	740	Alluvium		1,400	1,400	Decommissioned
6 (S06)	AFL811	1962-63	769	742	Rock	523	1,570	1,380	650
7 (S07)	ABR059	1972-74	1,057	727	Rock	541	1,000	1,000	1,100
8 (S08)	AFL812	1994	440	747	Alluvium	325	800	800	750
9 (S09)	AFK905	1997	919	756	Rock	471	N/A	1,500	1,500
10 (S10)	AFL815	1998	1701	745	Rock	1,202	2,000	1,000	Emergency Use
11 (S11)	AKN517	2005	435	750	Alluvium	380	800	500	500
12 (S12)	ALM337	2007	397	767	Alluvium	383	N/A	350	350
13 (S13)	BAL875	2010	431	764	Alluvium	351	850	650	650
								Total	**5,500**

Note: Wells No. 12 and 13 are designated as a wellfield.

3.1.2 Water Treatment

Sunnyside provides no treatment for its water supply sources other than chlorine disinfection. Wells No. 6, 7, 8, and 9 utilize gas chlorination. Sodium hypochlorite is generated on-site at Well No. 11 for chlorination of Wells No. 10 and 11. This liquid sodium hypochlorite can be transported by truck to Wells No. 12 and 13 as a backup to the gas chlorination system that was installed at Wells No. 12 and No. 13 site in 2024.

In the *2016 Water System Plan*, the City had planned to replace all the gas chlorination systems in the system with on-site generation. However, the Terminator™ emergency shutoff valves have performed well, and the City has determined that gas chlorination can continue at those wells indefinitely.

To provide a more robust chlorination system and to maintain a more consistent chlorine residual within the distribution system, the City plans to install sodium hypochlorite storage tanks and injectors at the Grandview and Skyline reservoir sites to allow for future emergency chlorination of the water supply, as needed.

3.1.3 Storage Facilities

The City's water storage facilities consist of four reservoirs with a total capacity of 3.4 million gallons (MG) of storage. Not all of the storage is useable due to service connections near the Skyline Reservoir that would be provided with less than 20 psi during an emergency if the storage were drawn down below a particular level. The reservoirs are equipped with high level alarms to notify City staff if the water surface continues to rise above the "Pumps Off" telemetry setpoint. The high-level alarm provides the operators with sufficient time to manually shut off pumps and to prevent an overflow event.

The Grandview Reservoirs are located on Harrison Hill and consist of three side-by-side concrete tanks interconnected to share a common water level. Grandview Reservoirs No. 1 and 2 were built in 1942, and Grandview Reservoir No. 3 was constructed in 1962. These reservoirs establish the static water pressure in Zone 1, and the Grandview Booster Station withdraws from them. The distribution system in the vicinity of the Grandview Reservoirs is designated as Zone 2.

The Skyline Reservoir was built in 1962 and provides water directly to Zone 3, and ultimately to Zone 2 through a series of PRVs. The majority of the storage within Skyline Reservoir is dead storage due to its standpipe construction and ground surface elevation at the City's highest service connections.

Table 3-3 provides a summary of the City's reservoir characteristics.

TABLE 3-3 SUNNYSIDE RESERVOIR INFORMATION

	Grandview Reservoirs	Skyline Reservoir
Type	1 Standpipe 2 In-Ground	Standpipe
Material	Concrete	Welded Steel
Date Constructed	1942, 1942, 1962	1962
Tank Height	26 ft	95.5 ft
Diameter	144.0 ft (1)	42.0 ft
Base Elevation (amsl)	912.0 ft	982.5 ft
Overflow Elevation	938.0 ft	1078.0 ft
High Water Elevation	932.1 ft	1077.2 ft
Total Storage Capacity	2,444,000 gal	982,000 gal
Storage Capacity Above 30 psi	2,444,000 gal	256,000 gal
Storage Capacity Above 20 psi	2,444,000 gal	498,000 gal
Total Dead Storage	0 gal	484,000 gal

(1) Equivalent diameter of three tanks analyzed as a single cylindrical tank.

3.1.4 Booster Pump Stations

The Grandview Booster Station is located at the Grandview Reservoir site and is equipped with five pumps. The booster station pumps water through the Zone 3 distribution system to the Skyline Reservoir. The booster pump operation is controlled by the water elevation in Skyline Reservoir and is varied throughout the year based on anticipated daily water demand in Zones 2 and 3. The booster station is supplied with an emergency generator to provide auxiliary power. Table 3-4 lists basic data for the booster pumps.

TABLE 3-4 GRANDVIEW BOOSTER STATION PUMP CAPACITY

Pump No.	Motor (hp)	Design Capacity (gpm)
1	40	800
2	20	457
3	10	167
4	10	118
5	10	151
TOTAL		**1,693**

3.1.5 Pressure Reducing Valves

Several pressure reducing valves (PRVs) are installed within the City's water system to provide water at an acceptable pressure from Zone 3 to Zone 2. PRVs are also installed between Zone 2 and Zone 1 to allow water to flow to Zone 1 under fire flow or emergency conditions. All of the PRVs have been manufactured by Cla-Val Co. and are housed in concrete vaults. Information on the City's pressure reducing valves is provided in Table 3-5.

TABLE 3-5 PRESSURE REDUCING VALVE INFORMATION

No.	Location	Elevation	Valve Size	Cla-Val Model No.	Inlet PSI	Outlet PSI	Sustaining PSI
Zone 3 → Zone 2							
3	Terry St. & Columbia Ave.	871	6”	90G-01AB	83	58	---
4	Upland Dr. & Vine Ave.	915.9 916.4	1.5” 6”	90G-01AS 90G-01AB	68 68	47 42	---
5	Swan Rd. & Vine Ave.	883.6	6”	92G-01B	80	55	50
6	328 Grandview Ave.	914.3 912.2	1.5” 6”	90G-01AS 90G-01AB	65 65	45 40	---
9	Vine Ave. & Taylor St.	908.8 909	1.5” 6”	90G-01AS 90G-01AB	67 67	50 50	---
Zone 2 → Zone 1							
1	Darrin Ct. & Dayton Dr.	809.9 910.1	1.5” 6”	90G-01AS 92G-01B	98 98	53 48	65 65
2	545 Terry St.	822.2	6”	92G-01B	83	58	50
7	San Clemente Ave. & S. Lookout Dr.	803.4 803.6	2” 6”	92G-01BS 92G-01BCS	102 102	57 52	60 60
8	S. Lookout Dr.	802.0 802.2	2” 6”	92G-01BS 92-01	102 102	58 53	60 60

3.1.6 Telemetry Control System

The City of Sunnyside's water system is controlled by a Supervisory Control and Data Acquisition (SCADA) system that was installed in 2013. The system is located in the Sunnyside Public Works Water Division's office located at 409 E. Lincoln Avenue. The control system is protected with an emergency generator that will keep the SCADA operational in the event of a power outage in the main power grid. Human-Machine Interfaces (HMIs) are located at the various sources to display information relevant to that location and to allow for manual operation of equipment. In situations where City staff need to adjust setpoints or operation elsewhere in the system, access to the control system is obtained with tablets and wireless internet access.

The SCADA system monitors water levels in the Grandview and Skyline Reservoirs and instantaneous flow rates for each well and Grandview Booster Station pump in current operation. Pump operation is controlled by reservoir level setpoints, which are adjusted by operators according to anticipated water demands within the system. Likewise, pump sequencing is varied throughout the year to equalize operating time and to accommodate anticipated daily water demand.

3.1.7 Transmission and Distribution Systems

The City's existing transmission and distribution system along with main sizes and valve and fire hydrant locations is shown in Map A, enclosed in the back pocket of this Plan. Most line sizes within the system are between 6-inches and 12-inches in diameter, but vary from 1-inch to 16-inch. Most water mains are either ductile iron or PVC pipes, and most are looped except where topography or City limit boundaries make loops impractical. Mapping of the City's water system is maintained by Yakima County's Geographic Information System (GIS) staff. An approximate inventory of the total length of Sunnyside's water distribution system piping, including the diameter of pipe is presented below in Table 3-6.

TABLE 3-6 WATER DISTRIBUTION SYSTEM PIPE SIZE SUMMARY

Pipe Diameter (inches)	Length (feet)	Percent of Total
4	13,700	3.5%
6	109,900	27.8%
8	107,300	27.2%
10	62,600	15.8%
12	100,400	25.4%
16	1,100	0.3%
TOTAL	**395,000**	**100%**

3.1.8 Asset Condition Assessment

The age and condition of the City's major water system assets is summarized in Table 3-7. This information is valuable in evaluating and timing of future maintenance improvements necessary to maintain a high level of system reliability. Condition ratings provided in Table 3-7 are based on DOH recommendations and the descriptions provided in the Asset Inventory Worksheet developed by Rural Community Assistance Corporation (RCAC). In general, a rating of 1 is equal to good and/or expected condition and a rating of 10 equal to unserviceable (may need replacement) condition.

TABLE 3-7 ASSET CONDITION ASSESSMENT SUMMARY

Water System Component/Name, Capacity, and Type	Date Originally Constructed	Expected Useful Life (Years)**	Date of Last Service/ Replacement	Cost for Replacement	Critical Number (1 to 5)***	Condition Rating*	Expected Remaining Useful Life (Years)
Well No. 6							
650 gpm, 200 HP vertical turbine pump	1963	15	N/A	$100,000	3	8	5-10
Wellhouse	1963	60	N/A	$1,500,000	3	3	7-12
Well No. 7							
1,100 gpm, 200 HP vertical turbine pump	1973	15	N/A	$100,000	3	5	5-10
Wellhouse	1973	60	N/A	$1,500,000	3	4	10-15
Well No. 8							
750 gpm, 125 HP vertical turbine pump	1994	15	N/A	$65,000	3	3	10-15
Wellhouse	1994	60	N/A	$1,500,000	3	3	20-25
Backup Generator	1994	20	2023	$75,000	3	5	15-20
Well No. 9							
1,500 gpm, 200 HP vertical turbine pump	1997	15	2023	$100,000	2	3	30
Wellhouse	1997	60	N/A	$1,500,000	3	3	20-25
Backup Generator	1997	20	2023	$75,000	3	3	15-20
Wells No. 10 and 11							
450 gpm, 150 HP vertical turbine pump. Pump Model: 10EHM, Motor: MI 10-88-4	2005	15	N/A	$75,000	5	5	5-10
Wellhouse	1997	60	N/A	$1,500,000	3	3	57
Wells No. 12 and 13							
350 gpm, 60 HP vertical turbine pump – Hitachi Ltd (Serial No: G2600101H) 650 gpm, 100 HP vertical turbine pump – Hitachi Ltd (Serial No: G2603113H)	2007 2010	15	N/A	$40,000 $50,000	3 3	2	10-15 10-15
Wellhouse	2007	60	N/A	$1,500,000	3	2	53
Grandview Booster Pump Station							
Pump 1, Cornell Model #3YB40-2 Serial #: 18882-7 9/16 Motor: 40 HP General Electric 230 – 260 Volt 3 Phase - Model #: 5K286JN1103A	Unknown	15	Unknown	$30,000	4	5	5-10
Pump 2, Electrifugal Serial #: 1-5230-42763-1-1 Motor: 20 HP Allis Chalmers 220 – 440 Volt 3 Phase Frame #: 284UCZ	Unknown	15	Unknown	$20,000	4	5	5-10
Pump 3, Electrifugal Serial #: 1-5230-42763-2-1 Motor: 10 HP Allis Chalmers 220 – 440 Volt 3 Phase Frame #: 254UCZ	Unknown	15	Unknown	$15,000	4	5	5-10
Pump 4, Cornell Model #: 2W10-2 Serial #: 7548-6 5/8 Motor: 10 HP General Electric 230 – 460 Volt 3 Phase Model #: 5K213JK66	Unknown	15	Unknown	$20,000	4	5	5-10
Pump 5, Cornell Model #: Tag Unreadable Serial #: Unreadable Motor: 10 HP General Electric 230 – 460 Volt 3 Phase Model #: 5K213JK66	Unknown	15	Unknown	$15,000	4	5	5-10
Structure	1962	60	N/A	$1,000,000	3	3	20-25
Backup Generator	1962	20	2023	$75,000	2	3	15-20

TABLE 3-7 ASSET CONDITION ASSESSMENT SUMMARY (CONTINUED)

Water System Component/Name, Capacity, and Type	Date Originally Constructed	Expected Useful Life (Years)**	Date of Last Service/ Replacement	Cost for Replacement	Critical Number (1 to 5)***	Condition Rating*	Expected Remaining Useful Life (Years)
PRV Station – Darrin Ct. & Dayton Dr.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – 545 Terry St.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – Terry St. & Columbia Ave.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – Upland Dr. & Vine Ave.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – Swan Rd. & Vine Ave.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – 328 Grandview Ave.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – San Clemente Ave. & S. Lookout Dr.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – S. Lookout Dr.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – Vine Ave. & Taylor St.	Unknown	40	2023	$50,000	4	3	20-25
Hydrants	1940 – Present	45	2023	$3,000 - $10,000 each	3	5	On-going
Domestic Water Services	1940 – Present	45	2023	$5,000 /each	4	5	On-going
PRV Station – Darrin Ct. & Dayton Dr.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – 545 Terry St.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – Terry St. & Columbia Ave.	Unknown	40	2023	$50,000	4	3	20-25
PRV Station – Upland Dr. & Vine Ave.	Unknown	40	2023	$50,000	4	3	20-25
Water Lines – 4 Inch Diameter	1940 – Present	75	2023	$4,932,000	1 to 5	5	On-going
Water Lines – 6 Inch Diameter	1940 – Present	75	2023	$39,564,000	1 to 5	5	On-going
Water Lines – 8 Inch Diameter	1940 – Present	75	2023	$38,628,000	1 to 5	5	On-going
Water Lines – 10 Inch Diameter	1940 – Present	75	2023	$22,536,000	1 to 5	5	On-going
Water Lines – 12 Inch Diameter	1940 – Present	75	2023	$36,144,000	1 to 5	5	On-going
Water Lines – 16 Inch Diameter	1940 – Present	75	2023	$396,000	1 to 5	5	On-going

* Condition ratings are based on recommendations in DOH Water System Planning Guidebook, with a rating of 1 equal to good/expected condition and a rating of 10 equal to unserviceable (may need replacement) condition.
** Typical equipment life expectancy from EPA publication EPA 816-R-03-016 Sept. 2003.
*** Critical number designation of 1 means system would essentially shut down if component failed, and no backup is available. Ex: well failure on a single well system without a backup. Critical number of 4 means failure of asset would cause inconvenience, but not cause harm to the system. Critical number of 5 means the asset's condition is not well known and should be later evaluated.

3.2 WATER QUALITY

A public water utility must supply safe and aesthetically pleasing water to its customers. However, source waters of most water utilities vary in the types and amounts of impurities which have been acquired during their passage through atmosphere, ground surfaces, or underground strata. To assure that all drinking water maintains a standard level of quality, acceptable limits of contaminants have been established in WAC Chapter 246-290, *Group A Public Water Supplies*, March 30, 2012, specifically WAC 246-290-310 effective January 4, 2010.

These standards of acceptability establish "maximum contaminant levels" (MCLs) and "Maximum Residual Disinfectant Levels" (MRDLs) for bacteriological, inorganic chemical and physical, and other elements. The Regulations also set forth procedures to be followed if the MCL limits are exceeded.

The City of Sunnyside monitors its system's water quality in accordance with the requirements of WAC 246-290-300, and 246-290-310. Follow-up action, if required, is completed in accordance with the requirements of WAC 24-290-320 and the Groundwater Rule (GWR). Bacteriological monitoring is performed at fifteen (15) locations within the water system in accordance with the City's *Coliform Monitoring Plan*. Lead and copper distribution system monitoring is completed in accordance with the City's lead and copper monitoring program. A copy of the City's lead and copper monitoring plan is included in CHAPTER 10. Inorganic chemical (IOC), volatile organic chemical (VOC), synthetic organic chemical (SOC), and radionuclide testing are performed on the City's source wells. All source wells are tested individually, though Wells 12 and 13 are blended prior to entering the distribution system. These sources are plumbed with isolation valves to allow individual and blended testing.

3.2.1 Water Source Sampling and Testing

Inorganic Chemical (IOC) Monitoring: Water quality monitoring for primary IOCs, secondary IOCs, and physical parameters is required from each source generally once every compliance cycle. Compliance cycles are nine years, per 40 CFR 141.23. Sunnyside collects water samples for IOCs and physical parameters prior to introduction into the distribution system.

Certain chemical characteristics must be monitored more frequently than the general monitoring requirements. For example, Nitrate and Nitrite must be monitored annually. Other chemical characteristics monitoring requirements may be waived by the Department of Health.

Results of Sunnyside's latest source IOC and physical analysis, summarized in Table 3-8, Table 3-9, and Table 3-10, show the City to be in compliance with State standards, with the exception of sodium in Well No. 10, which is an emergency source that is not typically operated. Highlighted cells in Table 3-8 represent samples that exceed the MCL or recommended levels. Copies of the most recent test results for the source wells are provided in the CHAPTER 10 of this Plan.

TABLE 3-8 INORGANIC (PRIMARY SUBSTANCES) CHEMICAL ANALYSIS SUMMARY								
Chemical Characteristics	MCL (mg/l)	Well Source						
		6	7	8	9	10	11	12+13
Antimony (Sb)	0.006	---	0.006	0.006	0.006	0.005	0.003	0.006
Arsenic (As)	0.010	0.008	0.003	0.003	0.005	0.01	0.003	0.006
Barium (Ba)	2.0	.03	0.02	0.10	0.06	0.10	0.10	0.03
Beryllium (Be)	0.004	.0001	0.001	0.001	0.001	0.003	0.0003	0.001
Cadmium (Cd)	0.005	0.002	0.002	0.002	0.002	0.002	0.001	0.002
Chromium (Cr)	0.1	0.02	0.02	0.001	0.02	0.01	0.003	0.02
Copper (Cu)*	1.3	0.02	0.02	0.02	0.01	0.20	0.02	0.01
Cyanide (HCN)	0.2	0.01	---	0.01	0.01	0.05	0.05	0.01
Fluoride (F)	4.0	0.36	0.35	0.40	0.36	0.70	0.45	0.35
Lead (Pb)*	0.015	0.001	0.001	0.001	0.001	0.002	0.001	0.001
Mercury (Hg)	0.002	0.0004	0.0004	0.0004	0.0004	0.0005	0.0002	0.0004
Nickel (Ni)	0.10	0.10	0.10	0.10	0.10	0.04	0.001	0.10
Nitrate (as N)	10.0	0.5	0.5	2.1	1.0	0.5	2.2	0.5
Nitrite (as N)	1.0	0.1	0.1	0.1	0.1	---	0.1	0.1
Selenium (Se)	0.05	0.01	0.01	0.01	0.01	0.01	0.002	0.01
Sodium (Na)*	20.0	12.8	19.1	18.9	18.7	39.0	5.0	18.0
Thallium (Tl)	0.002	0.002	---	0.002	0.002	0.002	0.001	0.002

* No DOH established MCL. Represents EPA established “action levels” for lead and copper, and recommended level for sodium.

TABLE 3-9 INORGANIC (SECONDARY SUBSTANCES) CHEMICAL ANALYSIS SUMMARY								
Chemical Characteristics	MCL (mg/l)	Well Source						
		6	7	8	9	10	11	12+13
Chloride (Cl)	250	7	7	10	9	20	11	8
Fluoride (F)	2.0	0.4	0.4	0.4	0.4	0.7	0.5	0.4
Iron (Fe)	0.3	0.1	0.1	0.1	0.1	0.1	0.001	0.1
Manganese (Mn)	0.05	0.04	0.03	0.001	0.004	0.03	0.01	0.01
Silver (Ag)	0.1	0.1	0.1	0.1	0.1	0.01	0.1	0.1
Sulfate (SO_4)	250	32	1	33	29	10	32	30
Zinc (Zn)	5.0	0.2	0.2	0.2	0.2	0.2	0.2	0.01
Color	15 Color Units	11	5	15	15	5	15	15
Specific Conductivity	700 umhos/cm	328	299	398	336	330	373	312
Total Dissolved Solids (TDS)	500	243	---	---	---	---	283	---

Nitrate/Nitrite Monitoring: The City of Sunnyside conducts annual monitoring for Nitrate and Nitrite on the City wells identified in the water quality monitoring schedule. The maximum contaminant levels (MCL) for Nitrate and Nitrite are 10.0 mg/l and 1.0 mg/l, respectively. Nitrates that exceed this concentration in drinking water can be a health hazard, especially to infants under six months of age.

Results of Sunnyside's nitrate monitoring for the wells from 2017 through 2022 for all wells is summarized in Table 3-10. Well No. 10 was not tested for nitrate during the 2017-2022 period and is therefore omitted from the table.

TABLE 3-10 NITRATE / NITRITE CHEMICAL ANALYSIS RESULTS						
	2017	2018	2019	2020	2021	2022
Well No. 6						
Nitrate (NO_3-N)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrite (NO_2-N)	---	---	---	---	<0.1	<0.1
Total Nitrate/Nitrite	---	---	---	---	<0.5	<0.5
Well No. 7						
Nitrate (NO_3-N)	<0.5	<0.5	<0.5	<0.5	<0.5	---
Nitrite (NO_2-N)	---	---	<0.1	---	<0.1	---
Total Nitrate/Nitrite	---	---	<0.5	---	<0.5	---
Well No. 8						
Nitrate (NO_3-N)	1.8	1.7	1.7	1.7	2.1	2.1
Nitrite (NO_2-N)	---	---	---	---	<0.1	<0.1
Total Nitrate/Nitrite	---	---	---	---	2.1	2.1
Well No. 9						
Nitrate (NO_3-N)	0.7	0.7	0.5	0.9	1.1	1.0
Nitrite (NO_2-N)	---	---	---	---	<0.1	<0.1
Total Nitrate/Nitrite	---	---	---	---	1.1	1.0
Well No. 11						
Nitrate (NO_3-N)	1.8	1.6	2.1	2.3	2.2	---
Nitrite (NO_2-N)	---	---	---	---	<0.1	---
Total Nitrate/Nitrite	---	---	---	---	2.2	---
Wells No. 12 and 13						
Nitrate (NO_3-N)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nitrite (NO_2-N)	---	---	---	---	<0.1	<0.1
Total Nitrate/Nitrite	---	---	---	---	<0.5	<0.5

The test results for the nitrate/nitrite analysis show the City to be in compliance with State standards. The test results from the nitrate/nitrite analysis for all the City's wells are provided in the Miscellaneous Documents Chapter (CHAPTER 10) of this Plan.

Volatile Organic Chemical Monitoring: Volatile Organic Chemical (VOC) monitoring is required once every three months during the first year of testing. Samples are to be taken following water treatment. If no VOCs are detected during the first year's testing, monitoring frequency can be reduced. Sunnyside conducted VOC testing on its source wells as shown on Table 3-11.

TABLE 3-11 SOURCE WELL VOC TESTING					
Source	Month - Year				
Well No. 6	Mar – 2021	Mar – 2015	Jul – 2010	Jul – 2006	Aug – 2003
Well No. 7	Jul – 2022	Jul – 2016	Jul – 2013	Jul – 2010	Jul – 2006
Well No. 8	Oct – 2018	Oct – 2012	Jul – 2006	Sept – 1999	May – 1997
Well No. 9	May – 2021	May – 2015	May – 2009	Jul – 2002	Mar – 2001
Well No. 11	May – 2021	May – 2015	May – 2009	Sept – 2008	Jun – 2007
Wells No. 12 and 13	Jun – 2016	–	–	–	–

Test results show the City follows State standards. The City tests for trihalomethanes (TTHM) along with VOC testing, and test results showed no presence of any of these substances in the water from the City's wells. Copies of the VOC and trihalomethanes test results are provided in CHAPTER 10 of this Plan.

Synthetic Organic Chemical (SOC) Monitoring: SOC monitoring is required once every year for the first three years of sampling, per 40 CFR 141.24. Samples are to be taken following water treatment. If no SOCs are detected during the first three years of testing, future monitoring shall be at least once every three years. The City currently has a waiver from the Department of Health and is not required to complete SOC testing through December 2025.

Radionuclide Monitoring: For the City of Sunnyside, radionuclide sampling from each source is required once every six years based on criteria set forth in 40 CFR 141.26. Sunnyside has completed radionuclide testing on its source wells as shown in Table 3-12.

TABLE 3-12 SOURCE WELL RADIONUCLIDE TESTING					
Source	Month - Year				
Well No. 6	May – 2021	May – 2015	May – 2009	Jul – 2006	Oct – 2004
Well No. 7	May – 2021	May – 2015	May – 2009	Jul – 2006	Oct – 2004
Well No. 8	May – 2021	May – 2015	May – 2009	Jul – 2006	Oct – 2004
Well No. 9	Sept – 2019	May – 2018	May – 2015	May – 2009	Jul – 2006
Well No. 11	Apr – 2022	Nov – 2016	Apr – 2016	Apr – 2010	Jun – 2005
Wells No. 12 and 13	Oct – 2017	–	–	–	–

Test results show the City follows State standards. A copy of the radionuclide analysis test results is provided in CHAPTER 10 of this Plan.

3.2.2 Distribution System Sampling and Testing

Bacteriological: Drinking water samples are required to be collected monthly at various locations throughout the water distribution system for bacteriological analysis in accordance with the City's *Coliform Monitoring Plan*. The minimum number of samples required for collection by a water utility is based on the population served. The City of Sunnyside is required to sample a minimum of fifteen (15) locations within the distribution system. The *Coliform Monitoring Plan* and representative copies of bacteriological analysis results are provided in the CHAPTER 10 of this Plan.

Disinfection Byproducts (DBPs): The addition of chlorine to drinking water kills or inactivates harmful organisms that may cause various diseases; this process is known as disinfection. However, chlorine is an active substance and reacts with naturally occurring substances to form harmful compounds known as disinfection byproducts (DBPs). The most common disinfection byproducts formed when chlorine is used are trihalomethanes (TTHMs) and haloacetic acids (HAA5).

The EPA issued the Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 Rule) in 1998 to regulate four DBPs: total trihalomethanes (TTHMs), haloacetic acids (HAA5), Bromate and Chlorite. In 2006, EPA enacted new rules for disinfection byproducts monitoring, known as the Stage 2 Rule. Under the Stage 2 Rule, water systems must monitor at locations with the highest averages of TTHMs and HAA5. To determine these locations, the Stage 2 Rule requires many systems to complete an Initial Distribution System Evaluation (IDSE). Depending on the water system size and historical TTHM and HAA5 distribution system concentration, some water systems are exempt from the IDSE requirement through a 40/30 certification. Once the monitoring locations are established, one dual sample set of TTHM and HAA5 samples is required at each of two locations annually (unless maximum historical TTHM and HAA5 concentrations occur at the same location). The compliance determination for the Stage 2 Rule is based on a locational running annual average (LRAA), meaning compliance must be met at each monitoring location instead of the system-wide running annual average (RAA) used under the Stage 1 Rule. The City's Disinfection Byproducts Monitoring Plan is included in CHAPTER 10 for reference.

Lead and Copper: Per its WQMS, the City is required to collect thirty (30) samples every three years to determine the lead and copper concentrations in drinking water to which its customers may be exposed. Results from the latest (2022) monitoring indicated that one of the samples exceeded the federal action level of 0.015 parts per million for lead, and 1.30 parts per million for copper, but exceedances are not common within the distribution system. Table 3-13 provides a summary of the 2022 lead and copper monitoring results, which are also provided in CHAPTER 10 of this Plan.

EPA published the revised Lead and Copper Rule on January 15, 2021, which requires that all community water systems develop an inventory of all service lines within their water system, and to identify whether each service line contains lead, or has historically contained lead. Water purveyors are required to have an initial inventory developed by October 16, 2024. City of Sunnyside staff have begun the process of developing this inventory, although it is anticipated that many of the service lines within the water system will not have a definitive identification of materials due to inadequate records and the substantial expense that would be required to excavate, identify, and perform surface restoration for City services. Staff will collect information and update the inventory as new data becomes available.

TABLE 3-13 LEAD AND COPPER MONITORING PROGRAM SUMMARY OF RESULTS
(all values are in milligrams per liter)

Sample Number	Sample ID	Year 2022	
		Copper (Federal Action Level 1.3 mg/l)	Lead (Federal Action Level 0.015 mg/l)
1	55736	0.064	0.001
2	55737	0.005	0.001
3	55740	0.051	0.001
4	55741	1.320	0.013
5	55742	0.067	0.002
6	55744	0.019	0.001
7	55745	0.031	0.001
8	55726	0.006	0.001
9	55727	0.372	0.001
10	55728	0.009	0.001
11	55735	0.130	0.002
12	55738	0.036	0.001
13	55739	0.036	0.001
14	55743	0.011	0.001
15	55710	0.007	0.001
16	55711	0.032	0.001
17	55712	0.019	0.001
18	55713	0.020	0.001
19	55714	0.011	0.001
20	55715	0.006	0.001
21	55716	0.028	0.001
22	55717	0.052	0.001
23	55718	0.021	0.001
24	55729	0.021	0.001
25	55730	0.075	0.001
26	55731	0.020	0.001
27	55732	0.082	0.001
28	55733	0.080	0.001
29	55734	0.017	0.001
30	55719	0.027	0.008

3.2.3 Future Source Water and Distribution System Sampling and Testing

A summary of future source and distribution system monitoring requirement frequencies, dates and sample status, as provided in the City's 2023 Water Quality Monitoring Report (WQMR), is provided below in Table 3-14 and Table 3-15, respectively. A copy of the City's current WQMR is provided in CHAPTER 10 of this Plan.

TABLE 3-14 FUTURE SOURCE WATER SAMPLING REQUIREMENTS				
Sample Type	Frequency	Last Sample	Next Sample	Status
Well No. 6 (S06)				
Nitrate	Once/year	8/24/22	Aug 2023	Within MCLs
Inorganic Chemicals (IOCs)	Waiver/9 Years	7/6/16	Jul 2025	Within MCLs
Arsenic	Once/3 Years	3/9/21	Mar 2024	Within MCLs
Iron	Once/3 Years	3/9/21	Mar 2024	Within MCLs
Manganese	Once/3 Years	3/9/21	Mar 2024	Within MCLs
Volatile Organic Chemicals (VOCs)	Waiver/6 Years	3/9/21	Mar 2027	Within MCLs
Herbicides	Waiver/9 Years	5/9/18	May 2027	Within MCLs
Pesticides	Waiver/9 Years	5/9/18	May 2027	Within MCLs
PFAS	Once/3 Years	---	Feb 2025	Within MCLs
Soil Fumigants	Waiver/3 Years	8/6/01	TBD	Within MCLs
Gross Alpha	Once/ 6 Years	5/12/21	TBD	Within MCLs
Radium 228	Once/6 Years	5/12/21	TBD	Within MCLs
Well No. 7 (S07)				
Nitrate	Once/year	9/21/21	Mar 2023	Within MCLs
Inorganic Chemicals (IOCs)	Waiver/9 Years	10/7/14	Oct 2023	Within MCLs
Arsenic	Once/3 Years	3/9/21	Mar 2024	Within MCLs
Manganese	Once/3 Years	3/9/21	Mar 2024	Within MCLs
Volatile Organic Chemicals (VOCs)	Once/3 Years	7/21/22	Jul 2025	Within MCLs
Herbicides	Waiver/9 Years	5/9/18	May 2027	Within MCLs
Pesticides	Waiver/9 Years	5/9/18	May 2027	Within MCLs
PFAS	Once/3 Years	---	Feb 2025	Within MCLs
Soil Fumigants	Once/3 Years	8/6/01	TBD	Within MCLs
Gross Alpha	Once/ 6 Years	5/12/21	TBD	Within MCLs
Radium 228	Once/ 6 Years	5/12/21	TBD	Within MCLs
Well No. 8 (S08)				
Nitrate	Once/year	4/6/22	Apr 2023	Within MCLs
Inorganic Chemicals (IOCs)	Waiver/9 Years	6/7/16	Jun 2025	Within MCLs
Arsenic	Once/3 Years	3/31/21	Mar 2024	Within MCLs
Volatile Organic Chemicals (VOCs)	Waiver/6 Years	10/3/18	Oct 2024	Within MCLs
Herbicides	Once/3 Years	3/31/21	Mar 2024	Within MCLs
Pesticides	Once/3 Years	3/31/21	Mar 2024	Within MCLs
PFAS	Once/3 Years	---	Feb 2025	Within MCLs
Soil Fumigants	Waiver/3 Years	8/20/98	TBD	Within MCLs
Gross Alpha	Once/6 Years	5/12/21	TBD	Within MCLs
Radium 228	Once/6 Years	5/12/21	TBD	Within MCLs
Well No. 9 (S09)				
Nitrate	Once/year	8/24/22	Aug 2023	Within MCLs
Inorganic Chemicals (IOCs)	Waiver/9 Years	4/7/16	Apr 2025	Within MCLs
Arsenic	Once/3 Years	3/9/21	Mar 2024	Within MCLs
Manganese	Once/3 Years	3/9/21	Mar 2024	Within MCLs
Volatile Organic Chemicals (VOCs)	Waiver/6 Years	5/12/21	TBD	Within MCLs
Herbicides	Waiver/9 Years	5/9/22	May 2031	Within MCLs
Pesticides	Waiver/9 Years	5/9/22	May 2031	Within MCLs
PFAS	Once/3 Years	---	Feb 2025	Within MCLs
Soil Fumigants	Waiver/3 Years	8/20/98	TBD	Within MCLs
Radium 226 + 228	Once/9 Years	9/11/19	Sep 2028	Within MCLs
Gross Alpha	Once/6 Years	5/9/18	May 2024	Within MCLs
Well No. 11 (S11)				
Nitrate	Once/year	9/21/21	Mar 2023	Within MCLs
Inorganic Chemicals (IOCs)	Waiver/9 Years	9/21/21	TBD	Within MCLs
Arsenic	Once/3 Years	9/21/21	Sep 2024	Within MCLs
Volatile Organic Chemicals (VOCs)	Waiver/6 Years	5/12/21	TBD	Within MCLs
Herbicides	Waiver/9 Years	4/7/16	Apr 2025	Within MCLs
Pesticides	Waiver/9 Years	4/7/16	Apr 2025	Within MCLs
PFAS	Once/3 Years	---	Feb 2025	Within MCLs
Soil Fumigants	Waiver/3 Years	---	TBD	Within MCLs
Gross Alpha	Once/6 Years	4/6/22	TBD	Within MCLs
Radium 228	Once/6 Years	1/3/16	Apr 2028	Within MCLs
Wells No. 12 and 13 (S14)				
Nitrate	Once/year	8/24/22	Aug 2023	Within MCLs
Inorganic Chemicals (IOCs)	Waiver/9 Years	8/1/16	Aug 2025	Within MCLs
Arsenic	Once/3 Years	9/11/19	Mar 2023	Within MCLs
Volatile Organic Chemicals (VOCs)	Once/3 Years	7/21/22	Mar 2024	Within MCLs
Herbicides	Waiver/9 Years	5/10/16	May 2025	Within MCLs
Pesticides	Waiver/9 Years	5/10/16	May 2025	Within MCLs
PFAS	Once/3 Years	---	Feb 2025	Within MCLs
Soil Fumigants	Waiver/3 Years	---	TBD	Within MCLs
Gross Alpha	Once/6 Years	7/5/23	TBD	Within MCLs
Radium 228	Once/6 Years	7/5/23	TBD	Within MCLs

TABLE 3-15 FUTURE DISTRIBUTION SYSTEM SAMPLING REQUIREMENTS				
Sample Type	Frequency	Last Sample	Next Sample	Status
Coliform Bacteria	15/Month	September 2023	October 2023	Within MCLs
Disinfection Byproducts	Once/Year	8/24/22	August 2023	Within MCLs
Lead & Copper	30 samples/3 Years	8/24/22	August 2025	No Exceedance
Asbestos	Once/9 Years	4/24/19	April 2028	No Exceedance

Future sampling requirements are discussed further in CHAPTER 6 of this Plan. The City's current and future WQMR should be consulted regarding the dates for future testing.

3.3 SYSTEM DESIGN STANDARDS

Standardized performance and design criteria are essential for efficient evaluation, construction, and operation of a water utility. Establishing minimum criteria assures a base level of system reliability and enhances the utility's ability to assess system deficiencies and to plan for future improvements. The City of Sunnyside has established the following performance and design criteria for their water system.

TABLE 3-16 SYSTEM DESIGN STANDARDS		
Parameter	Design Standard	Regulatory Reference
Water Quality	Provide water quality consistent with applicable state (DOH) and federal (EPA) requirements	Chapter 246-290 WAC, Part 3
Average Daily Demand (ADD)	Equivalent to the daily consumption per service in a user category averaged for the period 2017-2022, except as otherwise adjusted to account for recent changes in demand trends. The ADD values for Sunnyside are presented in Table 2-9.	WAC 246-290-221
Maximum Daily Demand (MDD)	Equivalent to the maximum day of consumption per service in a user category, as calculated using the volume of water from the maximum day of production. The MDD values are presented in Table 2-8. MDD/ERU = 609 gallons/day	WAC 246-290-221
Peak Hourly Demand (PHD)	This demand shall be equivalent to the peak hour consumption per service in a user category, as calculated using a conservative estimate of 1.7 times the MDD. PHD/ERU = 0.7 gpm.	WAC 246-290-221
Storage Requirements	Storage requirements shall be based on providing minimum operational, equalizing, standby, and fire suppression storage for the entire water system as calculated using DOH *Water System Design Manual* equations. The specific storage requirements for the City of Sunnyside are presented later in this chapter.	WAC 246-290-235
Fire Suppression Storage (FSS) and Fire Flow	Storage requirements for fire flow shall be based on providing 5,500 gpm for a 4-hour duration (the minimum flow required by the Sunnyside Fire Department for the largest facility), which equals 1,320,000 gallons. Additional fire suppression storage and fire flow capacity are discussed later in this chapter.	WAC 246-290-221(5)
Flow Rates and Velocities	Pipelines shall be sized for a maximum allowable water flow velocity of 8 ft/s under PHD conditions. Maximum pipe velocities may exceed 8 ft/s under fire flow conditions. The basis for pipe size design shall be per computer model analysis.	2020 DOH Water System Design Manual
System Pressures	Minimum service pressure under PHD conditions with ES storage depleted shall be 30 psi, measured at the service meter. Under MDD plus required fire flow conditions, the minimum distribution system pressure shall be 20 psi. Additional information regarding system pressure requirements under specific hydraulic analysis scenarios is presented in Section 3.4.6.	WAC 246-290-230(5) and WAC 246-290-230(6)
Minimum Pipe Sizes	The minimum pipe size allowed within the system shall be 8-inch diameter. Where fire flow requirements exceed 1,000 gpm, the minimum pipeline size shall be determined by hydraulic analysis.	*City of Sunnyside Design and Construction Standards*

Additional design standards and requirements for water main construction in the City of Sunnyside are included in the *City of Sunnyside Design and Construction Standards* provided in CHAPTER 10.

3.4 SYSTEM CAPACITY ANALYSIS

Review and analysis of the capacity of all system components, including water sources, treatment systems, storage facilities, and distribution components described in Section 3.1, is important to maintain the City's level of service and ensure the current and future system satisfies the requirements of WAC 246-290-100(4)(e).

3.4.1 Source of Supply and Reliability Analysis

Existing source well production is summarized in Table 3-17, along with projections of future water system demand and ERUs. It is crucial to compare existing and future demand trends with the water supply capacities summarized in Section 3.1 and DOH recommended reliability criteria summarized in Section 3.10.5 of the 2020 Water System Design Manual. The following are the applicable water source reliability recommendations:

- Two or more supply sources are available.
- Permanent and seasonal sources are capable of replenishing depleted fire suppression storage within 72 hours while concurrently supplying the MDD for the water system.
- Permanent and seasonal source capacity is enough to supply MDD in a pumping period of 20 hours or less.
- With the largest source out of service, the remaining permanent and seasonal source(s) can provide a minimum of ADD for the water system.
- Source of supply pump stations have power connections to two independent primary public power sources, have in-place auxiliary power available (auto transfer capable), and/or maintain adequate gravity standby storage.
- A factor of safety is applied to well pumping test safe yield determinations.

A summary of the City's total well source capacity compared to the DOH reliability recommendations is provided in Table 3-17. A factor of safety (10% contingency) is included in all demand projections that are used to calculate the reliability criteria demands provided in Table 3-17.

TABLE 3-17 WATER SUPPLY RELIABILITY SUMMARY			
DOH Water Supply Reliability Criteria	2023	2033	2043
MDD + FSS[a] in 72 hours (gpm)	4,882	5,885	7,106
Source Well Capacity[b] Existing (gpm) With proposed improvements (gpm) [c]	 5,500 5,500	 5,500 7,000	 5,500 8,500
Meets Reliability Criteria?	Yes	Yes, w/ improv.	Yes, w/ improv.
MDD in 20 hours (gpm)	5,492	6,695	8,160
Source Well Capacity[b] Existing (gpm) With proposed improvements (gpm) [c]	 5,500 5,500	 5,500 7,000	 5,500 8,500
Meets Reliability Criteria?	Yes	Yes, w/ improv.	Yes, w/ improv.
ADD (gpm)	2,135	2,603	3,712
Source Well Capacity[c] With largest source (Well 6) out of service (gpm) With proposed improvements[c]	 4,000 4,000	 4,000 5,500	 4,000 7,000
Meets Reliability Criteria?	Yes	Yes	Yes

[a] Refer to Section 3.4.4 for FSS requirements. FSS converted to 72 hours of pumping = 306 gpm (1,320,000 gallons/4,320 minutes).
[b] Total source capacity from Table 3-2.
[c] Proposed improvements include new 1,500 gpm well within period 2023-2033 and an additional 1,500 gpm well within period 2033-2034.

Power supply reliability is also an important factor in the source of supply reliability analysis. The City of Sunnyside has standby generators at Wells No. 8, 9, and 11, although typical operation requires generators to be turned on manually. Wells No. 12 and 13 are electrically fed from the wellhouse building, which is equipped with a manual transfer switch and a receptacle for a portable generator. The Grandview Booster Station is equipped with an automatic transfer switch and permanent generator.

The condition and age of existing water system facilities and equipment such as pumps, motors, and valves can also have an impact on water supply reliability. A summary of the age and status of major water supply components is summarized in Section 3.1. Sunnyside properly operates and maintains its water system facilities and equipment. The City will continue routine maintenance on system equipment as discussed in CHAPTER 6. Recommended O&M improvements related to well pump rehabilitation and replacement will be as described in CHAPTER 8.

3.4.2 Alternate Sources of Supply

As system demands continue to increase, the City may need to pursue alternative sources of supply to supplement groundwater source well supply and increase system reliability. Alternative sources of supply may include irrigation supply sources, water reuse, and water system interties.

Pursuing and developing seasonal water sources to offset high peak demands in the summer months may be a viable option for the City. Seasonal irrigation demand can have a significant impact on the City's water system supply capacity. Expansion of existing irrigation systems to serve more customers is an option to consider in the future. Sunnyside Valley Irrigation District (SVID) operates within the City, and working with SVID to transfer irrigation-only services would provide more capacity within the water system for growth.

Water reuse options could be considered by the City to provide an additional water supply. The primary source for reclaimed or reused water within or near the City of Sunnyside includes the City's domestic wastewater treatment plant and industrial wastewater treatment plant. The domestic plant currently discharges treated wastewater to Sulphur Creek in south-central Sunnyside, and the industrial plant discharges treated wastewater to groundwater by way of seasonal sprayfield irrigation.

Another possible use of reclaimed water from the City's wastewater treatment facility is to irrigate City parks and/or school athletic fields. This would require upgrading one or both wastewater treatment facilities to Class A reclaimed water standards plus costs associated with construction of a separate reclaimed water transmission and distribution system (pumps and pipeline) to deliver reclaimed water to various parks and school fields throughout the City. The wastewater treatment facilities are in south-central Sunnyside.

Water system interties with neighboring water purveyors can be a possible option for an emergency or supplemental source of supply. In some circumstances pursuing a water system intertie can be more cost-effective than new source development. The nearest large municipal water purveyor to the City of Sunnyside is the City of Grandview. No plans are in place to construct an intertie between Sunnyside and Grandview at this time but may be a viable option in the future.

If an intertie is proposed, the City will need to develop an agreement with the other purveyor, obtain approval of the intertie from DOH and the Ecology, modify appropriate water rights to reflect the intertie, and incorporate the intertie into the Water System Plan. The intertie agreement would include the following:

- A discussion on the place of use as authorized in appropriate water rights documents.
- Identification of the specific time(s) when water will be provided.
- Quantification of the amount of water available for use.
- A discussion on seasonal or other restrictions on water availability; and
- A discussion of how water conservation programs, data collection and other operational matters will be conducted and coordinated.

3.4.3 Water Right Self-Assessment

The City of Sunnyside currently maintains certificated and permitted water rights from Ecology for the appropriation of ground water from each of its wells. A copy of the City's water right certificates, permits, and claims, and any associated reports of examination (ROE) and water right correspondence documents are provided in CHAPTER 10 of the Plan.

Sunnyside's water rights status as compared to its existing and future water system demands are shown in Table 3-18. The excess and/or deficiencies in the City's water rights are also shown in these tables. The City is projected to need additional instantaneous and annual water rights between 2034 and 2044. This could be addressed through the resolution of the outstanding Surface Water Adjudication Claim or purchase of a water right from another entity.

Ecology has classified water right 2553-A as non-additive for both Q_i and Q_a. The City does not dispute the non-additive nature of Q_a, as there is clear documentation in various Reports of Examination that the City's total Q_a quantity for all water rights is limited to 5,044 ac-ft/yr. Neither the Record of Decision nor Report of Examination during the transfer of the water right to the City identifies a non-additive Q_i. The City plans to begin work on disputing this position in the upcoming months. For planning purposes, the existing determination is shown in Table 3-18, which shows that the City cannot operate all its sources concurrently. This is an operations concern more than an actual problem since the City's water system demands do not require all sources to be operated at the same time, but this limiting Q_i prevents the City from doing so if it was required.

The City plans to develop new water sources within the 20-year planning period. These wells will need to be included as additional points of withdrawal to the City's existing water rights.

TABLE 3-18 WATER RIGHT SELF-ASSESSMENT

Water Right Permit, Certificate, or Claim #	WFI Source #	Existing Water Rights				Current Source Production (2024)				10-Year Forecasted Source Production (2034)				20-Year Forecasted Source Production (2044)			
		Primary Q_i (gpm)	Non-Additive Q_i (gpm)	Primary Q_a (acre-feet)	Non-Additive Q_a (acre-feet)	Total Q_i (gpm)	Current Excess (Deficiency)	Total Q_a (acre-feet)	Current Excess (Deficiency)	Total Q_i (gpm)	10-Year Forecasted Excess (Deficiency)	Total Q_a (acre-feet)	10-Year Forecasted Excess (Deficiency)	Total Q_i (gpm)	20-Year Forecasted Excess (Deficiency)	Total Q_a (acre-feet)	20-Year Forecasted Excess (Deficiency)
1. 33-D	Well 8 [a]	420	–	347	–												
2. 34-D	Well 8 [a]	230	–	62	–												
3. 35-D	Well 3	420	-	347													
4. 49-A	Well 10 [b]	1,000	--	1,000	--												
5. 2553-A	Wells 11, 12, 13 [c]	–	1,500	--	720												
6.4795-A	Well 6	–	1,570	--	1,600												
7. G3-21323C	Well 7	950	--	382	1,118												
8. G4-31581P	Wells 3, 6, 7, 9	2,000	--	2,906	324												
	TOTAL	5,020	3,070	5,044	3,762	5,500	-480	3,444	1,600	7,000 [d]	-1,980	4,281	845	8,500 [e]	-3,480	5,219	-175

Pending Water Right Applications

Application #	Applicant and Source Name	Application Type	Date Submitted	Quantities Requested			
				Primary Qi (gpm)	Non-Additive Qi (gpm)	Additive Qa (acre-feet)	Non-Additive Qa (acre-feet)
Surface Water Adjudication Claim 1752	SVID, Snipes Mountain Lateral			1,930 (4.3 cfs)		1,734 acre-feet	

[a] Certificates 33-D and 34-D were formerly for Wells No. 1 and 2, respectively. Well No. 8 was added in 1994 and utilizes these water right authorizations.
[b] Certificate 49-D was formerly for Well No. 4. Well No. 4 was decommissioned in 1998 and replaced by Well No. 10 (previously designated Well 4A).
[c] Certificate 2553-A was formerly for Well No. 5. This water right was transferred to Wells No. 11, 12, and 13 through Change Applications CG4-GWC2553-A@1 (YAKIMA-04-14) and CG4-GWC2553-A (YAKIMA-07-21). The City is planning to dispute the non-additive nature of the Q_i for this right.
[d] Assumed development of 1,500 gpm source between 2023 and 2034.
[e] Assumed development of 1,500 gpm source between 2033 and 2044.

3.4.4 Storage Analysis

Reservoir facilities are necessary in a water utility's system to provide required storage in three critical areas:

1. Standby Storage: Adequate water reserves need to be maintained to meet the system's average daily demand in the event the largest water supply source is out of service. Standby storage may be "nested" within the fire suppression storage volume.

2. Fire Suppression Storage: Adequate water reserves need to be maintained to meet the system's highest fire flow requirement with no assistance from existing water supply sources and at a minimum pressure of 20 psi throughout the distribution system. Fire suppression storage may be "nested" within the standby storage volume.

3. Equalizing Storage: Adequate water reserves need to be maintained to meet that portion of the system's maximum instantaneous demand (peak hour) which exceeds the existing water supply source capacity. Equalizing storage must be available to all service connections at a minimum pressure of 30 psi.

Storage facilities also provide a volume of water for supply to the system between source pumping operations. This "operational" volume is established by each utility and is generally based on limiting, as much as practical, the number of pump cycles per hour.

The critical storage components for Sunnyside's water system will be addressed in the storage analysis of the following Sections. Storage will be analyzed for the entire system and then for the upper pressure zones separately.

Total System Storage Analysis

Standby Storage: The purpose of standby storage is to provide a measure of reliability should sources fail or unusual conditions impose higher demands than anticipated. The Department of Health (DOH) defines standby storage as the volume of stored water available for use during a loss of source capacity, power, or similar short-term emergency at a minimum pressure to all service connections of 20 psi. The City of Sunnyside operates multiple pressure zones, and system pressures in the upper (Zone 3) and lower (Zone 1) zones are established by the Skyline and Grandview reservoirs, respectively.

Currently, well source capacity is equal to 5,500 gpm, although future sources are planned to meet increasing water demand as the City grows. As identified in Table 3-15, additional water rights will need to be secured to expand source capacity to 8,500 gpm and to add the new sources as additional points of withdrawal to the water rights. Storage calculations performed herein will be based upon the assumption that additional source capacity and water rights will be secured as required to maintain a surplus source capacity throughout the 20-year planning period.

For communities with multiple sources of supply such as the City of Sunnyside, the Department of Health's (DOH) 2020 *Water System Design Manual* recommends the volume of standby storage should be calculated based upon the following equation:

Equation:

$$SB = (N)(SB_i)(T_d) \qquad (\textit{2020 Water System Design Manual,}\ \text{Equation 7-2})$$

Where,

SB = Total standby storage component (gallons, minimum recommended)
N = Number of ERUs based on the ERU_{MDD} value (gpd)
SB_i = Locally adopted unit SB volume in $\frac{gal}{(day)(ERU)}$ (ERUs based on the ERU_{MDD} value)
T_d = No. of days selected to meet water system determined standard of reliability

At no time, however, shall standby storage be less than 200 gallons times the number of equivalent residential users (*2020 Water System Design Manual*, Page 179).

When the above standby storage equation is applied to the existing and projected maximum day demand (MDD) and ERUs the resulting standby storage requirements are as shown in Table 3-19.

TABLE 3-19 STANDBY STORAGE (SB) REQUIREMENTS

	2022	2032	2042
N **SB_i** x **T_d**	10,831 ERUs 200 gpd/ERU x 1 Day	13,202 ERUs 200 gpd/ERU x 1 Day	16,092 ERUs 200 gpd/ERU x 1 Day
Total Standby Storage Required	2,166,100 Gallons	2,640,400 Gallons	3,218,400 Gallons

Fire Suppression Storage: The Department of Health (DOH) defines fire suppression storage as the volume of stored water available during fire suppression activities to satisfy minimum pressure requirements per WAC 246-290-230. A volume of storage for fire protection has been established based on fire flow ratings of various structures within Sunnyside and the City's current ISO Public Protection Classification (PPC) of Class 5. The storage required for Sunnyside is 1,320,000 gallons, which will supply a demand of 5,500 GPM for a 4-hour duration. This fire protection demand has remained the same since the 2016 Water System Plan Update. Fire suppression storage shall be provided at an elevation to maintain 20 psi pressure throughout the distribution system. Fire suppression and standby storage may be "nested" to reduce the total system storage required. The City has historically elected to nest its fire suppression storage for Zone 1, and the City is currently deficient in total reservoir storage without nesting, as identified in Table 3-18. The City plans to construct a new reservoir within the next 10 years, at which time nesting would likely be unnecessary within the remaining 20-year planning period. A letter from the City's fire marshal supporting the practice of nesting is included in CHAPTER 10.

Equalizing Storage: Equalizing storage must also be provided to meet the periodic demands placed on the water system which exceed the source pumping capacity. The DOH design method for calculating equalizing storage is 150 times the difference between the system's peak hour demand (PHD) in GPM and the source production rate in GPM. Based on this method, the current and future equalizing storage requirements for Sunnyside are as shown in Table 3-20. Again, all components of the City's source capacity must be considered when determining the total source capacity of the system. When analyzing on a zone-by-zone basis, equalizing storage is not required since booster pump stations have adequate capacity to supply each zone above PHD. However, when analysis is based on the entire system, equalizing storage may be required to directly supplement source well capacity deficiencies until the proposed source well improvements are completed. Equalizing storage must be available to all service connections at a minimum pressure of 30 psi.

TABLE 3-20 EQUALIZING STORAGE (ES) REQUIREMENTS			
	Year 2023	**Year 2034**	**Year 2044**
Peak Hour Demand (gpm)	7,479	9,298	11,334
Total Source Capacity (gpm) [1]	5,500	7,000	8,500
Subtotal (gpm)	1,979	2,298	2,834
DOH Multiplier (gal/gpm)	150	150	150
Equalizing Storage Total (gal)	**296,850**	**344,700**	**425,100**
[1] Total source capacity is limited by instantaneous Water Rights. Total Source capacity for years 2034 and 2044 assume recommended improvements have been completed.			

Operational Storage: The City of Sunnyside operates its sources on a seasonal basis to maintain a consistent flow into the system from one or more wells, and the setpoints for the remaining sources are staggered to sequentially increase flow as needed to prevent reservoir drawdown. Although setpoints are frequently adjusted, typical operating storage in the reservoirs is approximately 3 feet. This results in an operational storage volume of 397,000 gallons between the City's four reservoirs, or approximately 71 gallons per service connection.

Total Storage: Table 3-21 summarizes the existing and future storage requirements for the water system. The City currently has sufficient storage to meet storage requirements, but a new reservoir will soon be required to avoid becoming deficient in standby/fire suppression storage.

TABLE 3-21 STORAGE VOLUME REQUIREMENTS SUMMARY (all storage values are in millions of gallons)			
	Year 2023 Requirements	Year 2034 Requirements	Year 2044 Requirements
Standby Storage (SB)	2.166	2.693	3.283
Fire Suppression Storage (FSS)	1.320	1.320	1.320
Equalizing Storage (ES)	0.297	0.345	0.425
Operational Storage (OS) [a]	0.397	0.397	0.397
Total Storage Required	4.180	4.755	5.425
Total Storage Required With Nesting [b]	2.860	3.435	4.105
Total Storage Required (above 20 psi)	2.860	3.435	4.105
Total Storage Required (above 30 psi)	0.694	0.742	0.822
Total Storage Capacity (above 20 psi)	2.942	2.942	2.942
Total Storage Capacity (above 30 psi)	2.700	2.700	2.700
Storage Excess (Deficiency)	**0.082**	**(0.493)**	**(1.163)**
[a] Future Operational Storage is based upon maintaining 0.397 MG. [b] Nesting assumes the sum of FSS and SB is equal to SB.			

3.4.4.1 Zone 2 and Zone 3 Storage Analysis

The supply and storage of the middle and upper pressure zones (Zone 2 and Zone 3) must be analyzed separately from the total system, due to their dependence on booster pump stations for supply. Supply to the upper zones is boosted from Zone 1 through the Grandview Booster Station, with a total capacity of 1,693 gpm (2.44 MGD), to the Skyline Reservoir.

Demands for Zones 2 and 3 are summarized in Table 3-21, Table 3-22, and Table 3-23. The storage requirements for Zones 2 and 3 consist of the same four components as described for the total system storage analysis. The four components are standby, fire suppression, equalizing, and operational storage.

Standby Storage: As with the requirements for the total system, standby storage for Zones 2 and 3 are based upon there being multiple sources of supply, which are the five booster pumps located at the Grandview Booster Station. The total capacity of the booster pumps is 1,693 GPM. Even with the largest pump out of service, the current and future ADD for two days does not exceed 893 GPM. Standby storage will therefore, be based upon 200 gallons times the current and future number of MDD ERUs located in Zones 2 and Zone 3 of the system. Zone 2 and Zone 3 standby storage will be as shown in Table 3-19.

TABLE 3-22 ZONES 2 AND 3 STANDBY STORAGE (SB) REQUIREMENTS

	2023	2034	2044
N **SB_i** x **T_d**	524 ERUs 200 gpd/ERU x 1 Day	651 ERUs 200 gpd/ERU x 1 Day	794 ERUs 200 gpd/ERU x 1 Day
Total Standby Storage Required	104,700 Gallons	130,200 Gallons	158,700 Gallons

Fire Suppression Storage: The maximum anticipated fire suppression need in Zones 2 and 3 is 1,500 gpm for 2 hours, which is equal to 180,000 gallons.

Equalizing Storage: Equalizing storage is necessary to meet periodic peak demands that are placed on the system which exceed the source (booster pump) capacity. Again, the DOH design method for calculating the equalizing storage is equal to 150 times the difference between the system's peak hour demand and the source production (booster pump) rate. The sum of peak hour demand for Zones 2 and 3 does not exceed the supply capacity of the booster station with the largest pump out of service (893 gpm), therefore equalizing storage for the Zone 2 and Zone 3 analysis is equal to zero as shown in Table 3-20.

TABLE 3-23 ZONES 2 AND 3 EQUALIZING STORAGE (ES) REQUIREMENTS

	Year 2023	Year 2033	Year 2043
Peak Hour Demand (gpm)	373	464	566
- Total Source Capacity (gpm)	893	893	893
Subtotal (gpm)	< 0	< 0	< 0
DOH Multiplier (gal/gpm)	150	150	150
Equalizing Storage Total (gal)	0	0	0
Note: Zone 2 and 3 storage analysis based on Grandview Booster Station operating without largest pump			

Operational Storage: The City operates its booster pump station within a 3-foot water level range in the Skyline Reservoir. This corresponds to a volume of approximately 10,400 gallons, or approximately 20 gallons per existing service connection under normal operation. The booster station's multiple pumps at various pumping rates allows demand to be met without frequent cycling of pumps. Operational storage requirements are shown in Table 3-24.

Total Storage: Table 3-24 summarizes the existing and projected future storage requirements for Zones 2 and 3. The existing capacity of the Skyline Reservoir exceeds the current and future Zone 2 and 3 needs, as shown in Table 3-24.

TABLE 3-24 ZONE 2 AND 3 CURRENT AND FUTURE STORAGE REQUIREMENTS
(all storage values are in millions of gallons)

	2023	2033	2043
Number of ERUs	524	651	794
Operational Storage	0.010	0.010	0.010
Equalizing Storage	0.000	0.000	0.000
Standby Storage	0.105	0.130	0.159
Fire Suppression Storage	0.180	0.180	0.180
Total Storage Required	**0.295**	**0.320**	**0.349**
Total Storage Required (above 20 psi)	0.295	0.320	0.349
Total Storage Required (above 30 psi)	0.010	0.010	0.010
Total Storage Capacity (above 20 psi)	0.498	0.498	0.498
Total Storage Capacity (above 30 psi)	0.256	0.256	0.256
Storage Excess (Deficiency)	**0.203**	**0.178**	**0.149**

3.4.5 Fire Flow

The demand fire flows placed upon a water system is typically the most significant element when analyzing the piping network. Every water system which is required to have a Water System Plan must address fire flow. At a minimum, a water utility must comply with fire flow standards established by the Department of Health (DOH). A community may, however, develop its own standards if they exceed the DOH minimum requirements.

The City of Sunnyside Fire Department has developed areas of desired fire flow ranges based upon the Insurance Services Office (ISO) peak fire flow guidelines for the type of buildings found within the City. Figure 3-3 shows the areas of required minimum fire flow and the actual calculated fire flow capacity at selected locations within those areas.

A computer hydraulic analysis was used to determine the existing fire flow capacities at certain locations shown on Figure 3-3. The hydraulic analysis parameters are discussed later in Section 3.6. As can be seen on Figure 3-3, the greatest fire flow requirements are within the industrially and commercially zoned areas and at some of the public schools. It can be seen on Figure 3-3 that most all locations throughout the distribution system are able to provide the required minimum fire flow capacities. Recommended system improvements to correct any fire flow deficiencies are discussed further in Section 3.7.

CITY OF SUNNYSIDE

Water System Plan Update

Existing Fire Flow Capacities Map

N
W E
S

0 1250 2500

Astria Sunnyside Hospital
Existing: 4,400 gpm.
Required: 3,000 gpm.

Sun King
Existing: 3,500 gpm.
Required: 3,000 gpm.

Mid-Valley Mall
Existing: 1,783 gpm.
Required: 2,625 gpm.

220 W. Grandview Ave. (Zone 2)
Existing: 2,100 gpm.
Required: 4,250 gpm.

Sunnyside High School
Existing: 3,200 gpm.
Required: 2,625 gpm.

Wal Mart Store
Existing: 4,100 gpm.
Required: 2,675 gpm.

1106 Taylor St. (Zone 3)
Existing: 1,800 gpm.
Required: 2,250 gpm.

Washington Elementary School
Existing: 3,500 gpm.
Required: 3,200 gpm.

S. 4th St. and Otis Ave.
Existing: 6,100 gpm.
Required: 5,500 gpm.

Old K-Mart Building
Existing: 3,400 gpm.
Required: 2,500 gpm.

Darigold Inc.
Existing: 4,200 gpm.
Required: 3,150 gpm.

LEGEND

FIRE FLOW RANGE	EXISTING CAPACITY
0-1000 GPM	●
1000-2000 GPM	●
2000-2500 GPM	●
2500-3000 GPM	●
3000-4250 GPM	●
4250-5500 GPM	●
5500+ GPM	●
Monitoring Sites	○
Existing Water Line	—

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.

2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP-Figures.dwg

FIGURE 3-3

3.4.6 Pressure Reducing Valve Capacity Analysis

Pressure reducing valves (PRVs) feeding water from higher pressure zones to lower pressure zones must meet peak day and fire flow demands of the respective zones they serve. Several pressure reducing valves (PRVs) are installed within the City's water system to feed water at an acceptable pressure from Zone 3 to Zone 2. PRVs are also installed between Zone 2 and Zone 1 to allow water to flow to Zone 1 under fire flow or emergency conditions. These valves must be capable of supplying all zone demands. As a result, these PRV stations generally have two separate valves, a smaller valve to satisfy MDD and a larger valve to serve PHD and provide fire flow. All the PRVs have been manufactured by Cla-Val Co. and are housed in concrete vaults. A summary of the City's pressure reducing valves compared to projected system demands and required fire flows is provided in Table 3-25. All PRV stations have adequate capacity to serve existing and projected future demands. There is not sufficient capacity to simultaneously deliver MDD and fire flow from Zone 3 to Zone 1, but during a fire flow event, the majority of the system flow will be delivered from active wells, rather than being completely supplied from Zone 3.

TABLE 3-25 PRESSURE REDUCING VALVE CAPACITY SUMMARY

PRV Station			Maximum Continuous Flow Capacity (gpm)[a]	Maximum Intermittent Flow Capacity (gpm)[a]	Projected Demands						Fire Flow (gpm)
					2023		2034		2044		
Valve No.	Location	Valve Size			MDD (gpm)	PHD (gpm)	MDD (gpm)	PHD (gpm)	MDD (gpm)	PHD (gpm)	
Zone 3 → Zone 1											
3	Terry St. & Columbia Ave.	6”	1,800	2,250							
4	Upland Dr. & Vine Ave.	1.5” 6”	1,800	2,250							
5	Swan Rd. & Vine Ave.	6”	1,800	2,250							
6	328 Grandview Ave.	1.5” 6”	1,800	2,250							
9	Vine Ave. & Taylor St.	1.5” 6”	1,800	2,250							
		TOTAL	**9,000**	**11,250**	**4,577**	**7,479**	**5,690**	**9,298**	**6,936**	**11,334**	**5,500**
Zone 2 → Zone 1											
1	Darrin Ct. & Dayton Dr.	1.5” 6”	1,800	2,250							
2	545 Terry St.	6”	1,800	2,250							
7	San Clemente Ave. & S. Lookout Dr.	2” 6”	1,800	2,250							
8	S. Lookout Dr.	2” 6”	1,800	2,250							
		TOTAL	**7,200**	**9,000**	**4,577**	**7,479**	**5,690**	**9,298**	**6,936**	**11,334**	**5,500**

[a] Capacities based on suggested flow ranges in manufacturer (Cla-Val) published literature for model 90-01 PRV.

3.4.7 Hydraulic Analysis

A hydraulic analysis of a water utility system is a method of calculating pressures and flows throughout the distribution network under various conditions of demand at a given instant. Due to the complex calculations hydraulic analyses are typically performed by computer programs which model the piping, reservoirs, pumps, and specialty valves of a given water system.

Numerous computer programs have been developed for performing network analyses. The program utilized for the modeling and analysis of the City of Sunnyside water system is called WaterCAD (Version 8i), distributed by Bentley Systems, Inc. WaterCAD can perform instantaneous and extended period simulations of complete distribution networks including reservoirs, source pumps, booster pumps, pressure reducing valves, pressure sustaining valves, check valves, flow control valves, pressure switches, and up to 1,000 pipes and 1,000 nodes (pipe junctions).

The program utilizes Genetic Algorithm calculations (Darwin modules) to solve the pressure networks. All water system components are entered into the computer, supply rates and user demand input, and reservoir water levels are established. Once this base information has been loaded, various options such as increasing system demand, lowering reservoir levels, shutting off source pumps, adding system improvements, and simulating fire flow conditions can be analyzed for their impact on the system.

3.4.8 Assumptions

To analyze the water system at a given moment in time, it is necessary to assume certain existing conditions and to program the status of key system components. The following general assumptions have been made for the hydraulic analysis of the City of Sunnyside water system:

- Roughness coefficients (C values) for newer pipes were assumed to be 120. Pipes six-inch or smaller were assumed to have a C value equal to 100. Known old or poor condition pipes were assumed to have a C value equal to 90, or lower as necessary for model calibration.
- Nominal pipe diameters were input for inside pipe diameters.
- Node elevations are based on available contour elevations and spot elevations identified using Googe Earth or similar software.

Table 3-26 identifies the specific parameters used in the hydraulic analysis performed for existing and future peak hour demand (PHD) and for existing and future fire flow capacities at 20 psi residual pressure during maximum day demand (MDD) conditions. The PHD hydraulic analysis assumes that all source wells are operating, except for the largest source (Well No. 9), and that the equalizing and operational storage volume has been depleted from all tanks. The fire flow analysis, during MDD, assumes that the starting elevation in all tanks is with equalizing, operational, and fire suppression storage depleted. The fire flow analysis also assumes that all source wells except Well No. 9 are operating, and the booster pump stations are running.

Initial elevations for the hydraulic analysis are calculated from the current and future reservoir pump-off elevations to represent current and future maximum storage conditions. The operational storage range and volume can be operator-adjusted based upon current demand, but the elevations (volumes) used represent normal operating conditions. Lower or higher initial water elevations could affect the calculated results provided in this Plan.

TABLE 3-26 HYDRAULIC ANALYSIS PARAMETERS

Water System Feature	Hydraulic Analysis Scenario			
	Year 2023 Peak Hour Demand [1]	Year 2023 Fire Flow w/ MDD [2]	Year 2044 Peak Hour Demand [1]	Year 2044 Fire Flow w/ MDD [2]
System Demand	7,479 gpm	4,577 gpm	11,334 gpm	6,936 gpm
Grand Reservoir Levels				
Maximum Elevation	936.0	936.0	936.0	936.0
Initial Elevation	932.1	915.1	933.4	920.6
Floor Elevation	912.0	912.0	912.0	912.0
Skyline Reservoir Levels				
Maximum Elevation	1078.0	1078.0	1078.0	1078.0
Initial Elevation	1064.9	1047.5	1059.7	1042.3
Floor Elevation	982.5	982.5	982.5	982.5
Future Zone 1 Reservoir Levels				
Maximum Elevation	N/A	N/A	936.0	936.0
Initial Elevation			933.4	920.6
Floor Elevation			912.0	912.0
Source Well Status				
Well No. 6	650 gpm	650 gpm	650 gpm	650 gpm
Well No. 7	1,100 gpm	1,100 gpm	1,100 gpm	1,100 gpm
Well No. 8	750 gpm	750 gpm	750 gpm	750 gpm
Well No. 9	0 gpm	0 gpm	1,500 gpm	1,500 gpm
Well No. 11	500 gpm	500 gpm	500 gpm	500 gpm
Well No. 12	350 gpm	350 gpm	350 gpm	350 gpm
Well No. 13	650 gpm	650 gpm	650 gpm	650 gpm
Well No. 14 (Future)	N/A	N/A	1,500 gpm	1,500 gpm
Well No. 15 (Future)	N/A	N/A	N/A	N/A
Total Supply	4,000 gpm	4,000 gpm	7,000 gpm	7,000 gpm
Grandview Booster Pump Station	1,629 gpm	1,629 gpm	1,629 gpm	1,629 gpm

[1] Equalizing and operational storage depleted.
[2] Equalizing, operational, and fire suppression storage depleted.

3.4.9 Analysis Scenarios

The existing water system was first analyzed considering a present peak hour demand of 7,479 gpm, which was the total calculated peak hourly flow for 2023. All nodes providing domestic service within the system did so with a minimum residual pressure of 30 psi or greater. Pipe velocities remained below the seven feet per second (fps) design parameter. A copy of the computer printout of this scenario and all other hydraulic analyses results discussed in this section are provided in CHAPTER 10 of this Plan. Map B in CHAPTER 10 of this Plan shows the computer model with the pipe and node numbers for identification.

A future PHD analysis was run on the system using the PHD for the year 2044 of 11,334 gpm, assuming recommended system improvements are in place. This scenario was conducted using the year 2044 equalizing storage volume. All service pressures were greater than 30 psi and pipe velocities were below seven fps.

Fire flows were considered at all hydrant locations throughout the pipe network while assuming an existing system consumptive demand of 4,577 gpm, the calculated MDD for 2023. The computer hydraulic model was used to calculate the maximum flow attainable at designated hydrant nodes while providing a residual, positive pressure of 20 psi. Operational, equalizing and fire suppression storage was depleted at the start of the fire flow analysis. The resulting fire flow capacities are shown on Figure 3-3, along with the fire department requested fire flow capacities as discussed in Section 3.4. Some locations were calculated to be deficient in meeting the specified fire flow capacities, as shown on Figure 3-3. A future fire flow analysis was performed on the system with the same conditions to verify the available fire flow capacity with improvements in place. A summary of the improvements in fire flow capacity at deficient locations because of proposed water system improvements is presented in Table 3-27 below and shown on Figure 3-4.

TABLE 3-27 EXISTING FIRE FLOW DEFICIENCIES

Deficiency Location No.	Junction Node No.[a]	Existing Fire Flow (GPM)	Required Fire Flow (GPM)	Improved Fire Flow (GPM)[b]
1	J-254	988	1,000	> 1,000
2	J-745	819	1,000	> 1,000
3	J-533	919	1,000	> 1,000
4	J-685	652	1,000	> 1,000
5	J-689	573	1,000	> 1,000
6	J-410	885	1,000	> 1,000
7	J-115	953	1,000	> 1,000
8	J-299	978	1,000	> 1,000
9	J-698	905	1,000	> 1,000
10	J-683	784	1,000	> 1,000
11	J-257	1,783	2,625	2,750
12	J-211	1,800	2,250	2,400
13	J-91	2,100	4,250	4,500

[a] Refer to Map B in CHAPTER 10 of this Plan for Junction Node locations.
[b] Improved fire flow capacities are based upon applicable fire flow improvements in place.

3.4.10 Model Calibration

Fire flow tests throughout the distribution system were performed by the Sunnyside Water Department in 2023. The results of the flow tests were compared to the system hydraulic model. In general, differences between the results are likely due to several factors including differences between the actual hydrant and the modeled node, distribution system valves may be closed, partially closed, or leaking, sticking dials in the flow gauge, additional small diameter pipe, or restrictions between the generic node placement and actual pressure measurement locations. Additionally, it is important to understand fundamental differences expected between the results; the fire flow analysis is used to calculate the available fire flow at 20 psi within the water main, whereas the field test is an instantaneous free-discharge hydrant flow.

When comparing the results, the static pressures are generally within 5 to 10%. The calculated available fire flows at 20 psi are more variable, with the model generally reporting higher flows. As discussed, several factors are involved which may result in differences. Copies of the City's fire hydrant flow test sheets are included in CHAPTER 10.

CITY OF SUNNYSIDE

Water System Plan Update

Fire Flow Capacity Improvement Map

N
W E
S

0 1250 2500

Astria Sunnyside Hospital
Projected: 5,500 gpm.
Required: 3,000 gpm.

Sun King
Projected: 5,300 gpm.
Required: 3,000 gpm

220 W. Grandview Ave. (Zone 2)
Projected: 4,500 gpm.
Required: 4,250 gpm.

1106 Taylor St. (Zone 3)
Projected: 2,400 gpm.
Required: 2,250 gpm.

Mid-Valley Mall
Projected: 2,750 gpm.
Required: 2,625 gpm.

Sunnyside High School
Projected: 3,700 gpm.
Required: 2,625 gpm.

Wal Mart Store
Projected: 5,900 gpm.
Required: 2,675 gpm.

Washington Elementary School
Projected: 5,000 gpm.
Required: 3,200 gpm.

S. 4th St. and Otis Ave.
Projected: 5,800 gpm.
Required: 5,500 gpm.

Old K-Mart Building
Projected: 5,800 gpm.
Required: 2,500 gpm.

Darigold Inc.
Projected: 4,100 gpm.
Required: 3,150 gpm.

LEGEND

FIRE FLOW RANGE	EXISTING CAPACITY
0-1000 GPM	●
1000-2000 GPM	●
2000-2500 GPM	●
2500-3000 GPM	●
3000-4250 GPM	●
4250-5500 GPM	●
5500+ GPM	●
Monitoring Sites	◎
Existing Water Line	—

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP-Figures.dwg

FIGURE 3-4

3.5 SYSTEM CAPACITY ANALYSIS SUMMARY

Provided in Table 3-28 is a summary of the year 2023, 2033, and 2043 projected water system demands for the City of Sunnyside, including ERUs for ADD and MDD. The values in Table 3-28 are calculated from the forecasted water system demands provide in Section 2.4. All values include a 10% contingency.

TABLE 3-28 FUTURE WATER SYSTEM DEMAND SUMMARY

Year	$ERUs_{ADD}$	$ERUs_{MDD}$	Total Annual Demand (MG/Year)	ADD (MGD)	MDD (MGD)	PHD (gpm)
2023	10,610	10,831	1,122	3.07	6.59	7,479
2034	13,189	13,463	1,395	3.82	8.19	9,298
2044	16,078	16,413	1,701	4.66	9.99	11,334

The system's current and future physical capacity (ERUs), in terms of water rights, source capacity, and storage capacity is summarized in Table 3-29.

The water rights physical capacity in Table 3-29 is based on comparing the ADD per ERU to the current and/or future total annual (Q_a) water right quantity and the MDD per ERU to the current and/or future total instantaneous (Q_i) water right quantity. Similarly, source physical capacity is based on comparison of the MDD per ERU to the current well pump capacity.

The storage physical capacity in Table 3-29 is based on two of the primary storage components, equalizing storage (ES) and standby storage (SB). The physical capacity of the City's reservoirs is not based upon operational storage (OS) or fire suppression storage (FSS) because these normally do not change with the number of ERUs. Furthermore, FSS is currently nested with SB, and does not have a volume associated with it. DOH equations were used to determine ES and SB storage ERU physical capacity, except for the SB storage equation, which is based on the ERU_{ADD} value instead of ERU_{MDD} value. Current and future ES and SB storage capacities are calculated from the following equations:

Equalizing Storage

$$N = \left(\frac{ES}{150} + Q_S\right) / PHD$$ (*2020 Water System Design Manual*, Equation 7-1, solved for N)

Where,
N = Number of ERUs based on the ERU_{PHD} value (1.7-time ERU_{MDD} value)
Q_s = Total flow of all permanent sources (gpm)
PHD = Peak Hour Demand per ERU_{PHD} (gpm)

Standby Storage

$$N = \frac{SB}{200 \text{ gallons} * 1 \text{ day}}$$ (*2020 Water System Design Manual*, Equation 4-7)

Where,
SB = Standby Storage (gallons), minimum recommended
N = Number of ERUs

Table 3-29 summarizes the water system capacity, in ERUs, based on current water right, source, and storage capacity. Projected system demands and calculated system capacities shown in other tables of this Plan are based on demand per service and do not directly correlate to the calculated demand per ERU for all service categories under different demand conditions (e.g., ADD, MDD, PHD). Values shown in Table 3-29 are therefore, only estimates based upon calculated demands per ERU for ADD and MDD from historical source and supply meter records.

TABLE 3-29 ERU CAPACITY SUMMARY (DOH WORKSHEET 4-1)

Water System Connections Correlated to ERUs

Service Classification	Total MDD for the classification (gpd)		Total # Connections in the Classification	$ERUs_{ADD}$	$ERUs_{MDD}$
	ADD	MDD			
Residential					
Single-Family Residential	889,900	1,868,900	3,071	3,071	3,071
Multi-Family Residential	416,100	873,600	1,903	1,436	1,436
Nonresidential					
Commercial	1,430,700	3,004,300	574	4,937	4,937
Irrigation	58,200	244,300	11	201	402
DSL and Contingency (10%)	279,500	599,100	N/A	965	985
Total existing ERUs, incl. 10% contingency (Residential + Nonresidential + DSL) =				10,610	10,831

Physical Capacity as ERUs

Water System Component (Facility)	Current System Capacity	Required Capacity			Calculated ERU Capacity for Each Component [2]
		2023	2034	2044	
Sources (gpm)					
All sources (w/out Well No. 9) = 4,000 gpm	5.8 MGD	6.6 MGD	8.2 MGD	10.0 MGD	9,465 ERU_{MDD}
All sources (w/ Well No. 9) = 5,500 gpm	7.9 MGD	6.6 MGD	8.2 MGD	10.0 MGD	13,015 ERU_{MDD}
w/ additional future sources = 8,500 gpm	12.2 MGD	6.6 MGD	8.2 MGD	10.0 MGD	20,113 ERU_{MDD}
Equalizing Storage (ES)	0.30 MG	0.30 MG	0.35 MG	0.43 MG	10,831 $ERU/_{MDD}$
Standby Storage (SB)					
Current Reservoirs Only [1]	2.25 MG	2.17 MG	2.69 MG	3.28 MG	11,240 ERU_{MDD}
Future Reservoir Included	4.50 MG	2.17 MG	2.69 MG	3.28 MG	22,480 ERU_{MDD}
Water Rights Q_a = 5,044 ac-ft Qi = 5,020 gpm	1,644 MG 7.2 MGD	1,12 MG 7.9 MGD	1,395 MG 10.8 MGD	1,701 MG 12.2 MGD	15,539 ERU_{ADD} 11,879 ERU_{MDD}
Water System Physical Capacity (ERU_{MDD}) = 11,240 ERUs, limited by Storage Capacity					

[1] SB storage is nested within fire suppression (1,320,000 gal) storage volume in Grandview reservoirs.
[2] ERU_{MDD} based on 609 gpd/service.

Table 3-29 shows that of the existing system components, storage is currently the limiting factor in physical capacity for the City of Sunnyside water system. Equalizing storage is considered to be equal to only the necessary volume for existing ERUs, and any excess storage is attributed to standby storage. However, source capacity is the limiting factor when considering the recommended reliability condition of evaluating a water system with the largest source out of service.

3.6 SUMMARY OF SYSTEM DEFICIENCIES

The following is a listing and brief description of deficiencies which have been identified in the present water system. The items have been grouped into three system categories (supply, storage, and distribution) and are generally placed in order of their importance. The deficiencies may be operational in nature (which have been identified by the City's Water Department personnel), maintenance related, inadequate present or future capacities, and/or system hydraulics problems.

3.6.1 Supply

Source Well Capacity – As identified in Table 3-29, the City currently has sufficient well capacity to meet existing MDD, but only when all the City's sources are available. It is recommended that the City maintain sufficient sources to allow the highest capacity source to be removed from service for cleaning or repair. Furthermore, source capacity will soon be insufficient for MDD, even with all sources in service. Because of this recommendation, source capacity is currently the limiting factor in growth of the water system, and a new source should be developed. Within the 20-year planning period, a second new source will also be required. Property will need to be procured for these sources; the City has identified a variety of potential sites in the surrounding area that could be used for this purpose, but property has not yet been purchased. The City will be required to include additional points of withdrawal for its water rights to incorporate these sources into the system.

As identified in Table 3-4, Wells No. 6, 7, 10, and 11 use vertical turbine pumps that are expected to have a remaining service life of less than 10 years, and the wellhouses are expected to require improvements within 20 years due to age. Wells 12 and 13 use vertical turbine pumps that may require replacement within 10 and 20 years.

Water Rights – A city's water rights status is crucial in determining the amount of possible future growth. Currently, Sunnyside has adequate combined annual (5,044 acre-feet) and instantaneous (5,020 gpm) water rights to serve existing annual demand of 1,122 million gallons (3,444 acre-feet) and MDD of 4,576 gpm. However, the projected 20-year annual demand of 5,117 acre-feet exceeds annual water rights, and the future source capacity of 8,500 gpm exceeds instantaneous water rights. Water use efficiency measures may be sufficient to offset some projected increases in demand, as discussed in CHAPTER 4 of this plan.

Water Treatment – The City currently provides sodium hypochlorite for Wells No. 12 and 13 by generating chemicals at Well No. 11 and using trucks to transfer to a storage tank at the site of Wells No. 12 and 13. City staff have determined that this approach will not be sustainable in the long term, and chlorination equipment will be necessary at Wells No. 12 and 13. The City also plans to install chlorination equipment at the Grandview and Skyline reservoir sites to allow for future emergency chlorination of the water supply, as needed.

Well No. 7 has experienced screen fouling and needs to be rehabilitated. Well No. 6 currently experiences sanding issues and aesthetic problems that prevent it from being used for long periods of time. A rehabilitation of this well would allow it to be used more consistently.

Booster Stations – As identified in Table 3-4, the Grandview Booster Station pumps are all expected to require replacement within the 10-year planning period.

3.6.2 Storage

Reservoir Cleaning, Inspection and Painting – The City recently had the Skyline reservoir updated, renovated, inspected and painted inside and out. The Grandview reservoirs were evaluated and cleaned by Advanced Diving Services in September 2023. Reports for all reservoirs were satisfactory, and no immediate capital improvement projects were identified. A copy of these reports is included in CHAPTER 10. The recommended frequency of cleaning and inspections is variable depending on several characteristics (water quality, mixing, water age and turnover, etc.) but it is recommended that the reservoirs are at least inspected and cleaned approximately every 5 years.

Storage Capacity – As discussed previously in this Chapter and CHAPTER 2 of this Plan, the City is currently at the limit of its reservoir storage capacity, and a new reservoir is needed. Due to anticipated growth south of I-82 and the flat topography of Sunnyside, it is anticipated that a new reservoir would likely be located southwest of the City to elevate the tank and reduce the volume of dead storage. The City will need to locate and purchase property for this use.

Reservoir Water Treatment – As identified above, the City anticipates installing chlorination equipment at the Grandview and Skyline reservoirs to allow for emergency chlorination of the water distribution system or to increase chlorine residual in the distribution system as needed. The new future reservoir southwest of the City will similarly be equipped with chlorination equipment for this purpose.

3.6.3 Distribution

Fire Flow Capacity – Several locations within the City were identified in Section 3.4 as having insufficient fire flow capacities. Fire flow deficiencies will require pipeline upsizing or looping in the future. The City will construct system improvements to increase fire flow capacities at key locations as shown on Figure 3-4.

Distribution Capacity – Beyond the locations that have a defined need for fire flow capacity, there is additional looping that the City desires to construct to improve service pressure throughout the City, prepare the City for growth into currently unserved areas, and address aging and low diameter mains that could throttle flow in the future.

3.7 SELECTION AND JUSTIFICATION OF PROPOSED IMPROVEMENT PROJECTS

The following discussion identifies recommended system improvements proposed to eliminate or reduce deficiencies described in the previous section. References to prioritized improvements specified in Section 8.2 and Section 8.3 of the Plan are provided. Further description of the water system improvements is provided in CHAPTER 8 of the Plan.

3.7.1 Supply

Source Well Capacity – With an additional well (Well No. 14) online (Improvement S-1), the City will have sufficient well source capacity to meet MDD for over 10 years. However, a second well (Well No. 15) is expected to be needed within the 20-year planning period (Improvement S-5). Ultimately, the need for supplemental sources will be dependent upon the flow available from each newly developed well. For planning purposes, 1,500 gpm wells have been identified herein.

The City will evaluate the pumps and wellhouse structures for each well in five years to establish a list of improvements for each well (S-6). At this time, improvements are not imminent, but the need for a project is primarily based on age and expected remaining life.

Water Rights – The City will need to acquire additional water rights (Improvement WR-1) within the 20-year planning period. The City is also planning to dispute Ecology's current interpretation of water right 2553-A.

Water Treatment – The City will have Wells No. 6 and 7 cleaned to address fouling and other operational issues, including additional repairs or replacement of well components to return the wells back to peak functionality (Improvements S-2a and 2b). The City will also install sodium hypochlorite generation or gas cylinder equipment at Wells No. 12 and 13 (Improvements S-3) and injectors at the Grandview and Skyline reservoir sites to allow for future emergency chlorination of the water supply, as needed (Improvement S-4).

Booster Stations – The City will replace the booster pumps at the Grandview Booster Station (Improvement S-7).

3.7.2 Storage

Reservoir Cleaning, Inspection and Painting – The City will remove the Grandview reservoirs from service sequentially to inspect, repair, and re-coat them as needed (Improvement R1).

Storage Capacity – With an additional reservoir online (Improvement R-2), the City is projected to have sufficient storage capacity for the 20-year planning period. After initial construction, the City will no longer be required to nest standby and fire suppression storage.

3.7.3 Distribution

Fire Flow and Distribution Capacity – Upsizing existing water mains or providing new connections and loops will increase system flows and pressure to areas identified as deficient in Figure 3-3.

- Replace approximately 350 feet of existing distribution main on South 9th Street with an 8" main for improved fire flow (Improvement D-1).
- Complete loop on South 1st Street to mobile home park with approximately 550 feet of 8" main for improved fire flow (Improvement D-2).
- Complete loop on East Edison Road with approximately 720 feet of 12" main for improved fire flow (Improvement D-3).
- Replace approximately 840 feet of 6" pipeline in Eastway Drive with a 12" line and connect to new 12" main from Federal Way to Eastway Drive for improved fire flow (Improvement D-4).

- Complete loop on south side of Yakima Valley Highway with 12” line for improved fire flow (Improvement D-5).
- Complete loop on North Avenue with approximately 50 feet of 8” line for improved fire flow (Improvement D-6).
- Increase line size to hydrant on 11th Street to 8” for improved fire flow (Improvement D-7).
- Increase approximately 1,350 feet of pipeline in Scoon Road from 8” to 12” for improved fire flow (Improvement D-8).
- Complete loop between 5th and Blain Ave. with 1,800 of new main and install new 12” line from Federal Way for improved fire flow and improved east-west hydraulics (Improvement D-9).
- Construction of 8” water line on Blain Ave. between 9th Street and 11th Street to improve service pressure (Improvement D-10).
- Construct water main on 11th Street to loop water system (Improvement D-11).
- Install 390 feet of 8” line to connect the Madison and Parkland neighborhoods, complete looping, and to improve fire flow (Improvement D-12).
- Replace all 4” waters with 12” mains in the central portion of the City (approximately 13,500 fet) (Improvement D-13).
- Complete loop from Sunnyside-Mabton Road to Quail Lane with approximately 4,200 feet of 12” main (Improvement D-14).
- Complete 12” loop east of the Port of Sunnyside’s Wastewater Treatment Plant with 3,000 feet of pipe to accommodate future growth (Improvement D-15).
- Loop the southwest portion of residential areas with 1,250 feet of 12” main for improved service pressure (Improvement D-16).
- Loop northwest portion of the service area with 12” main of approximately 5,850 feet in Sheller Road to airport to accommodate growth (Improvement D-17).
- Install 4,920 feet of 12” main between east Edison and Yakima Valley Highway on Hanford Road to accommodate growth (Improvement D-18).
- Construct approximately 13,170 feet of 12” pipe for the East Sunnyside Loop (Allen-Ray-Alexander-Yakima Valley Highway) to accommodate future growth (Improvement D-19).
- Construct approximately 7,920 feet of 16” pipe for the South Sunnyside Loop on Alexander from Picard Place to McLean Road for improved east-west hydraulics, and to accommodate future growth south of I-82 (Improvement D-20).
- Connect dead-end lines in Ravine Drive and Buena Vista Ave. to Columbia Ave. with approximately 530 feet of 8” pipe to provide additional fire flow (Improvement D-21).
- Miscellaneous service line repair throughout the distribution system as needed (Improvement D-22).

- Install new pressure reducing station in the vicinity of the Grandview reservoirs to improve Zone 1 pressure (location to be determined) (Improvement D-23).
- Loop the water main along Bagley Dr. in the vicinity of Sunridge Townhomes for improved fire flow (Improvement D-24).
- Complete a loop from Wheeler Ave. north to NW Crescent Ave. for improved fire flow (Improvement D-25).
- Complete a water main loop through Ridgeway Loop for improved fire flow (Improvement D-26).

City of SUNNYSIDE WASHINGTON

CHAPTER 4

WATER USE EFFICIENCY (WUE) PROGRAM

HLA Engineering and Land Surveying, Inc.

4.1 WATER USE EFFICIENCY PROGRAM (WUE)

4.1.1 Planning Requirements

In 2003, the Washington State Legislature passed the Municipal Water Supply-Efficiency Requirements Act (commonly called the Municipal Water Law) as part of a multi-year effort to reform the state's water laws. The act requires all municipal water suppliers to use water more efficiently in exchange for water right certainty and flexibility to meet future water demands. The Legislature directed the DOH to adopt a rule that establishes water use efficiency requirements for all municipal suppliers. The Water Use Efficiency (WUE) Rule, which became effective on January 22, 2007, includes the following key items:

- WUE Program – This element of the rule requires the collection of water production and consumption data, forecast of future water demands, evaluation of system leakage, evaluation of water rate structures, and the implementation of WUE measures. This Program is a required element of all Water System Plans prepared after January 22, 2008.

- Distribution System Leakage (DSL) Standard – Municipal water suppliers with 1,000 or more connections are required to satisfy a DSL standard equal to 10% or less of total production by July 1, 2010.

- WUE Goal Setting and Performance Reporting – Municipal water suppliers are required to set WUE goals through a public process and report annually on their performance to customers and to DOH. For water systems with 1,000 or more connections, the deadline for establishing system goals was July 1, 2009. WUE goals must be established through a public process for a ten-year period and should be re-evaluated each cycle.

The rule requirements and compliance deadlines are shown in Table 4-1.

TABLE 4-1 WATER USE EFFICIENCY RULE REQUIRMENTS

Requirement	Deadlines	
	1,000 or more Connections	Under 1,000 Connections
Begin Production & Consumption Data Collection	January 1, 2007	January 1, 2008
Establish WUE Goals	July 1, 2009	July 1, 2010
Include WUE Program in Planning Documents	January 22, 2008	January 22, 2008
Submit First Annual Performance Report	July 1, 2008	July 1, 2009
Submit Service Meter Installation Schedule	July 1, 2008	July 1, 2009
Meet DSL Standard	July 1, 2010	July 1, 2011
Complete Installation of all Service Meters	January 22, 2017	January 22, 2017

A WUE Program is one requirement of the WUE Rule. All Water System Plans submitted to the DOH after January 22, 2008, are required to include a WUE Program. WAC 246-290-810(4) requires municipal water suppliers to include the following items in their WUE program:

- Description of the current water conservation program including an estimation of water saved through program implementation over the last ten years.
- Description of the chosen WUE goals.
- Evaluation and implementation of WUE measures.
- Projected water savings.
- Customer education.
- WUE program effectiveness; and
- DSL evaluation.

4.1.2 Current Water Use Efficiency Program

Sunnyside's current Water Use Efficiency Program (WUE Program) is described in this section of the City's Water System Plan. Sunnyside's WUE Program is an update to the one included in the *2016 Water System Plan*. The City of Sunnyside previously established a goal in the *2016 Water System Plan* to "reduce single-family, multi-family residential and commercial/industrial connections by 25 gallons per day per connection by December 31, 2020 as measured by annual average demand for each classification."

The *2016 Water System Plan* did not identify the average annual demand for each user category on a per connection basis. However, the City's consumption per ERU was 297 gpd. As identified in Table 2-7, the calculated flow per ERU was 286 gpd for 2020, and the average ERU flow for the period 2018-2022 was 290 gpd/ERU. Therefore, the City has made progress towards meeting its goal, although it has not fully achieved it.

4.1.3 Water Use Efficiency Goals

Water use efficiency goals are an integral component of the WUE program, setting the groundwork for more efficient use of water. After reviewing the past WUE program goals and water use efficiency performance, the City has adopted a goal of reducing its flow per ERU from 290 gpd/ERU to 280 gpd/ERU by 2033.

The WUE goals were presented to the public for review and adopted by the City council. A copy of the public notice and the public forum meeting notes are available in CHAPTER 10 of this Plan.

Adoption of the above WUE goals is expected to continue to improve system performance and consequently reduce increases in water production volumes despite projected growth within the City. It is anticipated that a reduction in water use of ten gallons per day per ERU will eventually save approximately 47 million gallons per year, based on 13,189 estimated ERUs in 2034.

4.1.4 Evaluation and Implementation of Water Use Efficiency Measures

Municipal water systems are required to evaluate or implement a specified number of demand side water use efficiency (WUE) measures based upon the size of the water system. Table 4-2 shows the minimum number of measures required to be evaluated or implemented by the City of Sunnyside.

TABLE 4-2 WATER USE EFFICIENCY MEASURES	
Number of Service Connections	Number of Water Use Efficiency Measures to be Evaluated
Less than 500	1
500 - 999	4
1,000 – 2,499	5
2,500 – 9,999	6 (Sunnyside's current requirement*)
10,000 – 49,999	9
Greater than 50,000	12

A discussion of the demand side measures that the City of Sunnyside has evaluated to achieve its specified efficiency goal is provided below, along with the estimated costs to implement the measures and the projected water savings. Evaluation of the following measures for cost-effectiveness is primarily based upon the overall implementation costs or compared to the amount or potential water savings. The City has noted ongoing success using the following measures and will continue to implement the same measures as identified in the previous WUE Program.

It should be noted that water savings attributable to public information activities are difficult to quantify because they are not directly linked to physically saving water. Although these measures cannot be specifically quantified, they are an integral part of the WUE Program, raising awareness of the importance of water conservation and increasing community participation in other conservation activities.

Water Use Efficiency School Outreach Program – The City will continue an outreach program to local public schools. City representatives will deliver interactive presentations to elementary school students, distribute age-appropriate education material, and engage students in fun activities that encourage water conservation. The City will target third grade classrooms at every public elementary school annually, thereby ensuring that public school students know and understand the importance of conserving water. The City hopes that by engaging the children in fun educational activities, the presentations will have both an immediate and long-term impact on their water-use practices. The posters and materials will also be posted in City Hall and other City-owned public facilities.

Monthly Water Bill Notification – The City will include a brochure addressing consumer leak detection with water bills at least once per year and include WUE information in the annual Consumer Confidence Report. The purpose of the brochure is to increase awareness of at-home leak detection and to educate water customers by providing leak detection techniques, as well as some solutions and resources for fixing leaks. People often underestimate the amount of water wasted by a leak and therefore delay in fixing small leaks when they are identified. The City hopes that the annual mailing will encourage water customers to take the time to survey their home for leaks at least once per year. To further encourage water conservation, the City will include a 12-month rolling average of historical water consumption in the bills, thereby graphically showing customers how their water use has changed with time. Per WUE guidelines, this measure will be counted as two measures because it applies to multiple user classifications.

Newspaper Articles – The City will continue to publish two articles per year to deliver water conservation information and tips in the local newspapers. The spring article will focus on outdoor conservation tips, and the fall article on indoor conservation. The City feels that by providing water customers with seasonally appropriate water conservation tips, they will be more likely to modify their water usage habits.

Targeted Water Conservation Information – There are many dwelling units that do not receive individual tenant water bills, such as apartment complexes and retirement homes. The City will work with building owners and managers to supply residents with all of the conservation material that is delivered to individual-tenant water users, including conservation tips and leak detection brochures. These materials will also be made available at City Hall.

SVID Irrigation Notifications – The City recognizes that SVID operates an irrigation system with laterals throughout the City. Despite the cost effectiveness of using a dedicated irrigation supplier in lieu of potable water, many customers are not connected to SVID. The City intends to send out targeted flyers in billings on an annual basis to let customers know about the availability of SVID lines and contact information to assist when making this transition.

Water Savings Materials – The City will order a variety of water savings kits and parts such as low flow shower heads and toilet tank displacement bladders to give away to interested citizens. These will be available at City booths at local events, as well as periodic postings on social media to let citizens know they can pick them up for use.

In addition to these programs, the City also completes the required customer general education regarding the importance of using water efficiently, including a message in their annual Consumer Confidence Report.

The cost to complete all the measures identified above is included in the City's Water Division annual budget.

4.1.5 Water Use Efficiency Program Effectiveness

The Water Use Efficiency Rule requires the completion of annual performance reporting to system customers and to the Department of Health (DOH). The City will use the preparation of the Annual WUE Performance Report as an opportunity to review the effectiveness of the WUE measures and determine if established goals require revision. The annual effectiveness evaluation and the Annual WUE Performance Report will include the following elements:

- Calculation of distribution system leakage in terms of volume and percent of total water production.
- Identification of WUE goals.
- Evaluation of established WUE goals, including estimating water savings achieved through implemented measures and progress towards satisfying goals.

Sunnyside will submit its Annual WUE Performance Report to DOH by July 1 of each year. Information contained in the Annual WUE Performance Report will also be included in the City's Consumer Confidence Report distributed to all water system customers annually. WUE Program effectiveness will also be evaluated every ten years when the Water System Plan is updated. At this time both goals and measures will be reevaluated to determine the most cost-effective method to achieve the updated goals.

4.1.6 Water Use Efficiency Savings

To quantify the reduction in water supply requirements expected due to implementing WUE measures identified in Section 4.1.5, estimates of water use savings have been calculated. Provided in Table 4-3 is a summary of the water demand projections for years 2034 and 2044, with and without WUE measures implemented.

TABLE 4-3 DEMAND FORECAST WITH AND WITHOUT PROJECTED WUE SAVINGS						
Year	Total Annual Demand (MG/Year)		ADD (MGD)		MDD (MGD)	
	Without WUE	With WUE	Without WUE	With WUE	Without WUE	With WUE
2034	1,369	1,348	3.83	3.69	8.19	7.91
2044	1,702	1,643	4.66	4.50	9.99	9.64

4.1.7 Water System Metering

A critical factor in using water efficiently is accurate measurement of water production and consumption. This data serves three important roles: collecting revenue, identifying the degree of leakage and other unmetered consumption in the water system, and targeting water consumption that may be a good candidate for reduction efforts. Measurement of production and consumption relies upon accurate water metering. The City has water meters on each water service and source for this purpose.

The City is in the process of replacing all its customer service meters and has been doing so for multiple years. Manufacturer backlogs that developed during the COVID-19 pandemic have prevented the City from completing this work, and meter replacements have continued as meters become available. This ongoing replacement project will ultimately result in the entire water system being connected to a fixed network that allows City staff to read meters remotely, identify leaks more quickly and efficiently, and reduce manpower required to read meters manually. At the end of 2023, approximately half of the City's customer meters had been replaced. The source meters are calibrated annually and replaced approximately every 10 years.

City of SUNNYSIDE WASHINGTON

CHAPTER 5

SOURCE WATER PROTECTION

HLA Engineering and Land Surveying, Inc.

5.1 WELLHEAD PROTECTION PROGRAM

The City of Sunnyside completed a Wellhead Protection Plan in 2005 in partnership with Economic and Engineering Services, Inc. The City's plan identifies potential sources of contamination near its groundwater supplies, proposes management strategies to prevent contamination of those supplies, and develops a contingency plan for contamination mitigation if groundwater does become contaminated. The document contains the following elements:

1. A water system overview.
2. A well susceptibility determination for each well.
3. Definition of the regional hydrogeological framework, including applicable modeling parameters
4. A wellhead protection area determination for each well using a semi-analytical modeling approach
5. An inventory of potential ground water contaminant sources.
6. A spill response plan
7. A wellhead protection management plan
8. A contingency plan which includes an analysis of source capacity, reliability, and water rights; short- and long-term alternate water sources; and emergency and spill response procedures; and
9. Recommended management practices for protection of the City's groundwater sources.

The *Wellhead Protection Plan* is considered a companion document to this *Water System Plan Update* and should be consulted for specific details and information regarding Sunnyside's wellhead protection program. Excerpts from the *Wellhead Protection Plan* are included in the Miscellaneous Documents in CHAPTER 10 of this Plan, including Sunnyside's wellhead protection area (WHPA) delineation calculations and WHPA delineation figures for reference.

Table 5-1 provides a summary of the City's active water sources and indicates whether the sanitary control area falls entirely within City property. For sources where the 100-foot diameter sanitary control area extends beyond City property, a protective covenant is required for the portions outside of City-owned land. The City will collect these legal documents to ensure this process has been completed for all applicable sources.

TABLE 5-1 SOURCE SANITARY CONTROL AREA SUMMARY

Well Source No..	Property Ownership	Protective Covenant Required on Adjacent Property	Physical Site Security
6	Sunnyside School District	Yes	Located within locked wellhouse
7	City of Selah	No	Located within locked wellhouse
8	City of Selah	Yes	Located within locked wellhouse
9	City of Selah	No	Located within property secured by locked fencing
11	City of Selah	Yes	Located within locked wellhouse
12	City of Selah	No	Located within locked wellhouse
13	City of Selah	No	Located within property secured by locked fencing

As part of this *Water System Plan*, the Potential Contaminant Source and Notification List has been updated and is presented below. The time-of-travel radii for the wells has also been updated on Figure 5-1 using a fixed radius method. Notification letters were sent out to these customers in August 2024, and an example notification is included in CHAPTER 10. Moving forward, these notifications will be sent out every two years.

5.2 EXEMPT WELLS

The City of Sunnyside allows the drilling and use of exempt wells within its service area only if the property to be served is located outside the area served by the City's water system. Exempt wells are defined in state law (RCW 90.44.050) as:

> "*. . . any withdrawal of public ground waters for stock-watering purposes, or for the watering of a lawn or of a noncommercial garden not exceeding one-half acre in area, or for a single or group domestic uses in the amount not exceeding five thousand gallons a day, or for an industrial purpose in the amount not exceeding five thousand gallons a day, is and shall be exempt from the provisions of this section . . .*".

The City requires those areas served by exempt wells to connect to the City's water system when it extends to the property. At that time, any exempt wells on the property shall either be decommissioned in accordance with the applicable Washington Administrative Code (WAC) requirements or taken over by the City to become part of the City's water system.

CITY OF SUNNYSIDE

Water System Plan Update

POTENTIAL CONTAMINANT SOURCES AND TRAVEL TIME ZONES

N W E S

0 1250 2500

WELL 12
WELL 8
WELL 10
WELL 11
WELL 9
WELL 13
WELL 6
WELL 7

LEGEND

- CITY LIMITS / RETAIL SERVICE AREA
- SERVICE AREA BOUNDARY (UGA) AND WATER RIGHT PLACE OF USE
- SOURCE WELL
- 6- MONTH TIME OF TRAVEL
- 1-YEAR TIME OF TRAVEL
- 5-YEAR TIME OF TRAVEL
- 10-YEAR TIME OF TRAVEL

CONTAMINANT SOURCES

1. Am/Pm
2. Bargain Hut
3. Connel Oil Inc.
4. Bee Jay Scales (Sandy Farms)
5. Valley Wide Cooperative
6. 1st Chain Lube & Oil
7. Bob's Auto Clinic
8. Burlington Northern Tail Terminal
9. Sunsteel LLC
10. Port of Sunnyside
11. Cascade Natural Gas
12. Chateau Ste Michelle
13. Circle L
14. Cliff's Battery Service
15. DRR Fruit Products
16. Estudillo's Food Store
17. Carniceria la Mas Barrata
18. Golob & Sons
19. Speck Motors
20. Hickenbottom Sons Inc.
21. Seneca
22. Sunnyside Food Mart
23. 16th Street Marker
24. James River Corporation
25. Jerry's Steel Supply
26. Christenson Inc.
27. Johnson Fruit & Cold Storage
28. Johnson Fruit Cannery
29. JRJ Service Inc.
30. Kellogg's Korner
31. Abarrites Casa Mia
32. Maid O' Clover
33. Manhole 34 PLP Group
34. Bullet Trailers
35. Demolished Gas Station
36. Monson & Sons (Bar-S)
37. New Hope Sunnyside
38. Ameristar Outpost Travel Plaza
39. Park n Pak
40. Pet Health Clinic
41. Port of Sunnyside WWTP
42. PW Pipe
43. RDO Equipment Co.
44. Roza Irrigation District
45. School District Bus Garage
46. Simplot Soilbuilders
47. Start Transport Trailers
48. Yakima Chief Hops
49. Glez Family Restaurant
50. Sunnyside Chevron
51. Sunnyside Municipal Airport
52. Sunnyside Municipal Well 1
53. Sunnyside WWTP
54. Sunnyside Valley Irrigation District
55. Tom Denchel Ford
56. Blueline Equipment Company
57. Union Pacific Railroad
58. City Sunnyside Water Dept.
59. Antels Pollen
60. Upland Farms
61. Valley Dry Cleaners
62. Milne Fruit Produce
63. AL-Tech Truck Repair
64. Valley View Gas Mart (Time Oil)
65. Washington Hills Cellars
66. West Farm Foods (Darigold)
67. Coleman Oil
68. Yakima Chief Inc.
69. Yakima Co Maint. Shops

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP Figure 5-1 Travel Time Zones.cwg

FIGURE 5-1

5.3 UPDATES AND MODIFICATIONS TO THE WELLHEAD PROTECTION PLAN

The Potential Contaminant Source and Notification List, originally developed in 2005, has been updated in 2023 as part of this *Water System Plan* Updated as shown below. Notification letters were mailed as part of this update, and sample letters are in CHAPTER 10.

TABLE 5-2 POTENTIAL CONTAMINANT SOURCE LIST

Map No.	Property Owner	Description	Address
1	AM/PM	Haz. Waste, Four USTs	1850 Waneta Rd.
2	Bargain Hut	LUST	801 Harrison
3	Connel Oil Inc.	Four USTs	106 N. 9th
4	Bee Jay Scales (Sandy Farms)	Haz. Waste, Pesticide	116 N. 1st St.
5	Valley Wide Cooperative	Haz. Waste, LUST, Four USTs	1720 Eastway Dr.
6	Ismael Morales Perez (Owner) 1st Chain Lube & Oil	Four USTs	303 E. Lincoln Ave.
7	Bob's Auto Clinic	One USTs	1006 E. Lincoln Ave.
8	Burlington Northern Rail Terminal	LUST	MP 54.5 12th Sub. Portland Div.
9	Sunsteel LLC	Haz. Waste	2002 Morgan Rd.
10	Port of Sunnyside	Two USTs	111 E. Lincoln Ave.
11	Cascade Natural Gas	LUST	512 Decatur Ave.
12	Chateau Ste Michelle	Two USTs	245902 N Cold Creek Rd.
13	Circle K	LUST	809 Hwy 12
14	Cliff's Battery Service	Metals	Scoon & Woodin Rd.
15	DRR Fruit Products	Food Processor	380 Alexander Rd.
16	Estudillo's Food Store	Two USTs	2601 Sheller Rd.
17	Carniceria la Mas Barrata	LUST	111 N 6th St.
18	Golob & Sons	Feedlot	2391 Sheller Rd.
19	Speck Motors	Haz Waste, LUST	61 E. Allen Rd.
20	Hickenbottom Sons Inc.	Pesticide, Halogenated Organic Compounds	301 Warehouse Ave
21	Seneca	Food Processor	1525 S 4th St.
22	Jugesh Kumar (Owner) Sunnyside Food Mart	Three USTs	600 Yakima Valley Hwy
23	16th Street Marker	Three USTs	1121 S. 16th St.
24	James River Corporation (Johnson Concentrates)	Food Processor	310-314 Edison Ave.
25	Jerry's Steel Supply	LUST	232 N. Sixth St.
26	Christenson Inc.	Haz. Waste, LUST, Three USTs	636 E Edison Ave.
27	Johnson Fruit & Cold Storage	Food Processor	336 Blaine Ave.
28	Johnson Fruit Cannery	Food Processor	301 Warehouse Ave.
29	JRJ Service Inc.	Haz. Waste	405 Scoon Rd.
30	Kellogg's Korner	LUST, Petroleum	200 Midvale Rd.
31	Gusto Casa Mia	LUST, Petroleum	200 N. 1st St.
32	Maid O' Clover	LUST, Three USTs, Petroleum	1530 Hwy 12
33	Manhole 34 PLP Group	Haz. Waste, Petroleum	600-601 & 612 Hwy 12
34	Bullet Trailers	Haz. Waste	410 Factory Rd.
35	Demolished Gas Station	Three USTs	2665 E. Lincoln Ave.
36	Monson & Sons (Bar-S)	Feedlot	Lat 46.18.52; Long 120.00.53
37	New Hope Sunnyside	LUST	1510 E. Lincoln Ave.
38	Ameristar Outpost Travel Plaza	Four USTs	1825 Waneta Rd.
39	Park n Pak	One USTs	905 E. Lincoln Ave.
40	Pet Health Clinic	LUST	2210A E. Edison Rd.
41	Port of Sunnyside WWTP	NPDES	825 Midvale Rd.
42	PW Pipe	Haz. Waste	1820 S. 1st St.
43	RDO Equipment Co.	Haz. Waste	140 Midvale Rd.
44	Roza Irrigation District	Haz. Waste, LUST, Petroleum, Two USTs	125 S. 13th St.
45	School District Bus Garage	LUST	Edison & Hwy 12
46	Simplot Soilbuilders	Haz. Waste	1st & Zillah Ave

TABLE 5-2 POTENTIAL CONTAMINANT SOURCE LIST (continued)			
47	Star Transport Trailers	Haz. Waste	230 Hwy 241
48	Yakima Chief Hops	LUST	325 E South Hill Rd.
49	Glez Family Restaurant	Two USTs	1850 Yakima Valley Hwy
50	Sunnyside Chevron	Three USTs	1805 S. 1st St.
51	Sunnyside Municipal Airport	Petroleum	2 Miles East of City
52	Sunnyside Municipal Well 1	Halogenated Organic Compounds	Grant St
53	Sunnyside WWTP	NPDES	1338 S. 4th St.
54	Sunnyside Valley Irrigation District	LUST	1433 S. 4th St.
55	Tom Denchel Ford	Haz. Waste	301 S. 6th St.
56	Blueline Equipment Company	Five USTs	31501 Yakima Valley Hwy.
57	Union Pacific Railroad	LUST	S. 5th Ave. & Edison
58	City Sunnyside Water Dept.	LUST	409 E. Lincoln Ave.
59	Antles Pollen	Petroleum	511 E. Lincoln Ave.
60	Upland Farms	Two USTs	Rt. 1 Box 1166
61	Valley Dry Cleaners	Halogenated Organic Compounds	624 S. 6th St.
62	Milne Fruit Produce	Food Processor	108 E. Blaine Avenue
63	AL-Tech Truck Repair	Haz. Waste	601 Hwy 241
64	Valley View Gas Mart (Time Oil)	LUST, Two USTs	107 W. Lincoln Ave.
65	Washington Hills Cellars	Food Processor	111 E. Lincoln Ave.
66	West Farm Foods (Darigold)	Food Processor	400 Alexander Rd.
67	Coleman Oil	Three USTs	135 South Hill Rd.
68	Yakima Chief Inc.	Haz. Waste, Food Processor	520 S. Hill Rd
69	Yakima County Maintenance Shops	Haz Waste, Two USTs	321 S. 1st St.

City of SUNNYSIDE WASHINGTON

CHAPTER 6

OPERATION AND MAINTENANCE PROGRAM

HLA Engineering and Land Surveying, Inc.

6.1 INTRODUCTION

The Water Division is responsible for the operation and maintenance of the water system, including day-to-day operations, preventative maintenance, meter reading, equipment maintenance and repair, material acquisition, water quality monitoring, maintenance of water services, installation of new services, water line locates, pipeline repair, implementation of new technology, maintenance of new and existing technology, minor electrical repair, and minor construction of new or replacement facilities. The City continues to maintain and update its Operations and Maintenance Manual, which documents its procedures. This binder is maintained at the Division office and includes details regarding routine system operations and special operational programs.

6.2 WATER SYSTEM MANAGEMENT AND PERSONNEL

The purpose of this section is to identify personnel responsible for the day-to-day operation of the water system and those positions responsible for development and/or approval of the operating budget and capital improvement program.

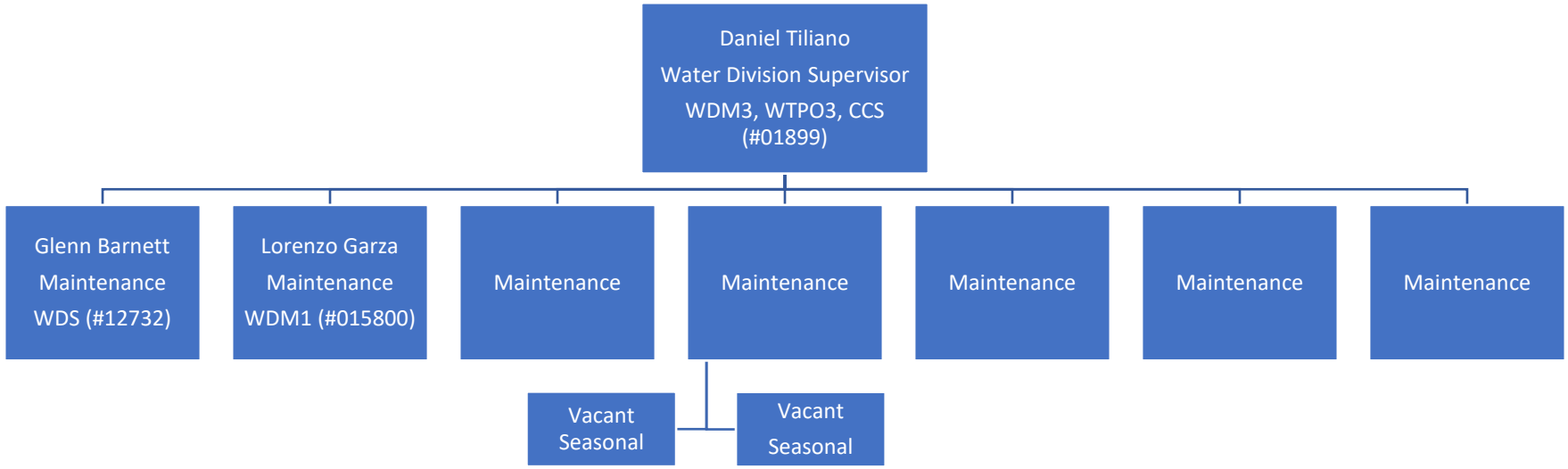
Water System Management Structure

Staffing of the City's Water Division includes a supervisor and 7 maintenance workers. Two temporary employees are used in the summer for additional seasonal tasks. The current Water Division staff and their certifications are listed in Figure 6-1. All Group A water systems within the State of Washington are classified according to the population they serve and are required by state regulation to have a certified operator in charge of system operation. Operators are required to be certified at or above the certification level of the distribution system. Sunnyside's water distribution system, which serves between 15,001 and 50,000 persons, is classified as a Group 3 system and is, therefore, required to have a Class 3 (or greater) Water Distribution Manager (WDM) responsible for system operation. The City is in compliance with the Water Works Certification requirements of WAC 246-292, as the Water Division Supervisor is certified as both a Water Distribution Manager 3 and a Cross Connection Specialist.

The supervisor is responsible for having knowledge of all aspects of the water system and its operations, maintenance, policies, and procedures. In addition, the supervisor is accountable for the Division's compliance with applicable regulations, maintenance of appropriate system records, and the safety of its staff.

All maintenance staff are responsible for having knowledge of all aspects of the general operations, maintenance, policies and procedure of the Division, and must be capable of performing required duties with minimal direction or supervision.

FIGURE 6-1 WATER DIVISION STAFF



Additional personnel within the City management hierarchy are identified below.

Mayor and City Council: Responsible for establishing all water system policies, including service area boundaries, user rate structures, water system personnel salaries, water department budget, and capital improvements. Approves all expenditures.

Public Works Director: Responsible for the direct management of all day-to-day water system operation and maintenance tasks. Reports on the status and needs of the water system to the Mayor and City Council. Prepares annual water department budget. Reviews all water system policy changes and expenditures. Establishes staff job descriptions and requirements and recommends hiring of personnel. Serves as public and press contact regarding water system information.

Finance and Administrative Services Director: Responsible for supervision of utility billings and budgeting preparation. Allocates funds for approved expenditures.

Utility Billing Clerk: Responsible for entering water meter reading data into the computer, generating monthly water billings, and maintaining water consumption records.

Consulting Engineer: Assists City in long-range planning, aids Public Works Director in technical aspects of water system, and provides design engineering and construction services for capital improvements.

6.2.1 Professional Growth

In Washington State, all certified water works operators must demonstrate professional growth every three years. This can be accomplished by a certified operator either advancing in their certification program or accumulating a minimum of three continuing education units (CEUs) or college credits during the three-year period. The City supports its Water Division staff in pursuing either option.

6.3 SYSTEM OPERATION AND CONTROL

CHAPTER 3, provides a detailed look at the various water system components and their interrelationship. This interrelationship is depicted in Figure 6-1, and a map of the existing water system (Map A) is provided in CHAPTER 10 of this Plan. It is important that water department personnel fully understand the system in order to evaluate its operation and maintenance requirements.

Routine System Operation and Preventative Maintenance

An outline of routine operational tasks for the various major system components is provided below:

A. Source Wells and Pumps

1. Daily Tasks
   a. Check inside and outside all well facilities visually
   b. Inspect and maintenance oil levels in well pumps.
   c. Check for alarms or inconsistencies on the PLC screen.
   d. Check pump packing glands.
   e. Check chlorination system for residual and proper dosage.
   f. Clean well house floors, doors, walls, ceilings, lights, etc.

2. Monthly Tasks
   a. Check and grease Well pump packing and lubrication points.
   b. Check oil level in pump bearing reservoir and fill, if necessary.
   c. Test generator set

3. Quarterly Tasks
   a. Grease seal bearings on pump motors.

4. Seasonal/Yearly Tasks
   a. Winterize or de-winterize pumphouse facilities.
   b. Check heating equipment and thermostats.
   c. Clean chlorination system equipment
   d. Well pump control valve inspections
   e. Summarize flow meter totalizer records and compare to volume of water sold to determine lost and unaccounted for water
   f. Generator set complete inspection and maintenance
   g. Electrical panel and switch gear inspection and maintenance

5. As Required
   a. Drawdown confirmation measurements performed as required (SCADA monitors drawdowns continuously).
   b. Painting of building interior and exterior.

B. Reservoirs

1. Daily Tasks
   a. Check pressure transmitter and level controls at booster station for all reservoirs.
   b. Check chlorine reading in each reservoir.

2. Weekly Tasks
   a. Ground maintenance at all sites

3. Seasonal/Yearly Tasks
   a. Visually inspect reservoir exteriors.
   b. Inspect reservoir interiors without removing them from service.
   c. Removal of a booster pump and motor; rebuild as needed.

C. Distribution System

1. Daily Tasks
   a. Calibrate chlorine analyzer if reading is off by more than 0.1 ppm from the free chlorine rading.

2. Monthly Tasks
   a. Take required number of water samples from specific sites within the distribution system as identified in the Coliform Monitoring Plan and from DOH and submit them to lab for bacteriological analysis
   b. Deliver delinquent account “door hangers”
   c. Turn off and on delinquent accounts
   d. Reading of all meters: AMI/AMR
   e. Valve Maintenance Program
   f. Hydrant Maintenance Program

3. Quarterly Tasks
   a. Flush selected fire hydrants in various areas throughout the system.

4. Seasonal/Yearly Tasks
   a. Insulate service meters with bags of biodegradable peanuts as needed.
   b. Operate and flush all fire hydrants. Lubricate hydrant caps and threads, touch-up painting as required.
   c. Inspection of pressure reducing valves.
   d. Inventory of materials.
   e. Annual inspection of all PRVs.
   f. Annual inspection of all chlorination equipment.
   g. 1 1/2" and larger meter testing.

5. As Required Tasks
   a. Flush low velocity water mains as required to remove sedimentation.
   b. Approve and inspect new mains.
   c. Encourage conservation with customers.
   d. Resolve customer complaints, re-reads, etc.
   e. Line locates for other utility projects
   f. Map as-builts

D. Telemetry System

1. Daily Tasks
   a. Observe telemetry system operation.
   b. Check well and booster pump setpoints for desired season

2. Monthly Tasks
   a. Check telemetry system alarms.

3. Seasonal/Yearly Tasks
   a. Remove and Replace (R/R) all battery back-up for remote sites and PCs.

The Operations and Maintenance Manual addresses additional duties of the Division, such as:

- Customer Service (property transfers; leak checks; delinquencies)
- Booster station maintenance and repairs
- Coliform sample collection
- Source and other distribution system sampling
- Meter, Radio, and Cable R/R with technology used such as RNI and Sensus Analytics.
- Safety knowledge and implementation such as trench/shoring, roadway/traffic/vehicle, hazardous locations, by completing monthly safety classes.

6.4 COMPREHENSIVE MONITORING PLAN

The City of Sunnyside monitors its system's water quality in accordance with the requirements of WAC 246-290-300, 246-290-310, and 246-290-320, which define the minimum monitoring requirements, maximum contaminant levels (MCL), and follow-up action requirements for public water systems. The following summarizes the requirements as they pertain to the City of Sunnyside:

6.4.1 Monitoring Requirements, Location, and Frequency

Bacteriological Analysis: Bacteriological analysis is conducted in accordance with the procedures and locations specified in Sunnyside's Coliform Monitoring Plan, a copy of which is provided in the Miscellaneous Documents Chapter (CHAPTER 10) of this Plan. The minimum number of bacteriological samples required per month within the distribution system is based upon the population served and is shown in part on Table 6-1 below:

TABLE 6-1 MINIMUM MONTHLY COLIFORM SAMPLING REQUIREMENTS

Permanent Population Served	Minimum Number of Samples per Month
1 - 1,000	1
1,001 - 2,500	2
2,501 - 3,300	3
3,301 - 4,100	4
4,101 - 4,900	5
4,901 - 5,800	6
5,801 - 6,700	7
6,701 - 7,600	8
7,601 - 8,500	9
8,501 - 12,900	10
12-901 – 17,200	15 (Sunnyside's Current Requirement)
17,201 – 21,500	20
21,501 – 25,000	25

Disinfection Byproducts: Samples are to be collected from 1 location within the distribution system as identified in the City's Disinfection Byproducts Monitoring Plan and as directed by the City's current Water Quality Monitoring Report issued by the Department of Health.

Inorganic Chemical and Physical Analyses: A minimum of one sample every nine years from each source well is required. The samples shall be collected from a point representative of the source before any treatment.

Radionuclides: Radionuclide samples from each source are required once every six years. The samples shall be collected from a point representative of the source before any treatment.

Volatile Organic Chemicals (VOCs): VOC samples shall be taken at each source once every 3 months for the first 12 months of operation, or as directed by the Department of Health. If no VOCs are detected in the first sample from a ground water source, only one additional sample will be required during the first 12 months. If no VOCs are above the specified MCLs after the initial 12 months of monitoring, the water system shall monitor each source at least once every three years. The samples shall be collected from a point representative of the source, after treatment, and prior to entry into the distribution system.

Synthetic Organic Chemicals (SOCs): SOC samples shall be taken at each source once every 3 months for the first 12 months of operation, or as directed by the Department of Health. If no SOCs are detected in the first sample from a ground water source, only one additional sample will be required during the first 12 months. If no SOCs are above the specified MCLs after the initial 12 months of monitoring, the water system shall monitor each source at least once every three years. The samples shall be collected from a point representative of the source, after treatment, and prior to entry into the distribution system.

Lead and Copper: 30 samples at targeted sample tap locations throughout the distribution system are required every three years for lead and copper monitoring. A copy of the City's Lead and Copper Monitoring Plan is located in CHAPTER 10.

Other Substances: Total trihalomethane (THM) and Halo-Acetic Acids (HAA5) testing is required once per year within the distribution system, and asbestos testing is performed every 9 years. No other substances are required to be monitored at this time. Monitoring of other substances in the future will be as required by the Department of Health.

6.4.2 Sanitary Surveys

The most recent sanitary survey was completed on August 5, 2020, and letter issued March 10, 2021. The only findings of any significance were requests to inspect and repair potential contaminant vectors at well and reservoir sites. The City has since performed the necessary repairs and inspections. A copy of the most recent sanitary survey data report can be found in CHAPTER 10.

6.4.3 Testing Laboratories

Samples which have been collected must be transported and analyzed in accordance with Department of Health requirements. The analyses must be done by a state public health laboratory or a state certified private laboratory.

The City of Sunnyside routinely delivers bacteriological samples to Ag Health Laboratories, Inc. on the same day they are taken. Sample bottles are obtained from the laboratory.

Samples for other required tests, e.g., Inorganic Chemical and Physical Analysis, are delivered to state certified laboratory on the same day they are taken. As with the bacteriological samples, sample bottles are obtained from the laboratory.

6.4.4 Violation Procedures

The City of Sunnyside is responsible for complying with the standards of water quality identified in WAC 246-290-310. If any substance exceeds its maximum contaminant level (MCL), the City shall take follow-up action as outlined under WAC 246-290-320.

A. Maximum Contaminant Levels (MCLs)

1. Bacteriological – If any coliform bacteria are present in any sample, follow-up action as described under WAC 246-290-320(2) shall be taken in accordance with the City's Coliform Monitoring Plan and the Groundwater Rule (GWR) requirements.

2. Disinfection Byproducts – MCLs for disinfection byproducts are shown on Table 6-2.

TABLE 6-2 DISINFECTION BYPRODUCTS MCLs

CONTAMINANT	MCL (mg/l)	COMPLIANCE
Total Trihalomethanes (TTHM)	0.080	LRAA (Reduced Monitoring)
Haloacetic Acids (HAA5)	0.060	LRAA (Reduced Monitoring)
Bromate	0.010	RAA of Quarterly Averages
Chlorite	1.0	Daily

3. Inorganic Chemical and Physical (IOC) – MCLs for inorganic chemical and physical properties are as shown in Table 6-3.

TABLE 6-3 INORGANIC CHEMICAL MCLS

Chemical or Physical Property	MCL (mg/l)
Primary Substances	
Antimony (Sb)	0.006
Arsenic (As)	0.05
Asbestos	7 million fibers/liter (> 10 microns)
Barium (Ba)	2.0
Beryllium (Be)	0.004
Cadmium (Cd)	0.005
Chromium (Cr)	0.1
Copper (Cu)*	1.3
Cyanide (HCN)	0.2
Fluoride (F)	4.0
Lead (Pb)*	0.015
Mercury (Hg)	0.002
Nickel (Ni)	0.1
Nitrate (as N)	10.0
Nitrite (as N)	1.0
Selenium (Se)	0.05
Sodium (Na)*	20
Thallium (Tl)	0.002
Secondary Substances	
Chloride (Cl)	250.0
Fluoride (F)	2.0
Iron (Fe)	0.3
Manganese (Mn)	0.05
Silver (Ag)	0.1
Sulfate (SO_4)	250
Zinc (Zn)	5.0
Color	15 Units
Hardness	None
Specific Conductivity	700 umhos/cm
* No DOH established MCL. Represents EPA established “action levels” for lead and copper and recommended level for sodium.	

4. Radionuclides – MCLs for Radionuclides are as shown in Table 6-4.

TABLE 6-4 RADIONUCLIDE MCLS

RADIONUCLIDE	MCL
Radium-226	3 pCi/l
Combined Radium-226 and Radium-228	5 pCi/l
Gross alpha particle activity (excluding uranium)	15 pCi/l
Beta particle and photon radioactivity	4 milliren/year

5. Volatile Organic Chemicals (VOCs) – MCLs for VOCs are as shown in Table 6-5.

TABLE 6-5 VOLATILE ORGANIC CHEMICAL MCLS

VOLATILE ORGANIC CHEMICAL	MCL (mg/l)
Benzene	0.005
Carbon Tetrachloride	0.005
para-Dichlorobenzene	0.075
Trichloroethylene	0.005
Vinyl Chloride	0.002
1,1,1-Trichloroethane	0.2
1,1-Dichloroethylene	0.007
1,2-Dichloroethane	0.005
cis-1,2-Dichloroethylene	0.07
Ethylbenzene	0.7
Monochlorobenzene	0.1
o-Dichlorobenzene	0.6
Styrene	0.1
Tetrachloroethylene	0.005
Toluene	1
Trans-1,2-Dichloroethylene	0.1
Xylenes	10
1,2-Dichloropropane	0.005
Dichloromethane	0.005
1,1,2-Trichloroethane	0.005
1,2,4-Trichlorobenzene	0.07

6. Synthetic Organic Chemicals (SOCs) – MCLs for SOCs are as shown in Table 6-6.

TABLE 6-6 SYNTHETIC ORGANIC CHEMICAL MCLS

SYNTHETIC ORGANIC CHEMICAL	MCL (mg/l)
Alachlor	0.002
Atrazine	0.003
Carbofuran	0.04
Chlordane	0.002
EDB	0
DBCP	0.0002
Heptachlor	0.0004
Heptachlor Epoxide	0.0002
Lindane	0.0002
Methoxychlor	0.04
Toxaphene	0.0003
PCBs	0.0005
Pentachlorophenol	0.001
2,4-D	0.07
2,4,5-TP	0.05
PAHs (Benzo(a)pyrene)	0.0002
Dalapon	0.2
Di(ethylhexyl)-Adipate	0.4
Di(ethylhexyl)-Phthalate	0.006
Dinoseb	0.007
Diquat	0.1
Endothall	0.1
Endrin	0.002
Glyphosate	0.7
Hexachlorobenzene	0.001
Hexachlorocyclo-Pentadiene	0.05
Oxymal	0.2
Picloram	0.5
Simazine	0.004
2,3,7,8-TCDD (Dioxin)	0

B. Follow-up Action

1. General:

   a. If water quality exceeds any MCLs listed in WAC 246-290-310, the purveyor shall notify the Department and take follow-up action as described in this section.

   b. When a primary MCL violation occurs, the purveyor shall:
      i. Notify the Department within 48 hours in accordance with WAC 246-290-480.
      ii. Notify the public according to the procedures outlined under WAC 246-290-71001.
      iii. Determine the cause of the contamination; and
      iv. Take corrective action as required by the Department.

   c. When a secondary MCL violation occurs, the purveyor shall notify the Department and take corrective action as directed by the Department.

2. Bacteriological:
   a. When coliform bacteria are present in any sample and the sample is not invalidated under e. of this subsection, the purveyor shall ensure the following actions are taken:
      i. The sample is analyzed for fecal coliform or E.coli. When a sample with a coliform presence is not analyzed for E.coli or fecal coliforms, the sample shall be considered as having a fecal coliform presence for MCL compliance purposes.
      ii. Repeat samples are collected in accordance with b. of this subsection.
      iii. Collect triggered source samples in accordance with c. of this subsection and have them tested for E. coli.
      iv. The Department is notified in accordance with WAC 246-290-480; and
      v. The cause of the coliform presence is determined and corrected.

   b. Repeat samples: The purveyor shall collect and submit for analysis a set of repeat samples for every sample in which the presence of coliforms is detected in accordance with the following:
      i. A set of three (3) repeat coliform samples is required for Group A systems and shall be collected at the following locations:

         (1) At the site of the previous sample with a coliform presence.
         (2) Within five active services upstream of the site of the sample with a coliform presence.
         (3) Within five active services downstream of the site of the sample with a coliform presence.

      ii. For Group A systems, all samples in a set of repeat samples shall be collected on the same day and submitted for analysis within 24 hours after notification by the laboratory of a coliform presence. If the purveyor can demonstrate to the satisfaction of the Department that logistical problems beyond the purveyor's control make analysis of the samples in the repeat sample set impractical because the time between sample collection and analysis will exceed 30 hours, then the purveyor shall collect the required set of repeat samples as directed by the Department.

iii. When repeat samples have coliform presence, the purveyor shall:

(1) Contact the Department and collect a minimum of one additional set of repeat samples as directed by the Department: or
(2) Collect one additional set of repeat samples for each sample where coliform presence was detected.

iv. If a sample with a coliform presence was collected from the first two or last two active services, the purveyor shall monitor as directed by the Department.

v. The purveyor may change a previously submitted routine sample to a sample in a set of repeat samples when the purveyor:

(1) Collects the sample within five adjacent service connections of the location from which the initial sample with a coliform presence was collected.
(2) Collects the sample after the initial sample with a coliform presence was submitted for analysis.
(3) Collects the sample on the same day as other samples in the set of repeat samples, except under b.vi. of this subsection; and
(4) Notifies the Department of the change.

vi. The Department may waive the requirement to collect sets of repeat samples under this subsection during a month when a non-acute coliform MCL violation is determined for the system.

c. Triggered Source Sampling: In accordance with the Groundwater Rule (GWR) requirements, triggered source samples must be collected and tested for E. coliform bacteria when coliform bacteria are present in any routine distribution sample. Triggered source sampling shall be conducted as follows:

i. Triggered source samples must be collected within 24 hours of notification of the total coliform positive result.
ii. Each source that was in operation at the time the routine sample was collected must be tested prior to treatment.
iii. If one of the triggered source samples is E. coli positive, corrective action shall be taken as directed by the DOH, or five additional source samples must be taken within 24 hours.
iv. If any of the five additional source samples is E. coli positive, one or more of the following corrective actions may need to be taken, as directed by the DOH:

(1) Provide an alternate source of water.
(2) Eliminate the source of contamination.
(3) Provide 4-log treatment.

v. Customers must be notified within 24 hours of receiving an E. coli positive triggered source sample.

d. Monitoring frequency following a coliform presence: Group A systems having one or more coliform presence samples that were not invalidated during the previous month shall collect and submit for analysis the minimum number of routine samples shown in Table 6-1.

   i. The Department may waive the monitoring frequency requirement when one or more samples with a coliform presence were collected during the previous month, if the purveyor proves to the satisfaction of the Department:

      (1) The cause of the sample with a coliform presence; and
      (2) The problem is corrected before the end of the next month the system provides water to the public.

   ii. If the Department waives this monitoring frequency requirement:

      (1) The purveyor shall collect and submit at least the minimum number of samples required when no samples with a coliform presence were collected during the previous month; and
      (2) The Department shall make available a written description explaining:

         (a) The specific cause of the coliform presence; and
         (b) Action taken by the purveyor to correct the cause of coliform presence.

e. Invalid samples.

   i. The Department shall consider coliform samples with no coliform presence detected invalid when:

      (1) Multiple tube technique cultures are turbid without appropriate gas production.
      (2) Presence-Absence technique cultures are turbid in the absence of an acid reaction.
      (3) There are confluent growth patterns or growth of TNTC (too numerous to count) colonies without a surface sheen using a membrane filter analytic technique; or
      (4) There is excess debris in the sample.

   ii. The Department may also invalidate a coliform sample when:

      (1) The analyzing laboratory establishes that improper sample analysis occurred.
      (2) The Department determines a domestic or non distribution system problem is indicated by:
         (a) All samples in the set of repeat samples collected at the same location as the original coliform presence sample also have coliform presence; and
         (b) All other samples in the set of repeat samples are free of coliform.

      (3) The Department determines a coliform presence result is due to a circumstance or condition which does not reflect water quality in the distribution system. In this case, when the Department invalidates a sample:
         (a) The purveyor shall collect a set of repeat samples following the sample invalidation in accordance with 2.b. above; and

(b) The Department's rationale for invalidating the sample shall be documented in writing and made available to the public. The documentation shall state the specific cause of the coliform presence and what action the purveyor has taken or will take.

iii. When a coliform sample is determined invalid, the purveyor shall collect and submit for analysis:

(1) An additional coliform sample from the same location as each invalid sample within 24 hours of notification of the invalid sample; or
(2) Additional coliform samples as directed by the Department.

iv. When the Department or laboratory invalidates a sample, the sample shall not count towards the purveyor's minimum coliform monitoring requirements.

3. Inorganic Chemical and Physical (IOC): When an initial analysis of any substance exceeds the MCL, the purveyor shall take the following action:
   a. For nitrate, immediately take one additional sample from the same sampling point. If the average of the two samples exceeds the MCL, a violation is confirmed: or
   b. For all other inorganic chemical and physical substances, within 30 days take three additional samples from the same sample point. If the average of all four samples exceeds the MCL, a violation is confirmed.

4. Volatile Organic Chemicals (VOCs): The purveyor shall be responsible for the following follow-up actions:
   a. After the purveyor's receipt of the first VOC analysis results from the laboratory, the purveyor shall provide notice to persons served by the system as described under WAC 246-290-71001.
   b. When a List 1 VOC is verified at a concentration above the detection limit, the purveyor shall, at a minimum:

      i. Sample the source once every three months for at least three years; and
      ii. Make analysis results available to consumers within three months of receipt from the laboratory as described under WAC 246-290-71006.

   c. When a List 1 VOC is verified at a concentration greater than an MCL, and the level will not cause the running annual average to exceed the MCL, the purveyor shall repeat sample the source as soon as possible. If a concentration greater than an MCL is confirmed, the purveyor shall:
      i. Notify the Department within seven days of receipt of the repeat sample analysis results.
      ii. Provide consumer information in accordance with WAC 246-290-71006.
      iii. Submit documentation to the Department describing the water system's strategy for gathering and analyzing additional data, and identify plans for keeping the public informed; and
      iv. Sample the source a minimum of once every three months for at least three years.

   d. When the running annual average of a List 1 VOC is greater than an MCL, or one sample analysis result causes the annual average to exceed an MCL, the purveyor shall:

      i. Notify the Department within seven days of receipt of analysis results.
      ii. Notify the public as described under WAC 246-920-71006, including mandatory health effects language.

iii. Submit an action plan to the Department for approval addressing follow-up activities, including corrective action. The purveyor shall submit the action plan within four months of receipt of Department notice that the annual average exceeds the MCL. The purveyor's action plan shall, at a minimum, contain:

(1) Tabulation of VOC sample analysis results, including the location where VOCs were detected.
(2) Description of monitoring plans for system sources.
(3) Strategy for informing the public of monitoring results and investigations; and
(4) Description of short and long-term plans to minimize exposure and/or eliminate the source of contamination.

iv. Implement the action plan within one year of the Department's approval. The Department may require the purveyor's earlier compliance, if necessary, to eliminate an immediate health threat, or may require a revision of the action plan based upon additional sample results. The Department may extend the purveyor's period of compliance when the Department determines:

(1) Substantial construction is required; and
(2) The purveyor has taken all appropriate measures to protect the health of consumers served by the public water system.

If the Department grants the purveyor an extension, the purveyor shall issue a notice identifying the MCL exceeded and the amount by which the repeat sample analysis results exceeded the MCL. The purveyor shall include the notice in all bills mailed to affected customers until the Department determines that the purveyor complies with the MCL.

v. Sample the source a minimum of once every three months for at least three years.

e. When a List 2 or List 3 VOC is verified at a concentration above the detection limit, the purveyor shall:

i. Submit the sample analysis results to the Department within seven days of receipt from the laboratory: and
ii. Sample the source a minimum of once every three months for one year, and then annually thereafter during the three-month period when the highest previous measurement occurred.

f. If the Department determines that a List 2 or List 3 VOC is verified at a level greater than a state advisory level (SAL), the Department shall notify the purveyor in writing. The purveyor shall repeat sample the source as soon as possible after initial Department notice that an SAL has been exceeded. The purveyor shall submit the analysis results to the Department within seven days of receipt from the laboratory. If any repeat sample confirms that an SAL has been exceeded, the purveyor shall:

i. Provide consumer information in accordance with WAC 246-290-71006.
ii. Sample the source a minimum of once every three months for at least three years; and
iii. Submit documentation to the Department listing VOC analysis results, describing the water system's strategy for gathering and analyzing additional data, and identifying plans for keeping the public informed. The purveyor shall submit this information to the Department within six months of the date of the first notice from the Department that an SAL has been exceeded.

g. The Department may reduce the purveyor's monitoring requirement for a source detecting a List 1 VOC if, after three years of quarterly monitoring, all analysis results are less than the MCL. The purveyor's reduced monitoring frequency shall be no less than one sample per year.
h. The Department may reduce the purveyor's monitoring requirement for a source detecting a List 2 or List 3 VOC if the source has been monitored annually for at least three years, and all analysis results are less than the SAL.
i. In establishing SAL's for List 2 and List 3 VOCs, the Department shall use the most recent edition of the Department document titled "Procedures and References for Determination of State Advisory Levels for Drinking Water Contaminants" which has been approved by the State Board of Health. Copies are available from the Department upon request.
j. When List 1, List 2 (exclusive of THMs), or List 3 VOCs are verified in well fields, the purveyor shall repeat sample individual wells within the well field.
k. When the sum of all trihalomethanes detected exceeds 0.100 mg/L, the purveyor shall sample within three months for total trihalomethanes as required under WAC 246-290-300(5).
l. The Department may collect samples from a water system or may request that specified quality assurance techniques be used to collect samples.

5. For any additional substance exceeded, follow-up action shall be determined by the Department when the MCL violation occurs.

C. Public Notification

1. Responsibility: The purveyor of a Group A water system shall notify the water system users and the Department of any of the following conditions:

a. Exceedances of maximum contaminant levels (MCLs) or maximum residual disinfectant levels (MRDLs).
b. Violation of treatment techniques.
c. Monitoring and testing procedure violations.
d. Failure to comply with the schedule of a variance or exemption.
e. Operation under a variance or exemption.
f. Occurrence of a waterborne disease outbreak or other waterborne emergency.
g. Exceedance of the secondary maximum contaminant level for fluoride; and
h. Availability of unregulated contaminant monitoring results.

These conditions are grouped into three categories, and require public notification in English and in Spanish within different time periods as described below:

a. Tier 1 Conditions require public notification within 24 hours. Such conditions include:

i. Violation of the MCL for total coliform, when fecal coliform or E. coli are present in the water distribution system, or failure to test for fecal coliform or E. coli when any repeat sample tests positive for coliform.
ii. An E. coli positive groundwater source sample.
iii. Violation of the MCL for nitrate, nitrite, or total nitrate and nitrite; or when a confirmation sample is not taken within 24 hours of the system’s receipt of the first sample showing exceedance of the nitrate or nitrite MCL.

iv. Violation of the turbidity MCL of 5 NTU, where the primary agency determines after consultation that a Tier 1 notice is required or where consultation does not occur in 24 hours after the system learns of violation.
v. Violation of the treatment technique requirement resulting from a single exceedance of the maximum allowable turbidity limit, where the primary agency determines after consultation that a Tier 1 notice is required or where consultation does not take place in 24 hours after the system learns of violation.
vi. Occurrence of a waterborne disease outbreak, as defined in 40 CFR 141.2, or other waterborne emergency; and
vii. Other violations or situations with significant potential to have serious adverse effects on human health because of short-term exposure, as determined by the primary agency, either in its regulations or on a case-by-case basis.

b. Tier 2 conditions require public notification within 30 days. Such conditions include:

i. All violations of the MCL, MRDL, and treatment technique requirements except where Tier 1 notice is required.
ii. Violations of the monitoring requirements where the primary agency determines that a Tier 2 public notice is required, considering potential health impacts and persistence of the violation: and
iii. Failure to comply with the terms and conditions of any variance or exemption in place.

c. Tier 3 conditions require public notification within one year. Such conditions include:

i. Monitoring violations, except where Tier 1 notice is required, or the primary agency determines that the violation requires a Tier 2 notice.
ii. Failure to comply with an established testing procedure, except where Tier 1 notice is required, or the primary agency determines that the violation requires a Tier 2 notice.
iii. Operation under variance granted under §1415 or exemption granted under §1416 of the Safe Drinking Water Act.
iv. Availability of unregulated contaminant monitoring results; and
v. Exceedance of the secondary maximum contaminant level for fluoride.

2. Content: Notices in English and in Spanish shall provide:

a. A clear, concise, and simple explanation of the violation.
b. Discussion of any potential adverse health effects and any segment of the population which may be at higher risk.
c. Mandatory health effects information in accordance with subsection (4) of this section.
d. A list of steps the purveyor has taken or is planning to take to remedy the situation.
e. A list of steps the consumer should take including advice on seeking an alternative water supply if necessary; and
f. The purveyor's name and phone number.

The purveyor may provide additional information to further explain the situation.

3. Distribution:

    a. Public notice of a Tier 1 condition shall occur within 24 hours after learning of the condition by placing notices on the front door of every system user. The public notice shall be written in both English and in Spanish.
    b. Public notice of a Tier 2 condition shall occur within 30 days after learning of the condition and shall be provided in both English and in Spanish.
    c. Public notice of a Tier 3 condition shall occur within 1 year after learning of the condition and shall be provided in both English and in Spanish.
    d. The purveyor of a COMMUNITY water system shall give a copy of the most recent public notice for all outstanding violations to all new billing units or new hookups before or at the time water service begins.
    e. The purveyor shall provide the Department with a copy of the public notification at the time the purveyor notifies the public.

4. Mandatory Language:

    a. The purveyor shall provide specific health effects language in English and Spanish in the notice when a violation involves:

        i. A primary VOC MCL.
        ii. A secondary fluoride MCL.
        iii. An acute coliform MCL.
        iv. A non-acute coliform MCL.
        v. Granting or continuation of exemption or variance; or
        vi. Failure to comply with a variance or exemption schedule.

    b. Required specific language is contained in the Department guideline titled "Health Effects Language for Drinking Water Public Notification."

5. VOC Notification Procedure:

    a. Availability of results: After receipt of the first analysis results, the purveyor of a COMMUNITY or NTNC water system shall notify persons served by the system of the availability of results and shall supply the name and telephone number of a contact person.

        i. The purveyor shall initiate notification within three months of the purveyor's receipt of the first VOC analysis results. This notification is only required one time.
        ii. Notification shall occur by:

            (1) Inclusion in the first set of water bills issued after receipt of the results.
            (2) Newspaper notices which shall run at least one day each month for three consecutive months.
            (3) Direct mail.
            (4) Posting if NTNC system; or
            (5) Any other method approved by the Department.

iii. Within three months of receipt of analysis results, purveyors selling water to other public water systems shall provide copies of the analysis results to the purchasing system.
iv. Within 30 days of receipt of analysis results, purveyors purchasing water shall make results available to their customers. The purveyor's notification shall occur by the method outlined under a. i. of this subsection.

b. Consumer information:

i. The purveyor shall provide consumer information within 21 days of receipt of confirmation sample results when:

(1) A List 1 VOC is confirmed at a concentration greater than an MCL, and the level will not cause the running annual average to exceed the MCL; or
(2) The Department determines whether a List 2 or List 3 VOC is confirmed at a level greater than an SAL.

ii. Consumer information shall include:

(1) Name and level of VOC detected.
(2) Location where the VOC was detected.
(3) Any health effects the VOC could cause at its present concentration.
(4) Plans for follow-up activities; and
(5) Phone number to call for further information.

iii. Consumer information shall be distributed by any of the following methods:

(1) Notice placed in the major newspaper in the affected area.
(2) Direct mail to customers.
(3) Posting if NTNC system; or
(4) Any other method approved by the Department.

6. Fluoride Notification Procedure: When a secondary MCL violation occurs, the purveyor of a COMMUNITY water system shall send notice to:

a. The Department annually.
b. Water system users annually; and
c. New billing units were added while the violation exists.

7. When circumstances dictate the purveyor give a broader or more immediate notice to protect public health, the Department may require the purveyor's notification by whatever means necessary.

8. When the State Board of Health grants a public water system a waiver, the purveyor shall notify customers and new billing units or new hookups before water service begins. The purveyor shall provide a notice annually and send a copy to the Department.

9. The Department may give notice to the water system users as required by this section on behalf of the water purveyor. However, the purveyor remains responsible for ensuring the Department's requirements are met.

6.5 EMERGENCY RESPONSE PROGRAM

Emergency response planning can be defined as the activities that prepare a utility to respond to an emergency. Emergencies can be small or large with respect to their effects on utility operation and service. The operation of the water system under emergency conditions is an important responsibility of City staff.

Many utilities experience smaller scale or routine emergency situations on a frequent basis, often weekly or even daily. Larger scale or disaster emergency situations occur far less frequently, but many aspects or effects of a disaster manifest themselves in the same way as the routine emergencies. In many respects, a disaster can be the simultaneous occurrence of many smaller scale emergencies. If a utility is well prepared to handle routine emergencies, it will be better prepared to handle disasters. A copy of the City's emergency response plan is in CHAPTER 10.

6.5.1 System Information

The following is current information pertinent to the Sunnyside Water System:

System Name:	City of Sunnyside Water System
System Identification Number:	69750Y
System Address:	818 E. Edison Ave. (mailing) 409 E. Lincoln Ave.(physical) Sunnyside, WA 98944
System Phone Number:	(509) 837-5206
City Mayor:	Dean Broersma
Public Works Director:	Raul Sanchez
Deputy Public Works Director:	Andrew Robinson
Water Supervisor:	Daniel Tiliano
System Consulting Engineer:	HLA Engineering, Inc. 2803 River Road Yakima, WA 98902 (509) 966-7000 Justin Bellamy, PE
System Service Population:	17,037
System Service Connections:	3,776
Emergency Plan Responsible Party:	Raul Sanchez

TABLE 6-7 EMERGENCY CHAIN-OF-COMMAND AND RESPONSIBILITIES		
Name / Title	Responsibilities	Contact Numbers (Area Code 509)
Dean Broersma Mayor	Proclaim local Emergency, provide leadership to the community and announcements to the media.	Phone: 509-952-4456
Raul Sanchez Public Works Director	Provide overall direction and control of emergency operations as the City's Disaster Coordinator. Emergency Response Lead.	Phone: 509-836-6300 Alt Phone: 509-836-1096
Cameron Haubrich Sunnyside Fire Department Chief	Incident command, emergency medical response support, evacuation support, manage rescue operations, damage assessments, emergency warning support, and Hazmat.	Phone: 509-837-3999
Robert Layman Police Chief	Maintain law and order and enforce emergency rules and regulations; traffic and crowd control, coordinate evacuations; provide incident security as needed once notified by ER Lead.	Phone: 509-837-2120
Jacqueline Renteria City Clerk	Perform duties as assigned by ER Lead, provide for the identification and preservation of essential department records; IT	Phone: 509-836-6310 Alt Phone: 509-790-9729
Andy Cervantes, P.E. WA Dept. of Health Drinking Water	Backup support for Yakima Health.	Phone: 509-329-2120 Alt Phone: 360-236-3100
Tony Miller Yakima County Emergency Management Director	Direction and coordination for the Yakima County Comprehensive Emergency Management Plan, development, maintenance, and related activities; coordination with all communities in Yakima County.	Phone: 509-574-2155
Raul Sanchez Public Works Director	Perform duties as assigned by ER Lead, manage, and assess transportation, infrastructure, and operations.	Phone: 509-837-837-5399 Alt Phone: 509-836-6200
Jamison Horner Finance and Administrative Services Director	Perform duties as assigned by ER Lead, track status of incident related expenses, provide a budget for supplies and equipment related to the incident.	Phone: 509-836-6392 Alt Phone: 509-490-2715
Daniel Tiliano Water Division Supervisor	Perform duties as assigned by ER Lead, asses all domestic water/irrigation infrastructure damage and repairs.	Phone: 509-836-6365 Alt Phone: 509-836-6200
Yakima County Emergency Service	Emergency Services.	Phone: 911
Hugo Morales Wastewater Division Supervisor	WWTP operations.	Phone: 509-837-5206 Alt Phone: 509-836-6566
Justin Bellamy, PE HLA Engineering & Land Surveying	Engineering assistance to Public Works Director and Water Supervisor assessing all domestic water/irrigation infrastructure damage and repairs.	Phone: 509-966-7000

6.5.2 Key Components

There are a few key components of a successful response to an emergency including:

- **Capable Staff**. The Water Division has two experienced senior staff, including the Water Division Supervisor, who knows all aspects of the system, facilities and operations. In addition, they have access to various water utility professionals, including suppliers and contractors, if needed.

- **Routine Operations and Maintenance**. Keeping all the water system facilities and equipment well maintained and in good operating condition not only helps ensure their continued function, but also their availability in an emergency situation.

- **Preparation**. Maintaining an adequate inventory of spare and repair parts; watching weather reports of possible adverse weather conditions such as high winds, freezing weather, snowstorms, etc.; communication amongst City staff to discuss the implications.

- **Notification**. The SCADA system uses an auto dialer to notify the Water Division Supervisor of abnormal operational conditions. The Water Division Supervisor can also monitor system conditions via their cell phone and respond either remotely or in person. When the newer staff gain more experience and have acquired their WDM2 and CCS certifications, they will be added to the auto dialer. If another type of emergency occurs, such as a main break, Utility Billing at City Hall during working hours and the police department for afterhours has the complete employee contact list. The City's complaint handling process also serves as a method of notifying the Division of possible abnormal conditions.

- **Coordination**. The Water Division works with other divisions within the City's Public Works Department and the City's Fire and Police Departments on routine activities and can call upon their assistance as needed. The City also has an interlocal agreement with Grandview, Prosser, and Mabton to cooperate during emergencies, including sharing resources to maintain water service to the Cities' customers. A copy of this agreement is included in CHAPTER 10.

6.6 CROSS-CONNECTION CONTROL PROGRAM

The City has an active cross connection control program, which is documented in their Cross Connection Control (CCC) Program Plan and in their Annual Summary Report to DOH. A copy of the City's CCC is included in CHAPTER 10. The City contracts with Backflow Management Inc. to assist with the implementation and continued maintenance of the program.

All residential and commercial applications for new service are evaluated by a Building Inspector/Cross Connection Control Specialist and Water Supervisor/Cross Connection Control Specialist to determine the potential hazard of the plumbing system and, if required, the appropriate level of protection is a condition of approving the application. Inspection and testing of backflow preventers is conducted:

- At the time of installation;
- Annually after installation;
- After a backflow incident; and
- After repair, reinstallation, relocation, or re-plumbing.

The City may require a backflow preventer to be inspected and/or tested more frequently than once a year, when it protects against a high-health hazard or when it repeatedly fails tests or inspections.

The City is responsible for inspection and testing of all City-owned backflow preventers, and requires the customer to be responsible for inspection and testing of backflow preventers owned by the customer. The customer shall employee a DOH – certified Backflow Assembly Tester to conduct the inspection and test within the time period specified in the testing notice sent by BMI, (Backflow Management Inc.) in lieu of the City. The test report shall be completed and signed by the currently certified Backflow Assembly Tester before the due date specified by the City. The tester will send a copy of their test report through email or by other means to the customer. The tester will also send a copy through email to BMI, (Backflow Management Inc). BMI will then record this information on Cross Track 6 or their newest program to keep track of all tests being completed monthly.

6.7 SAFETY PROCEDURES

All City personnel are instructed to exercise the utmost care when working on any water system facility. The safety of City staff and the public is the number one priority. Provided below is an outline of safety procedures to be followed when working on water system facilities:

A. Pumping Equipment

1. Removing Pump

   a. All work conducted within confined spaces shall be done in accordance with the procedures specified in the City's Confined Space Entry Safety Program.
   b. Shut off power to the pump, use lockout, tagout policy and procedures.
   c. Close valves.
   d. Ensure power is disconnected and then remove electrical cables.
   e. Lift pump with proper equipment.

2. Installing Pump

   a. All work conducted within confined spaces shall be done in accordance with the procedures specified in the City's Confined Space Entry Safety Program.
   b. Lift pump with proper equipment.
   c. Ensure all pipe connections are properly installed and tightened.
   d. Employ an electrician to properly connect power cables.
   e. Check pump rotation.
   f. Open valves.
   g. Ensure pump control valve (if present) is operating properly.
   h. Turn on power to the pump and remove lockout, tagout tag.

B. Reservoirs

1. Interior Inspection

   a. All work conducted within confined spaces shall be done in accordance with confined space entry the procedures.
   b. Inspection to be conducted by a minimum of two workers, one worker to stay outside the reservoir.
   c. Ensure the reservoir interior is properly ventilated and illuminated.
   d. Properly set and secure ladder (if required) before climbing into reservoir.

C. Distribution System

1. Pipeline Installation

a. All construction work requiring excavation, trenching, and shoring shall be conducted in accordance with the Department of Labor and Industries Safety Standards for Construction Work.
b. Close all valves connecting to pipe segment.
c. Properly set traffic control signing, barricades, and cones.
d. Install shoring or cribbing in all trenches over 48 inches in depth.
e. Construct thrust blocking, if required, and partially backfill the trench at a minimum prior to charging the pipeline.
f. Flush, disinfect pipe and conduct bacteriological testing prior to putting new line into service.

6.8 SERVICE AND SUPPLY REPRESENTATIVES

Provided below is a list of service and supply representatives for the various system components:

A. Pipe, Valves, and Fittings

1. H.D. Fowler Co.
1100 River Road
Yakima, WA 98902
Phone: 1-800-487-4511
Contact: Tim Heary (509) 952-7751

2. Ferguson Plumbing Supply
19 W Mead Ave
Yakima, WA 98902
Phone: (509) 575-7585

B. Water Service Materials

1. H.D. Fowler Co.
1100 River Road
Yakima, WA 98902
Phone: (509) 248-8400

2. Ferguson Plumbing Supply
19 W Mead Ave
Yakima, WA 98902
Phone: (509) 575-7585

C. Service Meters

1. Sensus/ Ferguson
   2042 112th St S
   Tacoma, WA 98444
   Phone: (253) 538-8284

D. Chlorination Equipment Parts & Maintenance

1. TMG Services
   3216 E. Portland Avenue
   Tacoma, WA 98404
   Phone: 1-800-562-2310

2. Correct Equipment
   14576 NE 95th St
   Redmond, WA 98052
   Phone: (425) 869-1233

E. Chlorine Gas

1. Oxarc
   509 Scoon Road
   Sunnyside, WA 98944
   Phone: 509-837-6212

F. SCADA, PLC, Win911 Auto Dialer

1. S&B Inc.
   13200 SE 20th ST
   Bellevue, WA 98005
   Phone: (425) 644-1700

G. Pressure Reducing Valves

1. GC Systems
   PO Box 848
   Sumner, WA 98390
   Phone: 1-800-525-9425

H. Meter Calibration/ Testing/ Maintenance

1. Columbia Basin Water Works Inc.
   PO Box 1803
   Ellensburg, WA 98926
   Phone: (509) 607-4333

I. Electrical

1. H2 Electric
   211 Lappin Ave
   Sunnyside, WA 98944
   Phone: (509) 837-1453

2. Tolman Electric Inc.
   380 Canyon Rd.
   Grandview WA 98930
   Phone: (509) 830-1164

J. Pump & Well Head Motor Oil

1. Connel oil DBA Co-Energy
   106 N 9th St
   Sunnyside WA
   Phone: (509) 837-5274

6.9 CUSTOMER COMPLAINT RESPONSE PROGRAM

When routine customer complaints or questions are received by the City staff regarding water quality, quantity, or pressure, they are forwarded to the Water Division via service orders or e-mail. If the customer's concern is an emergency, the Division is notified by telephone call to the person working on Customer Service that day, to the office or work cell phone. Complaints regarding billing or fees are directed to the Finance Department. The City utilizes an internal Excel-based tracking system to document the complaints and the follow-up taken by the Division. The City is considering a change in operating procedures and may upgrade to a new recordkeeping system to track customer complaints, questions, and daily service orders.

6.10 RECORD KEEPING AND REPORTING

The City of Sunnyside keeps and maintains records on its water system as shown in Table 6-8.

TABLE 6-8 SUNNYSIDE WATER SYSTEM RECORDS

Record Type	Location of Records	Retained For:
Water Consumption (by user category)	City Hall	7 Years
Water Production (by well)	Public Works Department	11 Years
Water Quality Testing Results	Public Works Department	11 Years
Equipment Maintenance	Public Works Department	4 Years
Water System Complaints	Public Works Department	5 Years
Backflow Assembly Testing	Public Works Department	4 Years
* Does not include chemical analysis results, which shall be kept as long as the system is in operation.		

Water quality monitoring results are reported to the Department of Health as required.

Sanitary surveys of the water system are conducted by DOH staff on a three to five-year basis as specified in DOH regulations. The last sanitary survey was conducted on August 5, 2020. Copies of the sanitary survey and data report are included in CHAPTER 10.

6.11 O&M IMPROVEMENTS

Improvements required for operation of the existing water system, including routine sanitary surveys by the DOH, planning document updates, and other miscellaneous operational improvements are discussed in CHAPTER 8 of this Plan. System operational costs associated with water quality testing and administrative tasks are included in the City's general operational budget and have not been identified or estimated separately.

Recommended improvements necessary for maintenance of the existing system, such as meter replacement and calibration, hydrant replacement, well rehabilitation, reservoir cleaning and inspection, and other miscellaneous maintenance related improvements, are also discussed in detail in CHAPTER 8 of this Plan. CHAPTER 8 also includes a schedule for completion of both routine and individual O&M improvements, including their estimated costs.

City of SUNNYSIDE WASHINGTON

CHAPTER 7

DISTRIBUTION FACILITIES DESIGN AND CONSTRUCTION STANDARDS

HLA Engineering and Land Surveying, Inc.

7.1 PROJECT REVIEW PROCEDURES

The City of Sunnyside requires that all water system improvements proposed by others (e.g., developers, industries, etc.) be designed and appropriate construction documents prepared by a professional engineer licensed to practice in the State of Washington. The City may require a project report prior to design and document preparation if the proposed work includes unique characteristics.

Project reports and/or construction plans and specifications for water distribution main improvements shall be submitted to the City for review. Review of said documents is undertaken by the City's Public Works Department, Fire Department, and engineering consultant under the provisions of WAC 246-290-125(2). Comments and/or required changes are then forwarded to the proponent. Resubmittal of the revised documents, review, and City approval are required before construction may proceed. Following completion of construction and acceptance by the City, a completed DOH Construction Completion Report form shall be submitted to the City. The City will provide a copy of the construction completion report completed by the developer's consultant, along with the City's approval letter, to DOH.

In addition to being reviewed and approved by the City Public Works Department, Fire Department, and engineering consultant, project design reports and/or construction plans and documents for projects other than distribution-related projects covered by the City's distribution project waiver, as defined in WAC 246-290-125, must be submitted to and approved by the Department of Health as specified in WAC 246-290-120 before construction may proceed. Required documents shall be submitted by the proponent to the following address:

Washington State Department of Health
Office of Drinking Water
Eastern Drinking Water Operations
16201 East Indiana Avenue, Suite #1500
Spokane Valley, WA 99216

7.2 POLICIES AND REQUIREMENTS FOR OUTSIDE PARTIES

Sunnyside will provide water service to properties outside the City Limits (Retail Service Area Boundary) in accordance with City Code Chapter 17.24.030, a copy of which is provided in CHAPTER 10 of this Plan. Extensions of water mains outside the City Limits will only be made after approval by the City Council. Customers outside the City Limits will be assessed water rates which are higher than those charged to customers within the City Limits per the rate schedule provided in City Code Chapter 2.02.020.

All costs associated with extending water mains to unimproved properties are the responsibility of the developer, including any required inspection fees by the City. Requirements to be met by developers when extending the City's water system are addressed in City Code Chapter 13.16, copies of which are provided in CHAPTER 10 of this Plan.

7.3 DESIGN STANDARDS AND CONSTRUCTION STANDARDS

All water system improvements must conform to Sunnyside's most current design and construction standards. A copy of Sunnyside's Design and Construction Standards are provided in CHAPTER 10 of this Plan.

7.4 CONSTRUCTION CERTIFICATION AND FOLLOW-UP PROCEDURES

Sunnyside confirms that water system extensions are constructed in accordance with City requirements through construction inspection by City Public Works staff and observation of pressure testing of new water lines by the developer. Construction inspection procedures are specified in the City's Design and Construction Standards, which are provided in CHAPTER 10 of this Plan. The City may reject construction for which it has not had ample opportunity for inspection.

City of SUNNYSIDE WASHINGTON

CHAPTER 8

CAPITAL IMPROVEMENT PLAN

HLA Engineering and Land Surveying, Inc.

8.1 IMPROVEMENT PROGRAM OBJECTIVE

The development of a water system improvement program is a primary goal of this Water System Plan. Through the analysis of existing system demands, capabilities and deficiencies, and by projecting future system growth, improvements have been identified throughout the Plan.

In previous sections of this report, deficiencies in the existing City of Sunnyside water system have been identified and specific improvements have been recommended. The costs of such improvements often prohibit their completion within a short time without seriously impacting budgets and user rates. It is prudent, therefore, to group improvements so they might be reasonably accomplished over several years. The City considers a variety of factors when identifying the need for projects, and water system planning efforts such as this one are the primary method through which the City establishes a need for capital improvements. Due to the infrequency through which a comprehensive planning effort is undertaken, the prioritization of projects is likely to change over time. The City determines which improvements to pursue based upon a series of factors:

- Whether a project is needed to meet an immediate need or a projected need based upon growth or a change in system capacity, as projects can be delayed to reduce the cost impact to customers
- Whether the project is eligible for competitive funding programs and whether timelines for funding will allow the project to be completed in that manner
- Whether the City has sufficient reserves available to complete the project while maintaining a responsible water fund balance
- Whether the project is identified in the City's annual budget

The majority of the capital improvements identified herein consist of projects identified in the 2016 *Water System Plan* that have not been completed, and additional projects have been included to address projected capacity shortfalls and replacement of infrastructure to address age and equipment deterioration. Table 8-1 summarizes the estimated costs for completing these projects with 5% annual inflation included, and Figure 8-1 illustrates the location of the various improvements. Cost estimates for the improvements are included in CHAPTER 10.

CITY OF SUNNYSIDE

Water System Plan Update

WATER SYSTEM CAPITAL IMPROVEMENTS

LEGEND

- CITY LIMITS / RETAIL SERVICE AREA
- SERVICE AREA BOUNDARY (UGA) AND WATER RIGHT PLACE OF USE
- EXISTING WATER LINE
- POSSIBLE WELL SITE
- NEW RESERVOIR

IMPROVEMENTS

Year 2024 - 2026

- S1. NEW SOUTH WELL
- S2A. WELL NO.7 REHAEILITATION
- S2B. WELL NO.6 REHAEILITATION
- S3. WELLS 12 AND 13 CHLORINATION
- D1. S. 9TH ST. - 8" WATER LINE
- D2. S. 1ST ST. TO TRAILER PARK - 8" WATER LOOP
- D3. EDISON RD. TO HYDRANT - 12" WATER LINE
- D13. REPLACE 4" WATER LINES WITH 12" WATER LINES
- D22. MISCELLANEOUS MAIN/SERVICE LINE REPLACEMENT
- R1. REPAIR AND RECOAT GRANDVIEW RESEVOIRS
- R2. NEW RESERVOIR

Year 2027 - 2029

- S4. RESERVOIR CHLORINATION SYSTEMS
- S7. REPLACE BOOSTER STATION PUMPS
- D4. EASTWAY DR. - 12" WATER LOOP
- D5.YAKIMA VALLEY RD. - 12" WATER LOOP
- D6. NORTH AVE. - 8" WATER LOOP
- D7. S. 11TH ST. - 8" TAP TO HYDRANT
- D12. MADISON TO PARKLAND NEIGHBORHOOD - 8" WATER LOOP
- D13. REPLACE 4" WATER LINES WITH 12" WATER LINES
- D16. WEST 12" LOOP
- D21. COLUMBIA AVE. - 6" WATER LOOP
- D22. MISCELLANEOUS MAIN/SERVICE LINE REPLACEMENT

Year 2030 - 2033

- D8. SCOON RD. 12" WATER LINE
- D9. 5TH ST. TO BLAIN AVE. LOOP
- D10. BLAIN AVE. 9TH ST. TO 11TH ST. WATER MAIN
- D11. 11TH ST. WATER MAIN
- D13. REPLACE 4" WATER LINES WITH 12" WATER LINES
- D22. MISCELLANEOUS MAIN/SERVICE REPLACEMENT
- D23. NEW PRV. STATION

Year 2034 - 2043

- D5. NEW NORTH WELL
- D15. SOUTH SUNNYSIDE - 12" WATER LOOP
- D17. SHELLER RD. TO AIRPORT LOOP
- D18. EAST EDISON AVE. TO YAKIMA VALLEY HIGHWAY
- D19. EAST SUNNYSIDE - RAY RD. - 12" WATER LOOP
- D20. ALEXANDER PICARD PLACE - 16" WATER LOOP
- D23. NEW PRV. STATION
- D24. BAGLEY DR. - 8" WATER LOOP
- D25. WHEELER AVE. - 8" WATER LOOP
- D26. RIDGEWAY LOOP - 8" WATER LOOP

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP-Figures.dwg

FIGURE 8-1

TABLE 8-1 SCHEDULE OF IMPROVEMENTS

Project	Description	Basis	Anticipated Year of Construction	2023 Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Total
Water Supply Projects																
S-1a	Property Acquisition for South Well	Growth	2025	$215,000		$237,000										$237,000
S-1b	South Well - Saddle Mountain	Growth	2025	$1,702,000		$1,876,500										$1,876,500
S-1c	South Well Facilities	Growth	2025	$2,620,800		$2,889,400										$2,889,400
S-2a	Well No. 7 Iron Fouling Cleanup	Maint.	2025	$800,200		$882,200										$882,200
S-2b	Well No. 6 Rehabilitation	Maint.	2025	$671,600		$740,400										$740,400
S-3	Hypochlorite system for Wells 11 and 12/13	Maint.	2024	$184,000	$193,200											$202,900
S-4	Hypochlorite storage and emergency feed, Grandview & Skyline	Maint.	2029	$323,000						$432,900						$432,900
S-5a	Property Acquisition for North Well	Growth	2035	$215,000												$0
S-5b	North Well - Saddle Mountain	Growth	2036	$1,702,000												$0
S-5c	North Well Facilities	Growth	2036	$2,620,800												$0
S-6	Evaluate Wellhouses	Maint.	2028	$25,000					$31,900							$31,900
S-7	Replace Booster Station Pumps	Maint.	2029	$50,000					$12,800	$13,400	$14,100	$14,800	$15,500			$70,600
WR-1	Water Right Purchase	Growth	2035	$100,000												$0
		WATER SUPPLY SUBTOTAL		**$11,054,400**	**$193,200**	**$6,625,500**	**$0**	**$0**	**$44,700**	**$446,300**	**$14,100**	**$14,800**	**$15,500**	**$0**	**$0**	**$7,251,600**
Water Distribution System Improvements																
D-1	S. 9th St. - 8" waterline	Maint.	2026	$149,800				$173,400								$173,400
D-2	S. 1st St. to trailer park - 8" waterline loop	Maint.	2026	$226,200				$261,900								$261,900
D-3	Edison Rd. to hydrant - 12" waterline	Maint.	2026	$305,800				$354,000								$354,000
D-4	Eastway Dr. - 12" waterline;	Maint.	2029	$109,200						$146,300						$146,300
D-5	Yakima Valley Rd - 12" waterline loop	Maint.	2028	$35,800					$45,700							$45,700
D-6	North Ave. - 8" waterline loop	Maint.	2028	$28,000					$35,700							$35,700
D-7	S. 11th St - 8" tap to hydrant	Maint.	2029	$64,000						$85,800						$85,800
D-8	Scoon Rd. and private Road - 12" waterline	Maint.	2031	$557,000								$822,900				$822,900
D-9	S 5th St. to Blain Ave Loop	Maint.	2032	$747,200									$1,159,200			$1,159,200
D-10	Blain Ave 9th to 11th waterline	Maint.	2026	$539,800			$624,900									$624,900
D-11	11th St from Blain Ave to Lincoln Ave	Maint.	2033	$1,519,400										$2,474,900		$2,474,900
D-12	Madison to Parkland neighborhood - 8" waterline	Maint.	2028	$163,800					$209,100							$209,100
D-13	Replace all 4" waterlines with 12" waterlines	Maint.	2026-2034	$4,812,600			$696,400	$731,200	$767,800	$806,200	$846,500	$888,800	$933,200		$979,900	$6,650,000
D-14	Sunnyside - Mabton Rd. to Quail Ln.	Maint.	2030	$1,733,200							$2,438,800					$2,438,800
D-15	South Sunnyside (East of Port WWTP)	Growth	2033+	$1,376,000												$0
D-16	West 12" waterline loop	Maint.	2028	$522,600					$667,000							$667,000
D-17	Sheller Rd. to Airport - Morgan 12" waterline loop	Growth	2035+	$2,296,400												$0
D-18	E. Edison Ave. to YVH - 12" waterline loop	Growth	2035+	$1,984,400												$0
D-19	East Sunnyside - Ray Rd. - 12" waterline loop	Growth	2035+	$4,978,000												$0
D-20	Alexander - Picard Place - 16" waterline loop	Growth	2035+	$3,634,800												$0
D-21	Columbia Ave. - 8" waterline loop	Maint.	2029	$204,400						$273,900						$273,900
D-22	Miscellaneous main / service line replacement	Maint.	Annual	$100,000			$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$100,000	$900,000

TABLE 8-2 SCHEDULE OF IMPROVEMENTS (CONTINUED)

Project	Description	Basis	Anticipated Year of Construction	2023 Cost	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2024	Total
Water Supply Projects																
D-23	New PRV Station	Maint.	2030	$84,200												$0
D-24	Bagley Drive Looping	Maint.	2035+	$260,600												$0
D-25	Wheeler Ave. Looping	Maint.	2035+	$115,400												$0
D-26	Ridgeway Loop Looping	Maint.	2035+	$160,600												$0
D-27	Swan Drive Looping	Maint.	2035+	$168,400												$0
WATER DISTRIBUTION SUBTOTAL				**$26,172,600**	**$0**	**$0**	**$2,210,600**	**$1,466,400**	**$1,158,300**	**$1,412,200**	**$4,287,600**	**$2,092,800**	**$1,033,200**	**$3,554,800**	**$1,079,900**	**$18,295,800**
Water Storage Improvements																
R-1	Repair and Recoat Grandview Reservoirs	Maint.	2028	$50,000					$63,800							$63,800
R-2a	Property Acquisition	Growth	2026	$195,000			$225,700									$225,700
R-2b	Zone 1 reservoir and Transmission main (2.6 MG)	Growth	2027	$9,614,000				$11,685,900								$11,685,900
WATER STORAGE SUBTOTAL				**$9,859,000**	**$193,200**	**$6,625,500**	**$225,700**	**$11,685,900**	**$63,800**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$11,975,400**
Planning Improvements																
P-1	Wellhead Protection Program Update	Maint.	2030	$10,000							$14,100					$14,100
P-2	Update Emergency Response Plan	Maint.	2029	$10,000						$13,400						$13,400
P-3	Water Use Efficiency Program Update	Maint.	2033	$6,500										$10,600		$10,600
P-4	Update Lead and Copper Monitoring Plan	Maint.	Annual	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000		$50,000
P-5	Update Water System Plan and Misc. On-going Planning	Maint.	Various	$190,000		$10,000		$10,000		$10,000		$10,000		$150,000		$190,000
P-6	Water Rate Study	Maint.	2026	$10,000			$10,000									
PLANNING IMPROVEMENTS SUBTOTAL				**$221,500**	**$5,000**	**$15,000**	**$15,000**	**$15,000**	**$5,000**	**$28,400**	**$19,100**	**$15,000**	**$5,000**	**$165,600**	**$0**	**$278,100**
PROJECT TOTALS				**$47,307,500**	**$198,200**	**$6,640,500**	**$1,662,000**	**$13,321,400**	**$1,938,800**	**$1,886,900**	**$3,537,000**	**$1,841,500**	**$2,212,900**	**$2,740,500**	**$1,079,900**	**$36,957,100**

City of SUNNYSIDE WASHINGTON

CHAPTER 9

FINANCIAL PROGRAM

HLA Engineering and Land Surveying, Inc.

9.1 PAST AND PRESENT FINANCIAL STATUS

Development of a comprehensive financial program requires an understanding of the water system's current financial status and past budgetary trends. Presented below in Table 9-1 is a summary of the City's Water Fund revenue and expenditure history for the last five-year period.

TABLE 9-1 WATER OPERATING FUND (FUND 403) HISTORY

Year	2018	2019	2020	2021	2022
BEGINNING FUND BALANCE	**$ 2,537,793**	**$ 1,683,224**	**$ 691,596**	**$ 1,223,477**	**$ 1,449,341**
REVENUES					
Coronavirus Relief Fund	$ 0	$ 0	$ 23,693	$ 0	$ 0
American Rescue Plan Acts Fund	$ 0	$ 0	$ 0	$ 4,314	$ 0
Water Sales & Service	$ 2,491,427	$ 2,453,431	$ 2,424,607	$ 2,509,882	$ 2,603,617
B&O Taxes on Utilities	$ 0	$ 0	$ 705,597	$ 719,990	$ 757,767
Water Meter Hookup Fee	$ 64,466	$ 86,260	$ 40,040	$ 29,855	$ 102,384
Water Equity Fee	$ 26,275	$ 49,971	$ 14,000	$ 5,000	$ 13,059
Sale of Labor & Supplies	$ 3,356	$ 2,928	$ 5,305	$ 2,836	$ 2,600
Investment Interest	$ 26,054	$ 29,943	$ 4,414	$ 729	$ 12,588
US Cellular – Cell Tower Lease	$ 15,157	$ 14,427	$ 14,860	$ 14,012	$ 17,059
Hydrant Meter Deposit	$ 8,800	$ 11,200	$ 0	$ 0	$ 0
Insurance Recoveries	$ 90	$ 0	$ 0	$ 0	$ 0
SIED Loan Disbursement Correction	$ 0	$ 0	$ 187,500	$ 0	$ 0
Miscellaneous Revenue	$ 1,290	$ 369	$ 0	$ 199	$ 2,614
TOTAL – REVENUES	**$ 2,636,915**	**$ 2,648,529**	**$ 3,420,016**	**3,286,816**	**3,511,688**
EXPENDITURES					
Personnel	$ 680,984	$ 697,909	804,604	833,121	747,153
Office & Operating Supplies	$ 155,687	$ 254,940	126,794	165,712	263,553
Professional Services	$ 144,286	$ 114,561	80,368	138,976	165,779
Communication and Travel	$ 16,283	$ 18,447	14,351	15,806	15,533
Taxes & Operating Assessments	$ 213,147	$ 223,776	943,666	965,948	976,100
Rentals & Leases	$ 38,192	$ 29,341	37,282	34,797	55,974
Insurance	$ 86,051	$ 75,375	65,786	74,236	81,141
Utility Services	$ 247,845	$ 228,431	220,857	245,717	230,945
Repairs & Maintenance	$ 114,542	$ 69,077	35,758	44,496	35,128
Miscellaneous	$ 22,827	22,544	12,169	12,699	110,800
TOTAL – EXPENDITURES	**$ 1,719,844**	**$ 1,734,401**	**2,341,636**	**$ 2,531,509**	**$ 2,682,106**
Debt Service	$271,384	$270,815	$269,510	$268,205	$261,649
Transfers Out	$143,545	$1,454,850	$113,370	$113,278	$80,000
ENDING FUND BALANCE	**$ 1,683,224**	**$ 691,596**	**$1,223,474**	**$1,289,840**	**$1,209,669**
Net Increase (Decrease) in Fund Balance	($854,660)	($991,627)	$531,878	$66,366	($80,171)

It can be seen from Table 9-1 that the City's ending fund balance has declined since 2018, although that is due in part to transfers out of the utility. However, budget projections and fund activity to-date in 2023 have indicated that the utility has generated more revenues than expenditures, and the water fund is currently operating effectively. Necessary rate increases to complete the recommended capital improvements will be discussed in subsequent sections of this Plan.

9.2 AVAILABLE REVENUE SOURCE

Recommended system improvements are scheduled for completion in annual increments for the next ten years. In addition, as areas outside the current service area develop, extension of the City's water system will be necessary. Future transmission mains, sources of supply, and reservoirs will undoubtedly require major local bond funding and/or outside funding participation to offset the high costs of the improvements.

There are five basic categories of potential financing for domestic water-related improvements:

1. Local Public Enterprise Funds
2. Use of Local Public Powers
3. State Assisted or Guaranteed Resources
4. Federally Assisted or Guaranteed Resources
5. Private Development

Current availability of funding is limited with several of the sources within these categories. Many also restrict the use of funds to certain projects and others limit their participation to a percentage of the total cost. Each of these categories is described briefly below.

1. **Local Public Enterprise Funds**

   Reserves in the Enterprise Fund are accumulated from available revenues from water user fees. The amount of the reserves will depend on the balance of operation and maintenance costs of the system versus total revenue generated by the fees. These reserves may be used to finance any water system-related project allocated by the City Council.

   Funds for future projects may be generated by increases in user fees, thus building the reserves in the Enterprise Fund. This method of financing is desirable, in that the City is collecting interest on the reserves as opposed to paying interest on a loan balance. ("Pay as you go.")

2. **Use of Local Public Powers**

   In this section, three primary bonding techniques are presented: general obligation bonds, revenue bonds, and special assessment bonds. There are advantages and disadvantages to each. The type of bond issued to finance a community improvement depends in part on custom and in part on the circumstances of a particular offering. General information about the three principal types of municipal bonds follows.

   General Obligation Bonds: These bonds pledge unlimited taxing power and the full faith and credit of the issuing government to meet the required principal and interest payments.

Special Assessment Bonds (LID Bonds): LID bonds are used to finance improvements where the property specially benefited can be identified. Special assessment bonds are frequently used to make capital improvements in a particular neighborhood. Principal and interest payments for these bonds are made by special assessment on the property benefiting from the improvement. Before special assessment bonds are issued, estimated costs are mailed to property owners, a public hearing is held to allow the affected property owners to say whether they want the improvement, and a 30-day protest period elapses during which property owners may protest the improvements prior to City Council action formally establishing the project. Debt financed by special assessment bonds is not subject to debt limitations.

Revenue Bonds: Revenue bonds are frequently used to finance City-owned utilities, industrial parks, and other municipal public facilities. The bonds pledge the revenue from a particular revenue source to meet the principal and interest payments. Revenue bonds are appropriate debt instruments when the enterprise fund can be expected to generate sufficient revenue to meet both operating and debt service cost. Revenue bonds generally do not become a general obligation of the government issuing them.

Communities may have to pay higher rates of interest on these bonds than on general obligation bonds, because revenue bonds are considered less secure. But revenue bonds also have an important advantage over general obligation bonds in that the amount of the revenue bonds are not included in the amount of indebtedness subject to state debt limitations. The legal requirements for issuing revenue bonds are more complex than those for issuing general obligation bonds. When revenue bonds are issued, a special authority (Water Fund) operates the facility, and a special revenue fund receives and disburses all funds. A trust agreement to provide for the monthly reimbursement of revenues and containing provisions to protect the bond holders must be formulated.

3. **State Assisted or Guaranteed Resources**

Public Works Trust Fund (PWTF): This fund was created in 1985 to provide loans for replacement of public works facilities. Applications for construction funds may be submitted once each year (in May), and applications for pre-construction funds (for such items as engineering design, bid document preparation, right of way acquisition and environmental studies) may be submitted once each month. Projects are evaluated based on:

a. Merits of the project as to need.
b. Degree of capital improvement planning.
c. Adequacy of existing rate structure.
d. Degree of local participation in financing project; and
e. Whether the area is economically distressed.

Current allocations of funds have been allowed for a wide variety of projects, including domestic water system replacement projects.

Drinking Water State Revolving Fund (DWSRF): This fund provides low-interest loans to publicly and privately owned water systems for projects which improve water systems and ensure public health. Up to 100% of eligible project costs are fundable through this program with a typical 20-year repayment schedule. Applications are generally accepted once a year and managed through the Washington State Department of Health. Projects that are primarily for fire protection or to serve future population growth are not eligible for funding through the DWSRF program. Up to 50 percent principal forgiveness is available for communities with high affordability index numbers and water system restructuring/ consolidation projects.

Funds are also available through the DWSRF program for preconstruction and consolidation grants and loans to prepare water systems for infrastructure construction projects. The preconstruction loan program targets small to medium sized systems that do not have up-front capital to pay for needed preconstruction activities to improve their project readiness. Preconstruction grants help small public water systems (serving population of less than 10,000) evaluate the feasibility of applying for a construction loan and to meet readiness to proceed criteria. Consolidation grants help small systems (typically fewer than 500 connections) that have water quality, monitoring, treatment technique violations, or similar deficiencies consolidate with another system, restructure (transfer) ownership to another larger utility, or secure a regional water supply.

4. **Federally Assisted or Guaranteed Resources**

Three federally financed funding sources are available for domestic water system construction: 1) the USDA's Rural Development, Rural Utilities Service (RUS) Program; 2) the Economic Development Administration's (EDA) Public Works Grants and Loans Program; and 3) the Department of Housing and Urban Development's (HUD) Community Development Block Grants administered by the State Department of Community Development.

Rural Utilities Service Water & Waste Disposal Direct Loans and Grants Program: This program is one of several programs established by the USDA to provide public works assistance to small communities in rural areas. Public entities such as municipalities, counties, special purpose districts or authorities, Indian tribes, and nonprofit corporations or cooperatives are eligible in areas with a population under 10,000. Priority will be given to public entities in areas smaller than 5,500 people to restore a deteriorating water supply, or to improve, enlarge, or modify a water facility. Preference will also be given to requests which involve the merging of small facilities and those serving low-income communities. Loans and grant funds may be used to construct, repair, improve, expand, or otherwise modify rural water supply and distribution, including reservoirs, pipelines, wells, and pumping stations. Targeted at the neediest communities, grants are designed to keep costs economical. Grants are limited to reducing the facility's per user costs for debt service to a minimum of 1% of the area's family income. Loans in the past have also been available at a 5% interest rate for the useful life of the facility, or the statutory limit on the applicant's borrowing authority, or for a maximum of 40 years.

Public Works Grants and Loans Program: This program is funded by the Economic Development Administration (EDA) and is used to encourage long-range development gains in jurisdictions where economic growth is lagging, or where the economic base is shifting. The program provides public works and development facilities needed to attract new industry and provide business expansion.

Financial aid may be used to acquire and develop land and improvements for public works, and to acquire, construct, rehabilitate, alter, expand or improve such facilities, including related machinery and equipment. When completed, such projects are expected to bring additional private investment to the area.

U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant Program: This program is administered by the State Department of Community Development. Communities with a population under 50,000 can apply for grants to undertake activities in providing adequate housing, expanded economic opportunities, and correcting deficiencies in public facilities which affect public safety and health of an area or community of residents. The program is designed to aid low- and moderate-income people and is also directed to have a maximum impact on stated community problems. Its primary focus is to assist blighted communities, or communities suffering a particular community or economic development problem.

5. **Private Development**

Expansion of domestic water facilities to newly developing areas outside the existing service area is a common requirement of the private developer. Installation of public utilities within housing subdivisions is normally financed entirely by the developer. The City may participate by paying the cost of oversizing the water main for possible extension later.

Although funding has been curtailed in several programs within the last few years, projects are still receiving financing statewide. Competition for available funds, however, has increased significantly. Projects which show the greatest need and have the largest local funding participation or benefit low-income families receive the majority of financing from these programs. Careful planning and packaging of the project is necessary so that the most effective dollar use, including local participation, may obtain the maximum benefit for the greatest number of people.

Table 9-2 provides a summary of funding sources and projects which are eligible under each program.

TABLE 9-2 FUNDING SOURCE SUMMARY

FUNDING SOURCE	ELIGIBLE PROJECTS
Domestic Water Enterprise Fund	All water system projects
General Obligation Bond	All water system projects
Revenue Bond	All water system projects
Special Assessment Bond	Local Improvement District projects
Public Works Trust Fund	Replacement of existing water system facilities
Drinking Water State Revolving Fund (DWSRF)	All water system projects, except for the sole purpose of fire flow or growth.
USDA RUS Rural Water Grant	Not eligible; service population exceeds 10,000
USDA RUS Rural Water Loan	Not eligible; service population exceeds 10,000
EDA Public Works Grant	Water system projects to attract new industries and provide for business expansion
EDA Public Works Loan	Water system projects to attract new industries and provide for business expansion
HUD Community Development Block Grant	Water system projects which directly benefit low and moderate-income families
Private Development	All water system projects necessary for new housing and/or commercial developments

9.3 RECOMMENDED FINANCING STRATEGY

Provided in Table 9-3 and Table 9-4 are a financial program for Sunnyside's water operating and reserve funds, which incorporates projected water service fees, operating costs, improvements, and loan costs for the next ten-year period. The values for the year 2024 are projected based upon 2022 budgets.

The City completed a water rate analysis in 2022 that identified minimal capital improvements in 2023 through 2027. The recommendation from that rate analysis was to increase rates by 5% in both 2023 and 2024. However, the capital improvements identified herein require a more aggressive rate increase schedule. Table 9-3 identifies rate increases of 10% in 2024 through 2028 and 5% annual increases thereafter. If conditions change that reduce the projected future revenue or increase future water department expenses, the financial program shown in Table 9-3 will have to be revised to account for the reduced revenue, or modifications to successive year rate increases will have to be made.

Future water department expenses were estimated based upon an average inflation rate of 5% per year, 2% annual population growth, and wage growth of 3%, as shown in Table 9-3. Funding for major capital improvements scheduled to be completed in and after 2023 has not been obtained and will be required to complete those recommended system improvements. Further evaluation and research of available funding sources may be necessary in the future to ensure a funding package will be established to meet the requirements of the proposed financial plan. If funding is not secured for the improvements, it is likely they will be delayed until funding is available.

The City of Sunnyside will continue annual reviews of the water system's financial program during their budget preparation process. The financial program will also be reviewed and revised as needed during the next Water System Plan update in 2034. This continued review will allow for modifications to the proposed rate and revenue increases, should financial conditions change. Funding for most capital improvements is based upon using City funds unless otherwise noted. Table 9-3 reflects a DWSRF loan for the new well and reservoir projects in 2025 and 2027, and for a large water main project in 2030.

TABLE 9-3 WATER FUND PROJECTIONS											
Year	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**
BEGINNING FUND BALANCE	1,937,900	2,736,500	3,759,600	3,231,600	2,715,200	2,016,500	1,555,400	2,033,800	1,845,900	1,491,400	819,900
REVENUES											
Water Sales & Service	2,733,500	2,787,000	2,841,600	2,897,300	2,954,100	3,012,000	3,071,100	3,131,400	3,192,900	3,255,600	3,319,600
Increased Rates	273,400	557,400	852,500	1,158,900	1,477,100	1,656,600	1,842,700	2,035,400	2,235,000	2,441,700	2,655,700
B&O Taxes on Utilities	776,200	791,700	807,500	823,700	840,200	857,000	874,100	891,600	909,400	927,600	946,200
Water Meter Hookup Fee	67,600	69,000	70,400	71,800	73,200	74,700	76,200	77,700	79,300	80,900	82,500
Water Equity Fee	27,000	27,500	28,100	28,700	29,300	29,900	30,500	31,100	31,700	32,300	32,900
Sale of Labor & Supplies	3,100	3,200	3,300	3,400	3,500	3,600	3,700	3,800	3,900	4,000	4,100
Investment Interest	800	800	800	800	800	800	800	800	800	800	800
US Cellular – Cell Tower Lease	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600	14,600
Watts Smart Business Incentive	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Miscellaneous Revenue	100	100	100	100	100	100	100	100	100	100	100
TOTAL – REVENUES	**3,897,300**	**4,252,300**	**4,619,900**	**5,000,300**	**5,393,900**	**5,650,300**	**5,914,800**	**6,187,500**	**6,468,700**	**6,758,600**	**7,057,500**
EXPENDITURES											
Personnel	1,034,900	1,066,000	1,098,100	1,131,000	1,164,900	1,199,900	1,235,900	1,273,000	1,311,200	1,350,500	1,391,000
Office & Operating Supplies	259,600	267,300	275,200	283,500	292,000	300,700	309,700	319,000	328,600	338,500	348,600
Professional Services	106,000	109,200	112,500	115,900	119,400	123,000	126,700	130,500	134,400	138,400	142,600
Communication and Travel	18,500	19,000	19,500	20,000	20,600	21,200	21,800	22,400	23,000	23,600	24,300
Taxes & Operating Assessments	675,200	695,500	716,400	737,900	760,000	782,800	806,300	830,500	855,400	881,100	907,500
Rentals & Leases	74,100	76,300	78,600	81,000	83,400	85,900	88,400	91,100	93,800	96,600	99,500
Insurance	96,300	99,200	102,200	105,300	108,500	111,800	115,200	118,700	122,300	126,000	129,800
Utility Services	226,600	233,400	240,400	247,600	255,000	262,700	270,600	278,700	287,100	295,700	304,600
Repairs & Maintenance	54,100	55,700	57,400	59,100	60,900	62,700	64,600	66,500	68,500	70,600	72,700
Miscellaneous	14,300	14,700	15,100	15,600	16,100	16,600	17,100	17,600	18,100	18,600	19,200
TOTAL – EXPENDITURES	**2,559,600**	**2,636,300**	**2,715,400**	**2,796,900**	**2,880,800**	**2,967,300**	**3,056,300**	**3,148,000**	**3,242,400**	**3,339,600**	**3,439,800**
DEBT SERVICE											
Existing DWRF Debt Service	260,900	260,900									
New DWSRF Debt Service				690,500	1,004,300	1,193,000	1,177,200	1,201,900	1,305,900	1,287,900	1,270,000
TOTAL – DEBT SERVICE	**260,900**	**260,900**	**0**	**690,500**	**1,004,300**	**1,193,000**	**1,177,200**	**1,201,900**	**1,305,900**	**1,287,900**	**1,270,000**
CAPITAL IMPROVEMENTS											
Capital Improvement Projects	198,200	6,640,500	1,662,000	13,321,400	1,938,800	1,886,900	3,537,000	1,841,500	2,212,900	2,740,500	1,079,900
Capital Improvement Financing	0	6,388,500	0	11,685,900			2,438,800				
Transfers Out	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
ENDING FUND BALANCE	**2,736,500**	**3,759,600**	**3,231,600**	**2,715,200**	**2,016,500**	**1,555,400**	**2,033,800**	**1,845,900**	**1,491,400**	**819,900**	**2,025,700**
Net Increase (Decrease) in Fund Balance	798,600	1,023,100	(528,000)	(516,400)	(698,700)	(461,100)	478,400	(187,900)	(354,500)	(671,500)	1,205,800

9.4 WATER RATES

Sunnyside's current water rates use a declining block rate structure, where a minimum charge is applied per month that includes 2,300 gallons of monthly use, and a volumetric charge is added based upon water use beyond 2,300 gallons. The volumetric charge per gallon decreases as additional water is used. A summary of the current water rates for services within the City Limits is provided below in Table 9-4.

TABLE 9-4 SUMMARY OF CURRENT WATER RATES

Meter Size (Inches)	Monthly Base Charge
5/8 and 3/4	$19.55
1	$32.58
1-1/2	$65.18
2	$104.29
3	$228.11
4	$391.04
6	$814.67
Usage Block	**Monthly Volumetric Charge**
2,300 to 9,000 gallons	$0.26 per 100 gallon
9,100 to 37,400 gallons	$0.20 per 100 gallon
37,500 gallons to 1,122,200 gallons	$0.14 per 100 gallon
Over 1,122,200 gallons	$0.09 per 100 gallon

Based on the above rates, the typical monthly charge for a Single-Family residential customer that uses 8,700 gallons of water in a month (290 gpd/ERU) would be equal to $36.19. This monthly service charge is lower, compared with neighboring cities of a similar size and amount of water use, as the City's continued ability to attract growth and development is dependent upon having competitive utility rates. However, the City has a significant number of capital projects that it needs to complete in order to meet projected water demands, and therefore rate increases will be necessary. The WSDM identifies that the EPA considers 2.5 percent of a community's median household income (MHI) as the upper threshold for affordable water service. Based upon an MHI of $49,134, water rates below $102 per month would be considered affordable. Despite this apparent affordability, many of the City's customers are low-income, and water rate increases will be evaluated on an annual basis to balance water system needs with the financial encumbrance that rate increases represent.

The City's current rates and/or total revenue will need to continue to increase in future years to maintain a positive operating fund balance, pay for rising O&M costs, fund necessary improvement projects, and make the necessary debt service payments for prior and future improvement projects. As identified above, annual increases of 5-10% are recommended for the following 10 years to adequately finance the capital improvement schedule while maintaining adequate water fund reserves. For comparison purposes and based upon a current average Single-Family residential monthly rate of $36.19, the recommended rate increases would result in an average Single-Family residential monthly rate of $78.11 in 2034.

Sunnyside's current water rate structure is not set up to promote water use efficiency. The City's current rate structure is established in a manner that water more than the base amount is supplied at a reduced cost and continues to decrease as use increases. An example of a base rate structure encouraging water use efficiency would be to have the volumetric usage increase as water use increases, rather than decrease the volumetric charge in higher usage categories. This kind of rate structure would penalize services that use excessive amounts of water and encourage more efficient use of water. City services that use potable water for irrigation are more likely to have seasonal water demand, and therefore changes to the rate structure type would be more likely to impact those services. A conservation-based rate structure would have a higher impact on customers who have to use potable water for irrigation rather than a non-potable source, and on the large commercial and industrial customers in the City. As shown in Table 8-1, the City will plan to complete a rate evaluation in 2026 that includes evaluating alternate rate mechanisms, after the substantial water source projects have been designed and constructed using partial loan funding and the debt service is better identified.

9.5 CUSTOMER ASSISTANCE

The City addresses utility rates for low-income seniors and low-income disabled persons in Municipal Code 13.20.110. If criteria are met, the individual is entitled to a $7 reduction on their monthly water bill. An application for reduced utility rates is required to be submitted annually to maintain the rate reduction. The City also provides assistance through operations on a case-by-case basis. For situations where a bill is past due, Finance department staff will work with the customer to develop a payment plan for repayment, provided that subsequent bills are paid in full and the account is not falling further behind. Staff will also refer customers to OIC of Washington for third party assistance.

City of SUNNYSIDE WASHINGTON

CHAPTER 10

MISCELLANEOUS DOCUMENTS

HLA Engineering and Land Surveying, Inc.

10.1 MISCELLANEOUS DOCUMENTS INDEX

1. State Environmental Policy Act (SEPA) Checklist
2. Water Facility Inventory (WFI) Form
3. WSP Comments and Responses
4. Consumer Meeting Documentation
5. Local Government Consistency Review Checklist(s)
6. City of Sunnyside Fire Department Nesting Letter
7. City of Sunnyside Municipal Code Sections
8. Water Rights Certificates
9. Sanitary Survey
10. Well Logs
11. Wellhead Protection Plan Excerpts
12. Cross-Connection Control Report
13. Consumer Confidence Report
14. Coliform Monitoring Plan
15. Water Quality Monitoring Schedule (WQMS) Report
16. Water Sampling Results
17. Sanitary Survey Data Report
18. Hydraulic Modeling Results
19. City of Sunnyside Hydrant Flow Testing
20. City of Sunnyside Design and Construction Standards
21. Disinfection Byproducts Monitoring Plan
22. Capital Improvement Costs
23. Grandview Reservoir Diver Reports
24. Wellhead Contaminant Notifications
25. Lead and Copper Monitoring Plan
26. Emergency Response Plan
27. Mutual Assistance Agreement
28. Water System Plan Adoption Documentation
29. Protective Covenant Documentation

Map A - Existing Water System
Map B - Hydraulic Analysis Nodes and Pipes

City of SUNNYSIDE WASHINGTON

1

State Environmental Policy Act (SEPA) Checklist

HLA Engineering and Land Surveying, Inc.

CITY OF SUNNYSIDE
Yakima County, Washington

CITY OF SUNNYSIDE

WATER SYSTEM PLAN UPDATE

STATE ENVIRONMENTAL POLICY ACT

ENVIRONMENTAL CHECKLIST

Prepared by

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

HLA Project No. 22166E
October 2023

STATE ENVIRONMENTAL POLICY ACT

ENVIRONMENTAL CHECKLIST

A. BACKGROUND

1. *Name of Proposal, if Applicable:* Water System Plan Update

2. *Name of Proponent:* City of Sunnyside
   Phone Number: (509) 836-6305

   Address of Proponent: City of Sunnyside
   818 E. Edison Ave.
   Sunnyside, WA 98944

3. *Person Completing Form:* Robert J. Scott, P.E.
   Phone Number: (509) 966-7000
   Address: HLA Engineering and Land Surveying, Inc.
   2803 River Road
   Yakima, WA 98902

4. *Date Checklist Prepared:* October 2023

5. *Agency Requesting Checklist:* City of Sunnyside

6. *Proposed timing or schedule (including phasing, if applicable):*
   Water System Plan Update submitted to DOH for review in November 2023

7. *Do you have any plans for future additions, expansions, or further activity related to or connected with this proposal? If yes, explain.*
   Yes. This water system plan (PLAN) identifies the on-going maintenance activities as well as replacement and growth-related improvements of the City's municipal water system.

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.*
   None at this time.

10. *List any governmental approvals or permits that will be needed for your proposal, if known.*
    a) Department of Health – Approval of all water system related projects.
    b) Department of Ecology – Issuance and administration of water rights.
    c) City of Sunnyside - approval of PLAN submission to DOH.

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.*

Adoption of the Water System Plan for the City of Sunnyside Urban Growth Area. The plan identifies recommended maintenance- and growth-related improvements to the City's water system. Construction, with potential construction-related impacts, will be necessary to implement the WSP recommendations. Further environmental review is required for all non-exempt construction activities, and project specific checklist responses will be provided at that time

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 application related to this checklist.*

    The proposed water system improvements are located throughout the incorporated and unincorporated areas within the City of Sunnyside Urban Growth Area boundary, and are identified within the Water System Plan.

B. ENVIRONMENTAL ELEMENTS

1. EARTH

a. *General description of the site (underline one): Flat, rolling, hilly, steep slopes, mountainous, other*.

b. *What is the steepest slope on the site (approximate percent slope)?*

    0% to 5% slope through the majority of the UGA and 5% to 15% within the Harrison Hill area.

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 City is developed upon a variety of soils, primarily consisting of the following soil groups all in proportions above 10%:

    - Cleman very fine sandy loam
    - Esquatzel silt loam
    - Outlook sandy silts and loams
    - Warden sands, silts and loams

    The projects identified within this Plan do not propose the removal of agricultural or long-term commercially significant soils.

d. *Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.*

    No.

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.*

    None proposed.

f. *Could erosion occur as a result of clearing, construction, or use? If so, generally describe.*

    Erosion is not expected to occur because of clearing or construction.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or building)?

No additional impervious surfaces as a result of planning activities.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

None.

2. AIR

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

None.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

None.

3. WATER

a. Surface Water:

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.

Yes; The City is served by SVID irrigation canals in various locations.

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.

No work adjacent to the surface waters will occur as a result of completing this planning effort.

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.

None.

4. Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No.

5. Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No.

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.

No.

b. Ground Water:

1. Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

Approximately 3,444 acre-feet per year of ground water is presently being withdrawn for water supply of the Sunnyside water system. The City has rights for 5,044 acre-feet per year.

2. Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: domestic sewage, industrial, containing the following chemicals...; agricultural, etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

None.

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 the water flow? Will this water flow into other waters? If so, describe.

Not applicable.

2. Could waste materials enter ground or surface waters? If so, generally describe.

No.

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:

Not applicable.

4. PLANTS

a. Check or underline type of vegetation found on the site:

__X__ deciduous tree: alder, maple, aspen, other
__X__ evergreen tree: fir, cedar, pine, other
__X__ shrubs
__X__ grass
__X__ pasture
____ crop or grain
__X__ Orchards, vineyards or other permanent crops
____ wet soil plants; cattail, buttercup, bullrush, skunk cabbage, other
____ water plants: water lily, eelgrass, milfoil, other
__X__ other types of vegetation - weeds

b. What kind and amount of vegetation will be removed or altered?

None.

c. List threatened or endangered species known to be on or near the site.

None are known to exist

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

None planned.

e. List all noxious weeds and invasive species known to be on or near the site.

The Scotch Thistle and Yellow Star Thistle have been known to be within the City.

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. Examples include:

Bird: hawk, heron, eagle, songbird, other
Mammals: deer, bear, elk, beaver, other
Fish: bass, salmon, trout, herring, shellfish, other

b. List any threatened or endangered species known to be on or near the site.

There are no listed endangered or threatened animals that reside within the UGA Limits. Several species listed on the threatened or endangered species list (Canada Lynx, Gray Wolf, Yellow-Billed Cuckoo, Bull Trout) are associated with the forest areas outside the City limits or the Yakima River to the south of the City and will not be affected by this planning effort.

c. Is this site part of a migration route? If so, explain.

The City of Sunnyside is located within the Pacific Flyway migratory route for some bird species.

d. Proposed measures to preserve or enhance wildlife, if any:

Not applicable.

e. List any invasive animal species known to be on or near the site.

The Japanese Beetle has been known to be located within Sunnyside.

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.

Electricity will be used in some recommended projects and solar may be considered.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

There is potential for recommended reservoir storage projects to have an impact on surrounding undeveloped properties in the future.

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:

VFDs will be used in future projects, and solar panels may be considered.

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 additional hazards will occur because of the proposal.

1. Describe any known or possible contamination at the site from present or past uses.

None known.

2. Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmissions pipelines located within the project area and in the vicinity.

None.

3. Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

None.

4. Describe special emergency services that might be required.

No special emergency services will be required.

5. Proposed measures to reduce or control environmental health hazards, if any:

None.

b. Noise

1. What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2. What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short term construction noise would be anticipated between 7:00 a.m. and 7:00 p.m. during construction activities for future projects.

3. Proposed measures to reduce or control noise impacts, if any:

Construction would be typically restricted to the hours of 7:00 a.m. to 7:00 p.m.

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 City of Sunnyside Urban Growth Area is a combination of residential, commercial, industrial, and public uses.

b. Has the project site been used as working farmlands or working forest land? 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 non-forest use?

Historically, land within the City of Sunnyside Urban Growth Area has been used for agriculture. However, some of the land area has been converted to non-agricultural urban uses over time.

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 effect.

c. *Describe any structures on the site.*

Buildings typical to a city for residential, commercial, industrial, and public uses.

d. *Will any structures be demolished? If so, what?*

Not applicable – none anticipated.

e. *What is the current zoning classification of the site?*

The incorporated and unincorporated City of Sunnyside Urban Growth Area consists of a wide range of zoning classifications including agricultural, residential, commercial, industrial, and public.

f. *What is the current comprehensive plan designation of the site?*

Not applicable.

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.*

No.

i. *Approximately how many people would reside or work in the completed project?*

Projects are planned to be constructed within City and UGA boundaries.

j. *Approximately how many people would the completed project displace?*

None.

k. *Proposed measures to avoid or reduce displacement impacts, if any:*

Not applicable.

l. *Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:*

None.

m. *Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:*

Not applicable.

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:

Not applicable.

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?

Not applicable.

b. What views in the immediate vicinity would be altered or obstructed?

None.

c. Proposed measures to reduce or control aesthetic impacts, if any:

Not applicable.

11. LIGHT AND GLARE

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Not applicable.

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.

12. RECREATION

a. What designated and informal recreational opportunities are in the immediate vicinity?

The City of Sunnyside contains numerous municipal parks and school playgrounds.

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.

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, specifically describe.

No historical structures are anticipated to be affected by projects identified in this planning effort.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Is 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.

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.

None.

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.

None anticipated.

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 City of Sunnyside Urban Growth Area contains numerous City of Sunnyside, Yakima County, and Washington Department of Transportation streets and highways. Public streets are shown on Map A and Map B of this Plan.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No public transit service is provided within the City of Sunnyside.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

None.

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).

Trenching activities associated with recommended distribution system improvements will result in asphalt road repair in some cases.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

Union Pacific operates train tracks within the City. Any project that occurs within the vicinity of the tracks will utilize boring technology to construct water lines below tracks.

f. *How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and nonpassenger vehicles). What data or transportation models were used to make these estimates?*

No change to vehicular traffic.

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.

No effect.

h. *Proposed measures to reduce or control transportation impacts, if any:*

None.

15. PUBLIC SERVICES

a. *Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other?) If so, generally describe.*

No.

b. *Proposed measures to reduce or control direct impacts on public services, if any.*

None.

16. UTILITIES

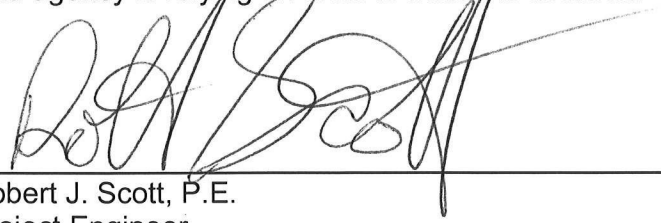
a. *Underline the utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, irrigation, cable TV, drains, other.*

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.*

None.

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.



10/17/23

Robert J. Scott, P.E. Date
Project Engineer
HLA Engineering and Land Surveying, Inc.

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

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?*

   Not likely.

   Proposed measures to avoid or reduce such increases are:

   Taking precautions as recommended in standard literature by DOE and DOH.

2. *How would the proposal be likely to affect plants, animals, fish, or marine life?*

   Proposal is anticipated to have no effect.

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

   No measures have been identified.

3. *How would the proposal be likely to deplete energy or natural resources?*

   Not likely.

   Proposed measures to protect or conserve energy and natural resources are:

   Use energy-efficient equipment and resources.

4. *How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?*

   Not likely.

   Proposed measures to protect such resources or to avoid or reduce impacts are:

   Best practices will be used in for work described in this proposal. No surrounding endangered species within proposal area.

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?*

   Not applicable – no shorelines within project areas.

   Proposed measures to avoid or reduce shoreline and land use impacts are:

   N/A.

6. *How would the proposal be likely to increase demands on transportation or public services and utilities?*

   No transportation demand increases. Electricity use will increase in the City over time as additional well pumping is needed to meet water demands throughout the water system.

Proposed measures to reduce or respond to such demand(s) are:

Capital improvements, maintaining and upgrading infrastructure, and improving system integrity reduces demand on public utilities. City's water use efficiency program is intended to decrease per capita water use within the City.

7. *Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.*

Not applicable – proposal will not conflict with existing laws.

DETERMINATION OF NONSIGNIFICANCE (DNS)

Description of Proposal:
City of Sunnyside Water System Plan Update

Proponent:
City of Sunnyside

Location of proposal, including street address, if any:
City of Sunnyside
818 E. Edison Ave.
Sunnyside, WA 98944

Lead Agency:
City of Sunnyside

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.*

X *This DNS is issued under 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by*

_____.

Responsible Official:	Trevor Martin
Position/title:	Community & Economic Development Director
Address:	City of Sunnyside 818 E. Edison Avenue Sunnyside, WA 98944
Phone:	(509) 836-6393
Date: _____	*Signature*: _____

City of SUNNYSIDE WASHINGTON

2

Water Facility Inventory (WFI) Form

HLA Engineering and Land Surveying, Inc.

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

Quarter: 1
Updated: 04/05/2023
Printed: 10/16/2023
WFI Printed For: On-Demand
Submission Reason: Pop/Connect Update

RETURN TO: Central Services - WFI, PO Box 47822, Olympia, WA, 98504-7822 or email wfi@doh.wa.gov

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
85400 3	SUNNYSIDE CITY OF	YAKIMA	A	Comm

6. PRIMARY CONTACT NAME & MAILING ADDRESS	7. OWNER NAME & MAILING ADDRESS
DANIEL R. TILIANO [SUPERVISOR] 818 E EDISON SUNNYSIDE, WA 98944	SUNNYSIDE, CITY OF SHANE FISHER DIRECTOR 818 E EDISON SUNNYSIDE, WA 98944
STREET ADDRESS IF DIFFERENT FROM ABOVE	**STREET ADDRESS IF DIFFERENT FROM ABOVE**
ATTN ADDRESS CITY STATE ZIP	ATTN ADDRESS CITY STATE ZIP

9. 24 HOUR PRIMARY CONTACT INFORMATION		10. OWNER CONTACT INFORMATION	
Primary Contact Daytime Phone: (509) 837-5206		Owner Daytime Phone: (509) 837-5399	
Primary Contact Mobile/Cell Phone: (503) 804-0521		Owner Mobile/Cell Phone: (509) 430-1321	
Primary Contact Evening Phone: (xxx)-xxx-xxxx		Owner Evening Phone: (xxx)-xxx-xxxx	
Fax:	E-mail: dxxxxxxo@sunnyside-wa.gov	Fax: (509) 837-3268	E-mail: sxxxxxr@sunnyside-wa.gov

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

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

SMA NAME: _____ SMA Number:

12. WATER SYSTEM CHARACTERISTICS (mark all that apply)

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

13. WATER SYSTEM OWNERSHIP (mark only one)

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

14. STORAGE CAPACITY (gallons)

3,500,000

- 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
85400 3	SUNNYSIDE CITY OF	YAKIMA	A	Comm

15	16	17	18									19			20	21						22	23	24			
	SOURCE NAME	INTERTIE	SOURCE CATEGORY									USE				TREATMENT						DEPTH		SOURCE LOCATION			
Source Number	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	INTERTIE SYSTEM ID NUMBER	WELL	WELL FIELD	WELL IN A WELL FIELD	SPRING	SPRING FIELD	SPRING IN SPRINGFIELD	SEA WATER	SURFACE WATER	RANNEY / INF. GALLERY	OTHER	PERMANENT	SEASONAL	EMERGENCY	SOURCE METERED	NONE	CHLORINATION	FILTRATION	FLUORIDATION	IRRADIATION (UV)	OTHER	DEPTH TO FIRST OPEN INTERVAL IN FEET	CAPACITY (GALLONS PER MINUTE)	1/4, 1/4 SECTION	SECTION NUMBER	TOWNSHIP	RANGE
S06	Well #6 - AFL811		X									X			Y		X					760	650	NW SW	30	10N	22E
S07	Well #7		X									X			Y		X					1057	1100	SW NW	36	10N	22E
S08	Well #8 - AFL812		X									X			Y		X					440	750	NE NE	26	10N	22E
S09	Well #9 - AFK905		X									X			Y		X					919	1500	SW NE	29	10N	23E
S10	Well #10 - AFL815		X											X	Y		X					1701	1000	SE NW	25	10N	22E
S11	Well #11 - AKN517		X									X			Y		X					377	500	SE NW	25	10N	22E
S12	Well #12 - ALM337				X							X			Y		X					383	350	NW NE	27	10N	22E
S13	Well #13 - BAL875				X							X			Y		X					351	650	NW NE	27	10N	22E
S14	Wellfield / S12, S13			X								X			Y	X						351	1000	NE NW	27	10N	22E

WATER FACILITIES INVENTORY (WFI) FORM - Continued

1. SYSTEM ID NO.	2. SYSTEM NAME	3. COUNTY	4. GROUP	5. TYPE
85400 3	SUNNYSIDE CITY OF	YAKIMA	A	Comm

	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?)		4871	Unspecified
A. Full Time Single Family Residences (Occupied 180 days or more per year)	3023		
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	168		
B. Full Time Residential Units in the Apartments, Condos, Duplexes, Dorms that are occupied more than 180 days/year	1848		
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.	585	585	
28. TOTAL SERVICE CONNECTIONS		5456	

29. FULL-TIME RESIDENTIAL POPULATION

A. How many residents are served by this system 180 or more days per year? 17037

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 that are NOT already included in the residential population?												
B. How many days per month are they present?												

33. ROUTINE COLIFORM SCHEDULE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	15	15	15	15	15	15	15	15	15	15	15	15

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

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:** _____

Intentionally left blank

WS ID	WS Name
85400	SUNNYSIDE CITY OF

Total WFI Printed: 1

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Water Facilities Inventory (WFI)

Report Create Date:	10/16/2023		
Water System Id(s):	854003		
Print Data on Distribution Page:	ALL		
Print Copies For:	DOH Copy		
Water System Name:	ALL		
County:	-- Any --		
Region:	ALL		
Group:	ALL		
Type:	ALL		
Permit Renewal Quarter:	ALL		
Water System Is New:	ALL		
Water System Status:	ALL		
Water Status Date From:	ALL	**To**	ALL
Water System Update Date	ALL	**To**	ALL
Owner Number:	ALL		
SMA Number:	ALL		
SMA Name:	ALL		
Active Connection Count From:	ALL	**To:**	ALL
Approved Connection Count	ALL	**To:**	ALL
Full-Time Population From:	ALL	**To:**	ALL
Water System Expanding	ALL		
Source Type:	ALL		
Source Use:	ALL		
WFI Printed For:	On-Demand		

City of SUNNYSIDE WASHINGTON

3

WSP Comments and Responses

HLA Engineering and Land Surveying, Inc.

City of SUNNYSIDE WASHINGTON

4

Consumer Meeting Documentation

HLA Engineering and Land Surveying, Inc.

City of SUNNYSIDE WASHINGTON

5

Local Government Consistency Review Checklist(s)

HLA Engineering and Land Surveying, Inc.

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Local Government Consistency Determination Form

Water System Name: City of Sunnyside PWS ID: 854003

Planning/Engineering Document Title: Water System Plan Update Plan Date: November, 2023

Local Government with Jurisdiction Conducting Review: City of Sunnyside

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: Identify the page(s) in submittal	For use by local government: Yes or Not Applicable
a) The water system service area is consistent with the adopted land use and zoning within the service area.	1-7 to 1-14	Yes
b) The growth projection used to forecast water demand is consistent with the adopted city or county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.	2-9 to 2-16	No. See citation in my email of 3-15-24.
c) For cities and towns that provide water service: All water service area policies of the city or town described in the plan conform to all relevant utility service extension ordinances.	1-13 to 1-15	Not Applicable
d) Service area policies for new service connections conform to the adopted local plans and adopted development regulations of all cities and counties with jurisdiction over the service area.	1-13 to 1-15	Yes
e) Other relevant elements related to water supply are addressed in the water system plan, if applicable. This may include Coordinated Water System Plans, Regional Wastewater Plans, Reclaimed Water Plans, Groundwater Management Area Plans, and the Capital Facilities Element of local comprehensive plans.	N/A	Not Applicable

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.

Phil Hoge ("b" is inconsistent) 3-15-24

Signature Date

Phil Hoge, Planner, Yakima County Planning Division

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.

Washington State Department of Health
Division of Environmental Health
Office of Drinking Water

Local Government Consistency Determination Form

Water System Name: City of Sunnyside PWS ID: 854003

Planning/Engineering Document Title: Water System Plan Update Plan Date: November, 2023

Local Government with Jurisdiction Conducting Review: City of Sunnyside

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.

	For use by water system	For use by local government
Local Government Consistency Statement	**Identify the page(s) in submittal**	**Yes or Not Applicable**
a) The water system service area is consistent with the adopted land use and zoning within the service area.	1-7 to 1-14	Yes
b) The growth projection used to forecast water demand is consistent with the adopted city or county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.	2-9 to 2-16	Yes
c) For cities and towns that provide water service: All water service area policies of the city or town described in the plan conform to all relevant utility service extension ordinances.	1-13 to 1-15	Yes
d) Service area policies for new service connections conform to the adopted local plans and adopted development regulations of all cities and counties with jurisdiction over the service area.	1-13 to 1-15	Yes
e) Other relevant elements related to water supply are addressed in the water system plan, if applicable. This may include Coordinated Water System Plans, Regional Wastewater Plans, Reclaimed Water Plans, Groundwater Management Area Plans, and the Capital Facilities Element of local comprehensive plans.	N/A	N/A

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

7/11/2024
Date

Cory Taylor, City of Sunnyside Deputy Development Director
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.

City of SUNNYSIDE WASHINGTON

6

City of Sunnyside Fire Department Nesting Letter

HLA Engineering and Land Surveying, Inc.

Office of the Fire Chief
Sunnyside Fire Department
513 S. 8th Street
Sunnyside, Washington 98944
Office (509)837-3999, Fax (509)836-6419

7/1/2024
To: Raul Sanchez, Public Works Director
From: Cameron Haubrich, Fire Chief
RE: City of Sunnyside Water System Plan

Dear Director Sanchez,

This letter is in reference to the response comments for the City of Sunnyside Water System Plan. As the local fire authority having jurisdiction (AHJ), I will allow the nesting of fire suppression storage and standby water supplies. The current water storage reservoirs utilized for multiple uses including fire suppression, meet the necessary fire flow requirements based on most current data for fire flow requirements in our city. It is the policy of the Sunnyside Fire Department to notify Public Works, specifically the water division, of large structure fire or any incident that may be taxing on the city's water supply or services. This notification is to ensure the water levels are monitored during the event to maintain their minimum water levels and to help determine if tactics and operations of the incident may need altering based on the water levels/supply. Previous data, in conjunction with fire code, determines the necessary storage amount should be maintained to be able to provide no less than 5,500 gallons per minute for a four (4) hour duration. Fire flow requirements have not changed significantly enough to warrant alteration or re-evaluation of the existing operation or plan.

Respectfully,

Cameron Haubrich
Fire Chief

City of SUNNYSIDE WASHINGTON

7

City of Sunnyside Municipal Code Sections

HLA Engineering and Land Surveying, Inc.

Chapter 8.24
FIRE HYDRANTS

Sections:

8.24.010 Purpose of provisions.

This chapter is enacted to provide minimum requirements for installation of fire hydrants designed or approved by the Fire Chief of the City in the exercise of his duties pursuant to Article 9 of the Uniform Fire Code, 1997 Edition. The duties under the fire code shall be deemed changed automatically when future editions of the Uniform Fire Code are amended by the International Fire Code Institute. [Ord. 1960 § 2, 1998; Ord. 1336 § 1, 1981; Ord. 1172 § 1, 1978.]

8.24.020 Requirements generally.

A. All buildings or additions to buildings constructed or located within the City after July 10, 1978, including, without limitation, structures or dwellings within automobile trailer courts, mobile home parks and planned unit developments, shall install sufficient fire hydrants and/or water mains to provide the required fire flow as determined by the Fire Chief, which hydrants and mains shall be installed in accordance with the provisions of the Sunnyside Municipal Code.

B. Fire hydrants installed prior to July 10, 1978, which do not conform with the requirements of this chapter shall, when replaced, be replaced with fire hydrants conforming to the requirements of the Sunnyside Municipal Code and shall be subject to approval by the Fire Chief.

C. All fire hydrants within the City shall be subject to inspection, testing and approval of the Fire Chief and/or the Director of Public Works. [Ord. 1336 § 2, 1981; Ord. 1172 § 2, 1978.]

8.24.030 Approval of plans required.

A. Two copies of detailed plans and specifications, accurately indicating the location of all proposed fire hydrants, valves and attendant water lines, shall be submitted to and approved by the City Fire Chief and Director of Public Works prior to commencement of construction thereof.

B. All required hydrants and mains shall be placed in service prior to issuance of a building permit or commencement of building construction relative to any new structures to be serviced thereby. [Ord. 1172 § 3, 1978.]

8.24.040 Compliance with specifications – Adoption by reference.

A. Fire hydrants, connecting pipelines, valves and appurtenances, including plans and installation details not specifically regulated by this chapter, shall conform to design standards and specifications promulgated by the City.

B. Fire hydrants, connecting pipelines, valves and appurtenances further shall conform to the specifications and standards published in following publications, of which not less than three have been and now are on file in the office of the City Clerk and which are adopted by reference and incorporated herein as fully as if set out in this chapter:

The following AWWA Standards, published by the American Waterworks Association:

1. Standard C100 – Iron pipe;
2. Standard C200 – Steel pipe;
3. Standard C300 – Concrete pipe;
4. Standard C400 – A-C pipe;
5. Standard C500 – Valves;
6. Standard C600 – Pipe laying. [Ord. 1960 § 3, 1998; Ord. 1172 § 4, 1978.]

8.24.050 Installation standards.

A. All public fire hydrants, which shall include without limitation those hydrants situated on a street right-of-way or public utility easement and maintained by the City or a water district, and all private property for firefighting purposes shall be restricted primarily to use for firefighting purposes and shall be maintained accessible for immediate use for such purposes at all times.

B. All fire hydrants shall have two National thread standard hose outlets of two and one-half inches in diameter, and one outlet of four inches in diameter, with a five-inch Storz adapter and cap.

C. All fire hydrants shall stand plumb.

D. All fire hydrants shall be set to finished grade with the lowest outlet thereof no less than 18 inches above grade and with no less than 36 inches of unobstructed area for the operation of hydrant wrenches on all outlets and the control valve. Flush-type hydrants, which hydrants are installed below grade, are prohibited except upon written approval of the Fire Chief pursuant to showing of extreme necessity.

E. All fire hydrants shall be installed with the pumper port facing the nearest street, unless the Fire Chief designates a different direction as a more likely route of fire truck approach or location for pumping.

F. All fire hydrants shall be adequately protected against vehicular damage in a manner prescribed by the Fire Chief.

G. All fire hydrants shall be equipped with an auxiliary gate valve installed between the service line and the hydrant to permit repair or replacement of the hydrant without disruption of water service.

H. All fire hydrant installations on dead-end mains or temporarily dead-end mains shall include provisions for looping, together with minimum easement of 16 feet therefor, unless the Director of Public Works approves for good cause a different installation design.

I. All hydrants installed after the effective date of this section shall be painted yellow. The bonnet of the fire hydrant shall be painted in color code to indicate the available fire flow conforming with N.F.P.A. No. 291, 1980 Edition. [Ord. 2060 § 1, 2003; Ord. 1836 § 1, 1993; Ord. 1336 §§ 3, 4, 1981; Ord. 1172 § 6, 1978.]

8.24.060 Water supply requirement.

A. All fire hydrants shall be supplied with water from a municipal water system or a water district.

B. All fire hydrants installed in residential zones after July 10, 1978, shall be supplied by eight-inch circulating mains; provided, that the Director of Public Works may approve installation of six-inch mains for lines no longer than 600 feet between intersecting mains which complete a desirable gridiron.

C. All leads from service mains to fire hydrants shall be at least six inches in diameter. [Ord. 1172 § 7, 1978.]

8.24.070 Location and number requirements – Generally.

A. The maximum distance between fire hydrants in single-family zones shall be 600 feet, except that areas of single-family zones impressed with public buildings, including schools, shall comply with subsection (B) of this section.

B. The maximum distances between fire hydrants, in other than single-family zones, shall be 400 feet with hydrants being located as nearly as possible at street intersections.

C. The length of any hydrant lead and six-inch dead-end service main shall not exceed 500 feet for any fire hydrant.

D. Not more than one fire hydrant shall be installed on a six-inch main between intersecting mains, and not more than two hydrants shall be installed on an eight-inch line between intersecting mains.

E. All fire hydrant locations shall be subject to the approval of the Fire Chief, considering such factors as utility obstructions, topography, building location, and direct access for fire apparatus from the hydrant to the structure being served without any intervening impediments.

F. All fire hydrants and Fire Department connections shall be accessible to fire apparatus by an all-weather roadway capable of supporting the imposed loads of fire apparatus. The width of the roadway is to be no less than 20 feet with a vertical clearance of 13 feet, six inches. [Ord. 1411 § 1, 1983; Ord. 1336 § 5, 1981; Ord. 1172 § 8, 1978.]

8.24.080 Location and number requirements – Certain special buildings.

Notwithstanding other requirements of this chapter, the following additional regulations shall apply to all buildings, other than single-family or two-family dwellings, any portion of which is more than 150 feet from the curb or edge of the nearest established street or public highway:

A. Fire hydrants shall be a minimum of 50 feet away from a building or structure, unless as determined by the Fire Chief; a longer minimum distance is needed for the safety of firemen and fire vehicles using the hydrant.

B. Buildings having a required flow of 2,500 or more gallons per minute shall be served by fire hydrants with mains which loop around the building or complex of buildings and reconnect or extend to another grid system.

C. Buildings having a required fire flow of less than 2,500 gallons per minute may be permitted to have hydrants on one side of the building only.

D. Location of fire hydrants shall be subject to approval of the Fire Chief, considering such factors as utilities, topography, and building location. [Ord. 1411 § 2, 1983; Ord. 1172 § 9, 1978.]

Chapter 13.08
GENERAL PROVISIONS

Sections:

13.08.010 Water and sewer connections outside City limits – Generally.

Water and sewer connections or extensions to lands outside the corporate limits of the City shall be permitted, when reasonably available, within the Sunnyside Area Comprehensive Plan, and where the recipient of said services pays for or arranges for payment of the costs of said extension. Extension of utility services to areas outside of the City limits which do not meet the above requirements would need to be reviewed, in advance, by the City Council for approval or denial. Any connections or extensions outside of the City limits shall be subject to the charges and costs specified in the City code and shall be subject to specifications and policies of the City. [Ord. 1614 § 1, 1987; 1956 Code § 3-501, § 801.]

13.08.020 Water and sewer connections outside City limits – Terms.

Domestic water and sewer lines or mains lying outside of the corporate limits of the City shall be installed, owned and maintained by the consumers, unless the City has inspected, approved, and consented to receive the same. Unless the City has inspected and approved acquisition of such water and sewer mains or lines, the City shall have no duty to repair or replace such mains or lines. Water meters on such domestic service outside of the corporate limits shall be placed, installed and maintained within the discretion of the Public Works Department and shall remain the property of the City regardless of location. [Ord. 1614 § 2, 1987; 1956 Code § 3-501, § 802.]

13.08.030 Authority to shut off and repair water lines.

The Director is directed and authorized to immediately shut off all domestic lines whenever such water lines develop leaks or their condition is such as to constitute a danger to the domestic water supplies of the City of Sunnyside. Such water lines shall remain shut off until properly repaired or replaced. In the event the leaks or defects exist on service lines to consumers within the City limits or on any portion of the main lines or supply lines outside the City limits, such repairs and replacements as may be necessary shall be accomplished by and at the sole expense of the consumer or owner of the property to which the service is provided, subject to the supervision and final approval of the Director. [1956 Code § 3-501, § 803.]

13.08.040 Fire hydrant operation.

No person other than an authorized employee of the Water and Sewer Department, the Fire Department or Street Department shall operate fire hydrants or interfere therewith in any way without first obtaining authority to do so from the Water and Sewer Department. [1956 Code § 3-501, § 805.]

13.08.050 After-hours and emergency services.

In the event that City employees in the Water and Sewer Department are called for services to a consumer after normal business hours during weekdays and on weekends, there shall be charged to the consumer a minimum of $20.00 to be assessed and collected as herein provided in the City's current rate provisions; provided, however, that there shall be no charge for callout employees of the Water and Sewage Department regardless of the time of such call for the purpose of repairing, replacing or maintaining plugged sewer lines, broken water mains, missing and broken stop signs, and downed trees or other public emergency. [1956 Code § 3-501, § 805(A).]

13.08.060 Interference with systems prohibited.

No unauthorized person shall maliciously, willfully or negligently break, damage, destroy, uncover, deface or tamper with any structure, appurtenances, or equipment which is a part of the domestic water system or the public sewer and sewage disposal system. [1956 Code § 3-501, § 806.]

13.08.070 Liability for expenses incurred in violations.

Any person who violates any of the provisions of Chapters 13.12 and 13.16 SMC or this chapter shall become liable to the City for any expense, loss or damage occasioned by the City by reason of such violation. [1956 Code § 3-501, § 807.]

13.08.080 Action to collect delinquent charges.

In the event the City commences an action against any property owner to collect delinquent water and/or sewer charges, the prevailing party in such suit shall be entitled to the award of its costs and a reasonable attorney fee. [Ord. 1244 § 1, 1980.]

13.08.085 Lien for sewer delinquent charges – Enforcement.

The City of Sunnyside shall have a lien for delinquent and unpaid rates and charges for sewer service, applicable penalties and connection charges, including interest thereon at the rate of eight percent per annum computed on a monthly basis, against the premises to which such service has been furnished or is available, which lien shall be superior to all other liens and encumbrances except general taxes and local and special assessments. The sewerage lien shall be effective for a total of not to exceed six months' delinquent charges without the necessity of any writing or recording. In order to make such lien effective for more than six months' charges, the City Manager or his designee shall cause to be filed for record in the office of the Yakima County Auditor a notice of lien substantially in the form prescribed pursuant to RCW 35.67.210. The sewerage lien may thereafter be foreclosed in accordance with law.

As an additional and concurrent method of enforcing the lien authorized in this section, the City may enforce such lien by cutting off the water and/or sewer service from the premises to which such sewer service was furnished after the charges become delinquent and unpaid until the charges are paid. The City shall send written notice at least 10 days in advance of cutting off of such service to the last known owner of the property and any occupant of the premises. The written notice shall state the amount of the delinquent account, the date service will be cut off unless such delinquent account is paid in full, and the amount to be paid to restore such service in the event the service is cut off. The right to enforce the lien by cutting off and refusing such service shall not be exercised after two years from the date of the recording of sewerage lien notice, except to enforce payment of six months' charges for which no lien notice is required to be recorded, all pursuant to RCW 35.67.290 as now existing or hereafter amended.

Upon enforcement of such lien by cutting off the water and/or sewer service, such service shall be deemed abandoned, and subject to reinstatement only upon compliance with the provisions of SMC 13.20.035(C) and payment of all costs incurred by the City of Sunnyside in cutting off such service. [Ord. 1992 § 1, 1999; Ord. 1944 § 1, 1997.]

Chapter 13.16
WATER SERVICE

Sections:

13.16.010 Application for service.

All applications for water service installations and for water service shall be made at the office of the City Clerk on forms furnished by the City, which the applicant shall supplement with such information as deemed necessary by the Superintendent. All applications shall be made by the owner of the property to be served or his authorized agent, and all accounts shall be in the name of the owner of such property. No person shall make any connection with either the domestic system or add to an existing connection any additional unit without first obtaining a permit as required in this section. [1956 Code § 3-501, § 601.]

13.16.020 Separate connection required for each unit.

In making all future connections with the domestic water system, each residence, residential unit, individual business, business enterprise, or business unit, or industrial enterprise or unit shall be considered an individual consumer and shall be supplied through a separate service connection; provided, that the term “future connections” shall be deemed to include any and all connections hereinafter made or modifications to existing connections such as the installation of water meters onto domestic supply lines in those instances where such meters have not been installed. [Ord. 1946 § 1, 1997; Ord. 1277 § 1, 1980; 1956 Code § 3-501, § 602.]

13.16.030 Liability for meter or service location.

When it is necessary for the convenience of the City, or because of the installation of new water mains, or for any other reasons, to change an existing domestic water meter or domestic water service location, such new location shall be made at the cost and expense of the Water Department, except that the property owner reinstalls his domestic water service pipes to connect with the water main meter as relocated at his own expense. [1956 Code § 3-501, § 603.]

13.16.040 Pipe depth below ground.

All new service pipes shall be placed not less than 36 inches below the surface of the ground. [1956 Code § 3-501, § 604.]

13.16.050 Responsibility for leaks or damages.

Owners of services are responsible for all leaks or damages on account of leaks from privately owned services. Privately owned services shall be deemed to include all domestic service lines between the meter and consumer’s property and all domestic service lines lying in, on or under the consumer’s property. All water meters shall be and remain the property of the City and the responsibility of the City; such meters may be removed, replaced or changed as to size and type by the Water Department whenever deemed necessary. [1956 Code § 3-501, § 605.]

Chapter 13.18
CROSS-CONNECTION CONTROL PROGRAM

Sections:

13.18.010 Authority.
Pursuant to WAC 246-290-490, or as amended, it is the responsibility of the City of Sunnyside to protect its domestic water supply by implementing and enforcing a cross-connection control system. [Ord. 2079 § 1, 2004.]

13.18.020 Purpose.
The purpose of this chapter is to protect the water system of the City of Sunnyside from contamination or pollution due to any existing or potential cross-connections as defined in WAC 246-290-010, or as amended, this chapter and the City of Sunnyside Standard Operating Procedures Manual for Cross Connection Control, which is hereby adopted by reference and shall be administratively amended as necessary to effectively administer this program. [Ord. 2079 § 1, 2004.]

13.18.030 Cross-connections regulated.
A. No cross-connections shall be created, installed, used or maintained at any property served by the City water system, except in accordance with this chapter.

B. The City shall carry out plan reviews and/or inspections to determine if any actual or potential cross-connections exist in all new construction (regardless of type or use) as well as all nonresidential property existing prior to the effective date of this chapter that is served by the City water system. If found necessary by the City, an assembly commensurate with the degree of hazard will be required to be installed at the service connection or other appropriate location(s).

C. The City shall complete an initial survey, and periodically thereafter, of all residential properties existing prior to the effective date of this chapter served by the City water system as a means of determining if and where backflow protection is warranted and whether or not it currently exists. If found necessary by the City, an assembly commensurate with the degree of hazard will be installed at the service connection or other appropriate location(s).

D. The owner, occupant or person in control of the property is responsible for the prevention of all future cross-connections within and upon the premises. [Ord. 2079 § 1, 2004.]

13.18.040 Application and responsibilities.
This chapter applies throughout the City and to all premises and properties served by the City water system. It applies to any premises, public or private, regardless of date of connection to the City water system. Every owner, occupant and/or person in control of any such premises is responsible for compliance with the terms and provisions contained herein. [Ord. 2079 § 1, 2004.]

13.18.050 Costs of compliance.
All costs associated with the purchase, installation, inspections, testing, replacement, maintenance, parts, and repairs of backflow prevention assemblies at all nonresidential facilities served by the City water system and multifamily residential buildings with water services larger than one inch are the financial responsibility of the property owner. All costs associated with any disconnect fees incurred or assessed pursuant to the enforcement of this chapter are the sole responsibility of the water user and/or property owner.

All costs associated with the purchase and installation of backflow prevention assemblies required at new residential properties served by the City water system, including multifamily residential buildings with one-inch or smaller water services, shall be the responsibility of the owner and shall be paid in conjunction with their water connection fee. The owner of any residential property existing prior to the effective date of this chapter who alters, modifies or improves such property's plumbing or water system in a manner that requires backflow prevention, such as installation of an underground sprinkler system, shall be responsible for the purchase and installation costs of the appropriate backflow prevention assembly.

All costs associated with inspections, testing, replacement, maintenance, parts and repairs of all backflow prevention assemblies required at residential properties served by the City water system, including multifamily residential buildings with one-inch or smaller water services, shall be the responsibility of the property owner. [Ord. 2018-4 § 1, 2018; Ord. 2079 § 1, 2004.]

13.18.060 Recovery of costs.
Any person violating any of the provisions of this chapter and any person who causes damage to or impairs the City water system, including but not limited to allowing contamination, pollution, or any other contaminating substance or used water to enter the City water system, shall be liable to the City for any expense, loss or damage caused by such violation. The City shall collect from the violator for the costs incurred by the City for any cleaning, purifying, repair or replacement work or any other

expenses caused by the violation. Refusal to pay the assessed costs shall constitute a violation of this chapter and shall result in termination of service. [Ord. 2079 § 1, 2004.]

13.18.070 Emergency suspension of service.
The City may, without prior notice, suspend water service to any premises when such suspension is necessary to stop the imminent threat of any actual or potential cross-connection as defined in this chapter or the City of Sunnyside Standard Operating Procedures Manual for Cross Connection Control. [Ord. 2079 § 1, 2004.]

13.18.080 Nonemergency suspension of service.
The City may suspend, with 24 hours' notice, the water supply to any premises where the conditions of this chapter have been violated. [Ord. 2079 § 1, 2004.]

13.18.090 Penalties.
Any person, property owner, firm, corporation or business entity violating (A) this chapter or (B) any regulation, rule, or permit of the City issued pursuant to this chapter shall be liable to the City for civil penalty. The amount of such civil penalty shall be up to $1,000 per violation. Each continuing day's violation under this chapter shall constitute a separate offense. The penal provisions imposed under this chapter shall not preclude the City from filing suit or pursuing any other action to enjoin any violation or remedy such violation. The City retains all legal rights and remedies available to it pursuant to local, State and federal law. [Ord. 2079 § 1, 2004.]

13.18.100 Falsifying information.
Any person who knowingly makes any false statement, representation, record, report or other document filed or required to be maintained pursuant to this chapter, or who falsifies, tampers with, or knowingly renders inaccurate any backflow prevention assembly, device or method required under this chapter shall (in addition to civil and/or criminal penalties provided in this chapter or State law) be guilty of a misdemeanor subject to the general penalty provisions of the Sunnyside Municipal Code. [Ord. 2079 § 1, 2004.]

13.18.110 Constitutionality and severability.
If any provision, section, sentence, clause or phrase of this chapter, or the application of the same to any person or set of circumstances are for any reason held to be unconstitutional, void, invalid or for any reason unenforceable, the validity of the remaining portions of this chapter or its application to other persons or circumstances shall not be affected thereby, it being the intent of the City's legislative body that no portion hereof or regulation contained herein shall become inoperative or fail by reason of any unconstitutionality or invalidity of any other portion, provision or regulation. [Ord. 2079 § 1, 2004.]

13.18.120 Effective date.
The effective date of this chapter shall be August 1, 2004. [Ord. 2079 § 1, 2004.]

Chapter 13.20
RATES AND CHARGES

Sections:

13.20.010 Water – Schedule of charges for service and consumption.

The charges for service and domestic water consumed by customers inside and outside the corporate limits of the City shall be upon the applicable schedule set forth on the schedule of fees and charges in SMC 2.02.020, effective June 1, 1983. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1399 § 1, 1983; Ord. 1252 § 2, 1980; 1956 Code § 3-501, § 701.]

13.20.015 Minimum monthly rate.

The minimum monthly rate for water service shall be the applicable meter charge as established from time to time and set forth on the schedule of fees and charges in SMC 2.02.020. The minimum monthly charge shall include the first 300 cubic feet of water usage each month. All water usage above 300 cubic feet per month shall be charged at the consumption charge rates set forth in SMC 2.02.020. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2015-1 § 5, 2015; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 2108 § 1, 2005.]

13.20.020 Water – Consumption charges inside the City.

For water delivered, based upon monthly meter readings, billings shall be in accordance with the table located at SMC 2.02.020. The monthly rate shall be the applicable minimum monthly meter charge plus a consumption charge.

No charge shall be made for water delivered to fire sprinkler systems for firefighting purposes; however, the entire installation of a separate service connection including necessary valves and detector equipment, all as deemed required by the Director, shall be made by the City and the full cost of this work shall be borne by the owner or owners of the property so served. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2015-1 § 5, 2015; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 2108 § 1, 2005; Ord. 2071 § 2, 2004; Ord. 2063 § 1, 2003; Ord. 1942 § 2, 1997; Ord. 1930 § 2, 1996; Ord. 1839 § 2, 1993; Ord. 1714 §§ 4, 5, 6, 1990; Ord. 1578 § 2, 1986; Ord. 1399 § 3, 1983; Ord. 1357 § 3, 1982; Ord. 1252 § 2, 1980; 1956 Code § 3-501, § 701. Formerly 13.20.030.]

13.20.025 Intermittent service – Abandonment – Reinstatement – Fees.

A. Intermittent Service – Fees. Property owners may request to have their water and/or sewer service turned off for intermittent periods. Any property owner so requesting such temporary termination of service, except for needed repairs to be made during normal City business hours, shall complete and sign an application provided by the City Clerk and shall pay a turn-off/turn-on fee in the amount set forth in SMC 2.02.020. It is further provided that the utility charges against said property must be paid current to receive such intermittent turn-off and turn-on.

B. Abandonment of Utility Service. In the event sewer and/or water service is shut off for nonpayment of delinquent utility charges, and the property owner has failed to pay in full all accrued water and/or service charges for a period of one year after such shut-off, the City may declare such water service and/or sewer service abandoned in accordance with the following procedure. To declare abandonment of any service, the City shall mail, by certified mail, return receipt requested, or personally deliver to the property owner a notice of proposed abandonment. Such notice shall state that, unless all accrued unpaid service charges are paid in full within 30 days of the date of such notice, the City shall declare such service abandoned and cause notice of abandonment to be filed and recorded against such property in the Yakima County Auditor's Office. If the owner of the property intentionally abandons such services and delivers written notice thereof to the City, the City shall thereupon file and record a notice of abandonment with the Yakima County Auditor's Office. Abandonment of such service shall be deemed effective upon such filing and recording with the Yakima County Auditor's Office. Upon abandonment, the City may remove any utility service meters or fixtures serving the property.

C. Reinstatement of Service after Abandonment. If any person desires to reinstate any utility service which has been abandoned pursuant to this section, such request shall be deemed a request for new sewer and/or water utility service installation and hookup. Prior to such reinstatement of service, the person requesting such reinstatement shall first pay in full all applicable hookup and connection charges then current pursuant to SMC 2.02.020, including costs and charges for new service meter and fixtures

regardless of whether or not such meter and fixtures have previously been removed by the City and excluding any applicable equity fee defined in SMC 2.02.020, as said section exists or is hereinafter amended. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1989 § 1, 1999; Ord. 1902 § 1, 1995; Ord. 1839 § 3, 1993; Ord. 1714 §§ 7, 8, 9, 1990; Ord. 1594 § 1, 1987. Formerly 13.20.035.]

13.20.030 Water – Service charge billings to be determined by meter size.
Billings for the service charge shall be determined by the meter size deemed by the Director as necessary to efficiently meter water delivered to the water customer. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1252 § 2, 1980; 1956 Code § 3-501, § 701. Formerly 13.20.040.]

13.20.040 Water – Service rates outside City limits.
Water service outside the City corporate limits shall be furnished where approved by an outside utility agreement at a rate of one and one-half times that stipulated for inside the City corporate limits. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1252 § 2, 1980; 1956 Code § 3-501, § 701. Formerly 13.20.050.]

13.20.050 Reinstatement of water service after turning off for nonpayment.
In addition to the late fee penalty assessed pursuant to SMC 2.02.020, the property owner shall be required to pay in full all accrued and unpaid amounts due and owing on said utility account prior to reinstatement of utility service, plus a fee in the amount as set forth in SMC 2.02.020 for turn-off/turn-on of the utility service. The fee for utility turn-off/turn-on may be adjusted annually by the City Manager to reflect adjustments or changes in maintenance and operations costs of the water utility; provided, however, that no annual increase shall exceed six percent without prior approval of the City Council. In the event such rate is modified, the City Manager shall post the new rate at the offices of City Hall and may distribute or publish such new rate as deemed appropriate to advise the public. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 2136 § 1, 2006; Ord. 2108 § 2, 2005; Ord. 1990 § 1, 1999; Ord. 1252 § 2, 1980; 1956 Code § 3-501, § 701. Formerly 13.20.060.]

13.20.060 Water – Tampering with turn-on valve prohibited – Penalty for violation.
No person shall be permitted to tamper with the water turn-on valve. Any person found guilty of violating this provision shall be deemed guilty of a misdemeanor. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1510 § 1, 1985; Ord. 1252 § 2, 1980; 1956 Code § 3-501, § 701. Formerly 13.20.070.]

13.20.070 Water – Multiple unit charges.
A. General. Except as provided in subsection (C) of this section, in the case of hospitals, apartments, cabins, hotels and business houses, where such units are so situated on property that the individual unit cannot lawfully be deeded as separate property, such units shall be classified as multiple units and are not to be considered as individual units. Also included in this classification of multiple unit shall be the Sunnyside Housing Authority situated on lands owned by said Authority, where water mains within such housing project have been installed and are maintained by said Authority or its predecessor.

B. Multiple Unit Charges. Charges for such multiple unit customers listed above shall be billed to one applicant for the entire unit and consist of a service charge for the applicable meter size serving the overall unit, as shown on the schedule in SMC 2.02.020, plus a charge for water delivered.

C. Manufactured Home Parks.

1. New Manufactured Home Parks. Each manufactured home park constructed after January 31, 2005, shall include separate individual water, sewer and utility service connections for each manufactured home or other residential unit or structure within the park, all pursuant to SMC 16.12.190, Utilities (for mobile home parks). Utility billings shall be sent to the resident or tenant of each manufactured home or other residential unit in the park unless the owner of the park requests in writing that such billing or billings be tendered to such owner. In all cases, any unpaid bills by tenants are the responsibility of the owner of the manufactured home and shall become a lien on the manufactured home if unpaid. Billings for water provided through meters installed by the owner of the park for purposes of providing water to playgrounds, parks, landscape areas or other areas intended for the benefit of park residents or the public shall be sent to the owner of such park for payment.

2. Existing Manufactured Home Parks. Each manufactured home park existing as of February 1, 2005, shall have the option to maintain the existing billing procedures authorized pursuant to subsection (B) of this section or to install separate individual meters and utility connections serving each manufactured home or other unit within the park. If the latter option is implemented, the manufactured home park shall be governed by subsection (C)(1) of this section and the provisions of SMC 16.12.190, including but not limited to the following procedures: The City shall provide for or perform water meter reading for such meters installed. The resident of the manufactured home or other residential unit in the park shall be directly responsible for payment of the water and other utility charges (utility bill) unless the owner of the manufactured home or other residential unit specifically in writing requests such billing be made to the owner of such manufactured home or other residential unit. The City shall bill the owner and/or resident of such manufactured home or other residential unit served by the utility connection in accordance with the billing rates, schedule and procedures of the City. Billings for water provided through any meters serving playgrounds, parks, landscape areas or other areas intended for use by park residents or the public shall be sent to the owner of the park for payment. The City shall also read the master meter serving the park. Billing for any City water flowing through such master meter in excess of the water accounted through the total water flowing through the individual meters in any billing cycle shall be delivered to, and paid by, the owner of the park. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 2096 § 2, 2005; Ord. 1252 § 2, 1980; 1956 Code § 3-501, § 701. Formerly 13.20.080.]

13.20.080 Water – Joint users charges.
Where two or more individual-unit customers are served by a single meter, and such service has been authorized in view of special considerations by the Director, water bills shall be computed separately for each such individual unit as follows:

A. A monthly service charge, consisting of the meter charge and the consumption charge, shall be made for each individual unit based upon the meter size deemed by the Director as necessary to efficiently meter water delivered to the individual unit as if that individual unit were independently connected to the water system.

B. A minimum of 300 cubic feet of water shall be allotted to each individual unit and included in the minimum meter charge.

C. Any excess water usage exceeding the aggregate of a 300-cubic-foot minimum times the number of individual units shall be divided equally to each individual customer and billed in accordance with the applicable rate schedule set forth in SMC 2.02.020.

D. The billing shall be tabulated as described above and the totaled amount billed to the one applicant responsible for the joint users serviced from a single meter; and, in all such cases, all such individual users shall be jointly and severally liable for the excess of water used above such minimum amount and be jointly affected by any prohibition herein as to use by others and, in case of delinquency of one such joint user, the City shall have the same remedy as though all such joint users were delinquent. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2015-1 § 5, 2015; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1252 § 2, 1980; 1956 Code § 3-501, § 701. Formerly 13.20.090.]

13.20.090 Public sewer service – Schedule A – Monthly.
The charge for public sewer service to locations within the City limits shall be upon the applicable following schedule; provided, that in the event billings are made in alternate months, the following charges are to be doubled:

A. Charges for sewer services shall be based upon monthly water readings, except as otherwise provided in this section. The monthly sewer billings shall be in accordance with the table set forth in SMC 2.02.020.

B. All customers whose water consumption would be affected by the use of water for irrigation purposes shall be charged an average monthly sewer rate, for the months of March through November, based upon the monthly average for water consumption readings for the preceding months of December through February, according to the rates set forth in SMC 2.02.020.

C. Those customers who do not receive City domestic water service but who receive City sewer service, so that a discharge rate cannot be determined from water consumption, shall pay a flat rate as set forth in SMC 2.02.020. Larger dischargers will be required to install a flow meter to determine sewer charges.

D. Commercial/Industrial Users. All commercial customers and processing plant water users, whether minor or significant, whose waste discharge contains a BOD (biochemical oxygen demand) strength not to exceed 300 milligrams per liter shall pay monthly sewer charges as set forth in SMC 2.02.020.

BOD tests may be conducted by the City at any time, and the customer shall cooperate with the City in scheduling and providing for such tests. Waste discharge that exceeds 300 mg/l of BOD and/or TSS shall incur fees that are mathematically adjusted to coincide with the rates listed in SMC 2.02.020.

E. Customers who have their water turned off for intermittent periods, with no water consumption being reflected in their monthly readings, shall pay a minimum sewer charge as set forth in SMC 2.02.020. It is provided, however, that in order for a customer to receive this reduced minimum sewer rate where water service is temporarily terminated, the water must be turned off during the entire billing period. Otherwise, the customer shall pay the rate as would otherwise apply. For the purposes of this subsection, “billing period” means the time from the last water meter reading to the current water meter reading.

F. Industrial users may be billed for sewer service on the basis of the measured discharge flows rather than water usage. Where water consumption cannot be reasonably used to determine sanitary sewer discharge in manufacturing plants and food processing plants, an estimate of the average number of employees shall be provided to the City and a charge be made calculated based on the minimum monthly fee plus a monthly fee per employee as set forth in SMC 2.02.020.

After the initial determination, a new determination of employee numbers and corresponding monthly sewer charge shall be made annually, based upon the previous average annual employment level.

G. Where the code requires either a grease trap or a sedimentation trap, there shall be added to the monthly sewer bill a surcharge of $24.52. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2010-8 § 1, 2010; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 2131 § 1, 2006; Ord. 2071 § 3, 2004; Ord. 2063 § 1, 2003; Ord. 1989 § 3, 1999; Ord. 1839 § 4, 1993; Ord. 1714 §§ 10, 11, 12, 1990; Ord. 1594 § 1, 1987; Ord. 1514 § 1, 1985; Ord. 1479 § 1, 1984; Ord. 1468 § 1, 1984; Ord. 1399 § 4, 1983; Ord. 1357 § 4, 1982; Ord. 1261 §§ 1 – 4, 1980; Ord. 1252 § 3, 1980; 1956 Code § 3-501, § 702. Formerly 13.20.100.]

13.20.100 Public sewer service – Charges outside of City limits.
The monthly charges for sewer service to property located outside of the corporate limits of the City, served in whole or in part by public sewer, shall be according to the schedule provided in SMC 2.02.020, increased by 25 percent. It is provided, however, that the rate for qualified low-income senior citizen residents receiving sewer services to property outside of the City limits shall not be increased by said 25 percent. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1594 § 2, 1987; Ord. 1252 § 3, 1980; 1956 Code § 3-501, § 702. Formerly 13.20.110.]

13.20.110 Low-income senior citizen and low-income disabled citizen special utility rates – Eligibility – Application.
A. Qualification. The special residential rate for low-income senior citizens or low-income disabled citizens specified in SMC 2.02.020 shall be available to each person who shows satisfactory proof to the Director of Finance and Administrative Services, or their designee, that he or she:

1. Is 62 years of age or older on or before the thirty-first of January of the year of his or her application. Proof of age must be presented at the time of application; or

2. Is qualified for and entitled to receive special parking privileges established pursuant to RCW 46.19.010(1)(a) through (j), or is blind as defined in RCW 74.18.020(4), or a person who qualifies for supplemental Social Security benefits due to a disability, or developmentally disabled as defined in RCW 71A.010.020(2), or a mentally ill person as defined in RCW 70.05.020(1). Proof of such disability must be presented at the time of application; and

3. Applicant must reside on the property being served and the utility account must be in the applicant’s name. If the applicant is leasing the residence or the account is not in the applicant’s name, the owner of the residence must sign the attestation of owner on the application. Persons in federally subsidized housing are not eligible for low-income senior citizen and low-income disabled citizen special utility rates; and

4. Is a single occupant or the head of household or the spouse of the head of household; and

5. Must have a combined household income from all sources, based on family size, not exceeding 125 percent of the federally established poverty level for Yakima County or qualify for and be entitled to the exemption from regular real property taxes as set forth in RCW 84.36.381(5)(b)(i) or (ii) as it now exists or is hereafter amended. Proof of such exemption must be presented at the time of application. Appropriate tax statements issued by Yakima County establishing such exemption shall be satisfactory proof of eligibility for the special utility rate.

B. Application and Processing. The City Manager of the City, or their designee, shall be authorized and empowered to implement the procedures for application and processing of requests for low-income senior citizen and low-income disabled citizen special utility rates and to adjust the discount rate as set forth in SMC 2.02.020. The application for low-income senior citizen or low-income disabled citizen special utility rate must be filed annually with the City Finance Department prior to the thirtieth of April of each year and, if approved, shall be effective for the year of application until the following thirtieth of April. Any filing of an application after the thirtieth of April of any year shall apply only to utility accounts mailed after the date of filing and shall not be applied retroactively.

C. Discount Rate. The low-income senior citizen and low-income disabled citizen special utility rate shall consist of the applicable water, sewer and stormwater rates set forth in SMC 2.02.020.The amount of reductions shall be deducted from the utility bills otherwise payable by the qualified low-income senior citizen or low-income disabled citizen.

D. False Information. Any individual willfully providing false information to the City in an application for reduced utility rates shall forfeit the low-income senior or disabled citizen’s eligibility for rate reductions in utility rates and shall be guilty of a misdemeanor. Additionally, the low-income senior or disabled citizen making such false statement to obtain benefits under this chapter shall be required to repay the amount of any utility discount received based upon such false information, together with interest at the rate of 12 percent per annum until repaid in full. [Ord. 2021-11 § 1, 2021; Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2010-9 § 1, 2010; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 2110 § 1, 2005; Ord. 2016 § 1, 2000; Ord. 1714 § 13, 1990. Formerly 13.20.120.]

13.20.120 Water system equity fees – Meter installation costs.

A. Definitions. For the purpose of this section, the following definitions apply:

1. “Residential” means any building or structure designed for occupancy by one or more families.

2. “Commercial” means retail and wholesale business for home, farm, construction, business, food and auto-related purchases, including but not limited to those uses of property described in SMC 17.36.020, 17.40.020, and 17.44.020, and for purposes of this section includes churches.

3. “Industrial” means those buildings and facilities used for major manufacturing, assembly and processing plants; small manufacturing, processing, assembly or storage facilities, including but not limited to those uses described in SMC 17.56.020 and 17.60.020.

B. Water System Equity Fees. A water system equity fee intended to provide the customer an equitable “buy-in” to the existing water system shall be paid to the City by persons, firms, companies, associations, organizations or other customers at the time of the application for connection to the City’s water system as set forth in SMC 2.02.020.

C. Water Meter Installation Fee. In addition to the water system equity fee, the applicant for water service from the City of Sunnyside shall pay a water meter installation connection charge, intended to cover the cost to the City of Sunnyside for installation of water lines, meters and other facilities to provide water service to the applicant’s property, as set forth in SMC 2.02.020.

D. Adjustment of Fees.

1. Annual Review by City Council. The schedule of water system equity fees and meter installation fees set forth in SMC 2.02.020 may be reviewed annually by the City Council to determine if the rates need adjustments. For the purpose of such adjustments, the City Council may use the Engineering News-Record Construction Cost Index for Seattle published by McGraw-Hill, or any other additional information which may give actual costs of construction in the area of Sunnyside.

2. Adjustment of Meter Installation Fees by Public Works Director. Notwithstanding the above, the Public Works Director may reduce the meter installation fee described in SMC 2.02.020 by any amount deemed appropriate by the Public Works Director, in any case for which the Public Works Director determines that such reduction is equitable. In making any determination to reduce the applicable meter installation fee in any particular case, the Public Works Director shall consider the following factors:

a. The amount and cost of water meter installation work performed, or to be performed, by the applicant;

b. The amount of work and cost of any water meter installation work to be performed by the City; and

c. Any other factor deemed reasonable and appropriate by the Public Works Director.

Reduction of the water meter installation fee in any particular case or application shall not constitute a waiver of the City’s right to impose and require the full water meter installation fee for any other connection to the City’s water system. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1837 § 1, 1993; Ord. 1750 § 1, 1991; Ord. 1733 § 1, 1991; Ord. 1509 § 1, 1985; Ord. 1322 § 1, 1981; Ord. 1309 §§ 1, 2, 1981; Ord. 1252 § 2, 1981; 1956 Code § 3-501, § 705. Formerly 13.20.130.]

13.20.130 Sewer system equity fees.

Sewer connection equity fees shall be charged according to the schedule for connecting to the City’s sanitary sewer as set forth in SMC 2.02.020.

A. Definitions. For the purposes of this section, the following definitions apply:

1. “Single-family” residential dwelling unit means a detached building designed for occupancy by one family.

2. “Duplex” means a detached building designed for occupancy exclusively by two families living independently of each other.

3. “Multiple dwelling unit” means a building or portion thereof designed as a residence for three or more families living independently of each other.

4. “Apartment house” means a building or portion thereof used or intended to be used as a home by three or more families or householders living independently of each other, in separate apartments, and containing three or more dwelling units.

5. “Mobile home park” means any tract of land used or designated to accommodate two or more automobile trailers or mobile homes.

6. “Commercial” means large-site retail and wholesale business such as shopping centers for home, farm, construction, business, food and auto-related purchases, including but not limited to those uses of property described in SMC 17.36.020, 17.40.020 and 17.44.020 and, for purposes of this section, includes churches.

7. “Industrial” means those buildings and facilities used for major manufacturing, assembly and processing plants; small manufacturing, processing, assembly or storage facilities, including but not limited to those uses described in SMC 17.56.020 and 17.60.020.

8. “Domestic wastewater” means water carrying human wastes, including kitchen, bath and laundry wastes, from residences, buildings, industrial establishments or other places.

9. “Industrial wastewater” means water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These waters may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feedlots, poultry houses or dairies. The term includes contaminated storm water and also leachate from solid waste facilities.

B. Equity fee schedule is located at SMC 2.02.020.

C. Additional connection fee for industrial and commercial connections is located in SMC 2.02.020.

D. Annual Review of Fees. The schedule of charges may be reviewed annually for inflation, and adjusted, if necessary, to maintain an equitable fee structure. For the purpose of this adjustment, the City Council may use the Engineering News-Record Construction Cost Index for Seattle, as published by McGraw-Hill. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1794 § 1, 1992; Ord. 1627 § 1, 1988; Ord. 1509 § 1, 1985. Formerly 13.20.140.]

13.20.140 Billings of water, sewer and garbage service.

The monthly charge for water, sewer and garbage service shall be billed to the owner of record or purchaser of record of the serviced property, who shall be responsible for the payment thereof. It shall be the duty of each owner or purchaser of said serviced property to maintain said charges in a current paid condition.

In addition to other remedies available to the City for collection of its charges and enforcement of its liens for water, sewer and garbage services, the City shall charge a penalty on the unpaid balance of delinquent water, sewer and garbage accounts at the rate set forth in SMC 2.02.020, which shall be imposed in the following manner: The due date for water, sewer and garbage accounts is the close of business on the twentieth day of each month, and unpaid accounts become delinquent thereafter. If payment is not received by the close of business on the twentieth day of such month, the late payment shall be charged on the unpaid balance of the delinquent account until the total of such charges and penalty have been paid in full. In the event of suit by the City to collect said charges and penalty, the Court shall award the City its reasonable attorneys' fees and costs incurred thereby, together with interest at the rate of 12 percent per annum on the unpaid balance of said account charges and penalties.

Billing invoices for such accounts shall include a statement substantially conforming to the following:

> Bills are due and payable by the close of business on the 20th day of each month and become delinquent thereafter and shall be assessed a late payment penalty as set forth in SMC 2.02.020 if not paid by the close of business on the 20th day of such month.

[Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 2136 § 2, 2006; Ord. 2108 § 3, 2005; Ord. 2017 § 1, 2000; Ord. 1992 § 1, 1999; Ord. 1990 § 2, 1999; Ord. 1509 § 4, 1985. Formerly 13.20.150.]

13.20.150 Fire hydrant meters – Rental agreement – Fees.

A. General. The Department of Public Works may enter into rental agreements for use of the City's fire hydrant meters, to be used by the renter to assist in any construction project or other project approved by the City, subject to the conditions provided below.

B. Hydrant Meter Rental Agreement – Terms and Conditions. Any person desiring to rent any available fire hydrant meter shall sign a written hydrant meter rental agreement. The hydrant meter rental agreement shall provide that the meter assembly shall be used as per instructions to measure all water used, that all water used and daily rental fees shall be billed to the user on a monthly basis and such fee shall not be prorated for periods less than one-month increments. Water will be billed at the current City water usage rate. All deposits paid by the user will be retained until all bills are paid in full and the meter is returned to the City in proper working condition. Such agreement shall further provide that only City personnel are authorized to make any adjustments, repairs or modifications to the meter assembly. If the assembly is lost, damaged or altered by the user, the user shall be responsible for any necessary repair or replacement costs, which shall be deducted from the deposit. The contractor shall notify the Public Works Department upon completion of the project to retrieve the meter for final billing.

The hydrant meter rental agreement shall also require other information deemed necessary and appropriate by the Department of Public Works in order to facilitate the rentals of such hydrant meters.

C. Fees. Fees, as set forth in SMC 2.02.020, shall be charged for any hydrant meter rental agreement. All fees will be adjusted annually based upon the consumer price index. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 2134 § 1, 2006; Ord. 1992 § 1, 1999; Ord. 1944 § 1, 1997; Ord. 1855 § 1, 1994. Formerly 13.20.160.]

13.20.160 Pretreatment charges and fees.

The City may adopt reasonable fees for reimbursement of costs of setting up and operating the City's pretreatment program, which may include:

A. Fees for industrial user discharge contract applications including the cost of processing such applications.

B. Fees for monitoring, inspection and surveillance procedures including the cost of collection and analyzing a user's discharge and reviewing monitoring reports submitted by users.

C. Fees for reviewing and responding to accidental discharge procedures and construction.

D. Fees for filing appeals.

E. Other fees as the City may deem necessary to carry out the requirements contained herein. These fees relate solely to the matters covered by this program and are separate from all other fees, fines and penalties chargeable by the City.

F. Contract Fees. Contracted significant industrial users shall be charged as set forth in SMC 2.02.020, per year.

G. Sampling Fees. The expenses for annual sample analysis required by the industrial user discharge contract will be charged to the user based on current outside analytical lab fees. Any user establishing a pattern for noncompliance, or having a history of noncompliance, or suspected of being in noncompliance, may require additional monitoring visits as deemed appropriate by the City. Any additional analysis performed which detects noncompliance will be billed directly to the user.

H. A discharge authorization shall be as set forth in SMC 2.02.020 for a one-time batch discharge.

I. Contract transfer fee is located at SMC 2.02.020.

J. Contract modification fee is located at SMC 2.02.020. Contract modification fees will only be charged in a case where changes in the user's operation require the modification or when the user requests a modification.

K. High Strength Waste Fees. Users having effluent concentrations of BOD in excess of 300 mg/l and/or TSS in excess of 300 mg/l, and/or FOG concentrations in excess of 100 mg/l, may be billed a high strength waste surcharge. Surcharge rates will be established by the City and based on cost of conveyance and treatment in the POTW. All fees or charges will be collected by direct billing. Unless the City has been made aware of extenuating circumstances that would prevent prompt payment, all fees are payable within 30 days of the billing. Fees past due will be considered a violation of this chapter. Users not paying fees within 60 days of the billing period will be subject to termination of service. The City may change existing or adopt new fees. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1992 § 1, 1999. Formerly 13.20.170.]

13.20.170 Severability.

If any provision of the program is invalidated by any court of competent jurisdiction, the remaining provisions shall not be affected and shall continue in full force and effect. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1992 § 1, 1999. Formerly 13.20.180.]

13.20.180 Conflicts.

All other ordinances and parts of other ordinances inconsistent or conflicting with any part of the program are hereby repealed to the extent of the inconsistency or conflict. [Ord. 2016-18 § 3 (Exh. B), 2016; Ord. 2009-24 § 1 (Exh. A), 2009; Ord. 2205 § 1, 2008; Ord. 2181 § 1, 2007; Ord. 1992 § 1, 1999. Formerly 13.20.190.]

Chapter 13.24
REIMBURSEMENT AGREEMENTS FOR UTILITY IMPROVEMENTS

Sections:

13.24.010 Purpose.

The purpose of this chapter is to prescribe rules and regulations for exercise of the authority to enter into utility reimbursement agreements granted to the City by Chapter 35.91 RCW. [Ord. 1799 § 1, 1992.]

13.24.020 Definitions.

As used in this chapter, the terms listed below shall be defined as follows:

A. "Reimbursement agreement" means a written contract between the City and one or more property owners providing for construction of water or sewer facilities and for partial reimbursement to the party causing such improvements to be made of a portion of the costs of such improvements by owners of property benefited by the improvements, as more specifically described in Chapter 35.91 RCW.

B. "Water or sewer facilities" shall have the meaning specified in RCW 35.91.020 as it now reads or as hereafter amended.

C. "Cost of construction" shall mean those costs incurred for design, acquisition of right-of-way and/or easement, construction, materials and installation required in order to create an improvement which complies with City standards. In the event of a disagreement between the City and the applicant concerning the cost of the improvement the City Manager's determination shall be final.

D. "City Manager" shall mean the City Manager of the City of Sunnyside or his or her designated representative. [Ord. 1799 § 1, 1992.]

13.24.030 Minimum project size.

In order to be eligible for a reimbursement agreement, the estimated cost of the proposed improvement must not be less than $3,500. [Ord. 1799 § 1, 1992.]

13.24.040 Application.

An application for reimbursement agreement shall be submitted to the City at least 90 days prior to planned construction of the sewer or water facilities. The application for reimbursement agreement shall be on a form provided by the City. The application fee for a reimbursement agreement shall be $500.00, which shall be submitted to the City with the written application and shall be accompanied by:

A. Preliminary utility design drawings showing the location and design of the water or sewer facilities;

B. Itemized statement of estimated construction costs prepared, signed and sealed by a licensed civil engineer or in the form of a bid submitted by a qualified contractor (if more than one bid has been obtained, all bids must be submitted to the City);

C. Such other information as the City Manager or his or her designee determines is necessary to properly review the application. [Ord. 1799 § 1, 1992.]

13.24.050 City Manager's determination – Review by City Council.

The City Manager shall review all applications and shall make recommendation that preliminary approval be granted by the City Council only if the following requirements are met:

A. The project satisfies the minimum size requirements set forth in SMC 13.24.030.

B. The proposed improvements fall within the description of "water or sewer facilities" as those terms are described and defined in Chapter 35.91 RCW.

C. The application submitted is complete and the application fee has been paid.

D. The proposed reimbursement agreement is in the best interest of the City and its residents;

E. The applicant seeking the reimbursement agreement is the proper party to receive such reimbursement.

F. The person seeking a reimbursement agreement agrees, in writing, to convey, dedicate and deliver the completed water or sewer facilities to the City upon final completion of construction, subject to City inspection, approval and final acceptance; and the person seeking the reimbursement agreement agrees, in writing, to acquire, dedicate and convey to the City all easements and rights-of-way appurtenant to said water or sewer facilities deemed necessary and appropriate by the City, which conveyance, dedication and delivery to the City shall be in writing by deed or other written instrument deemed appropriate by the City; and the person seeking the reimbursement agreement agrees, in writing, to provide “as-built” record drawings satisfactory to the City of the completed water or sewer facilities.

In the event any of the above criteria are not satisfied, the City Manager may condition the recommendation to the City Council as necessary in order for the application to conform to such criteria or shall deny the application. In the event an application is denied, the applicant may obtain a review of the final determination by filing a request therefor with the City Clerk no later than 10 days after a copy of the final determination is mailed to the applicant at the address listed on the application. In reviewing any final determination of the City Manager denying the application, the City Council shall apply the criteria set forth above and shall uphold the decision of the City Manager unless evidence presented by the applicant clearly demonstrates that the criteria had been satisfied. [Ord. 1799 § 1, 1992.]

13.24.060 Determination of reimbursement area boundary and preliminary reimbursement fee.
In the case of all applications which are recommended by the City Manager for a preliminary approval by the City Council, the City Manager shall define the reimbursement area based upon a determination of which parcels did not contribute to the original cost of the water or sewer facility for which the reimbursement agreement applies, and which may subsequently tap into or use the same, including not only those which may connect directly thereto but also those who may connect two laterals or branches connecting thereto. An estimated amount of the reimbursement fee shall be established so that each party will pay a share of the cost of the improvements, which is proportional to the benefits which accrue to the property. In determining the proportional share of the costs of the improvements to be paid by each party, the City may use any method deemed appropriate, including, but not limited to, the front footage of the property or the square footage of the property. [Ord. 1799 § 1, 1992.]

13.24.070 Interest – When authorized – Accrual.
A. Interest charges may be included in a reimbursement agreement, subject to City Council approval, if the City Manager finds the following criteria satisfied:

1. The person seeking a reimbursement agreement has submitted an application requesting inclusion of interest in the reimbursement agreement; and

2. The person seeking a reimbursement agreement has incurred interest charges in financing the cost of construction of the water or sewer facilities, which interest charges shall not be recouped by the developer in the sale of the development and/or properties benefited by installation of the water or sewer facilities; and

3. The inclusion of interest charges in the reimbursement agreement is otherwise fair and equitable.

B. The City Manager shall review all requests for inclusion of interest charges and shall make recommendation that preliminary approval be granted to the City Council in accordance with the procedures in SMC 13.24.050, if the requirements of subsection (A) of this section are met.

In the event the City Manager determines the requirements of subsection (A) of this section are not met, the City Manager may condition the recommendation to the City Council as necessary in order for the application to conform to such criteria or shall deny the request for inclusion of interest charges. In the event the request for inclusion of interest charges is denied, the applicant may obtain review of the final determination by filing a request therefor with the City Clerk no later than 10 days after mailing a copy of the final determination to the applicant at the address listed on the application. The City Council shall review the City Manager’s determination in accordance with the provisions of SMC 13.24.050 and/or 13.24.080, as applicable.

C. If the inclusion of interest charges is approved by the City Council pursuant to SMC 13.24.080, such charges shall be deemed included in the proportionate reimbursement fee to be borne by each property within the reimbursement area boundary.

D. The interest rate to be included within any reimbursement agreement shall be six percent, per annum; provided, that interest shall not begin to accrue until two years after the date the reimbursement agreement is executed pursuant to SMC 13.24.110.

E. Accrued interest shall not exceed 50 percent of the proportionate share of construction costs borne by each property within the reimbursement area boundary. [Ord. 1799 § 1, 1992.]

13.24.080 Preliminary approval by City Council.
A. Upon recommendation of approval of the application, determination of the estimated costs of construction, request for inclusion of interest charges, the reimbursement area and fees by the City Manager, the application and supporting documentation shall be submitted to the City Council for preliminary approval. The City Council shall thereupon set at least one public hearing to determine whether or not preliminary approval should be granted, and shall cause appropriate notice of the public hearing to be published, and shall cause written notification by letter to be sent to each property owner included within the reimbursement boundary area proposed to pay a share of the costs of the improvements.

B. After public hearing, and after consideration of the application, supporting documentation, City Manager’s recommendation, and testimony presented at the public hearing, the Council shall grant preliminary approval for a reimbursement agreement, deny the application for reimbursement agreement, or condition or modify preliminary approval as the City Council determines appropriate. The City Council may set further public hearing or hearings as it deems necessary or appropriate prior to making a determination regarding the application.

C. If preliminary approval is granted, such preliminary approval shall constitute, subject to any modification or condition imposed by the City Council:

1. Acceptance and approval of the application for reimbursement agreement;

2. Approval of the reimbursement area boundary;

3. Approval of the proportionate share of construction costs to be borne by each property within the reimbursement area boundary, expressed as a percentage of the final construction costs;

4. Approval of inclusion of interest charges, if granted by the City Council. [Ord. 1799 § 1, 1992.]

13.24.090 Construction project – Acceptance by City.
A. Upon final completion of construction of the water or sewer facility, the person seeking a reimbursement agreement shall convey, dedicate and deliver the completed water or sewer facility to the City, subject to City instruction, approval and final acceptance. The person seeking the reimbursement agreement shall also acquire, dedicate and convey to the City all easements and rights-of-way appurtenant to said water or sewer facilities deemed necessary and appropriate by the City, which conveyance, dedication and delivery shall be in writing by deed or other written instrument deemed appropriate by the City. The person seeking a reimbursement agreement shall also provide to the City “as-built” record drawings satisfactory to the City of the completed water or sewer facilities.

B. Upon final completion of construction, dedication and conveyance to the City of the completed water or sewer facilities, together with necessary easements and rights-of-way and “as-built” record drawings of the completed water or sewer facilities, and upon acceptance of the completed facilities, easements and rights-of-way and “as-built” record drawings, the City Manager shall recommend to the City Council final approval and execution of a reimbursement agreement.

C. Prior to submission of recommendation by the City Manager for final approval, the person seeking the reimbursement agreement shall submit an itemized statement of actual construction costs prepared, signed and sealed by a licensed civil engineer or by affidavit of the applicant. The City Manager shall forward the itemized statement of actual construction costs to the City Council with the recommendation for final approval and execution of a reimbursement agreement. The City Manager shall also submit to the City Council a designation of actual amounts of the reimbursement fee to be assigned to each property within the reimbursement area boundary, so that each property will pay a share of the costs of the improvements which is proportional to the benefits which accrue to the property. [Ord. 1799 § 1, 1992.]

13.24.100 Final approval by City Council.
A. Upon receipt of the City Manager’s recommendation for final approval of a reimbursement agreement, together with supporting documentation and assignment of proportional reimbursement fees to the subject properties within the reimbursement area boundary, the City Council shall approve and authorize a written reimbursement agreement, subject to such conditions deemed necessary or appropriate by the City Council.

B. In the event that costs incurred by the City for engineering or other professional consultant services required in processing the application exceed the amount of the application fee, the City Manager shall so advise the City Council and Council approval shall be conditioned upon receipt of payment by the applicant of an additional amount sufficient to compensate the City for its costs in excess of the application fee.

C. Failure of the person seeking a reimbursement agreement to convey the completed water or sewer facilities to the City together with necessary easements and rights-of-way thereto, the itemized list of actual construction costs, the “as-built” record drawings of the completed project, and any other required documentation within 60 days of the date of final completion of the water or sewer project shall be grounds for denial of a reimbursement agreement. [Ord. 1799 § 1, 1992.]

13.24.110 Written agreement – Term of agreement – Recording.
A. Upon final approval of all outstanding fees to the City, the applicant shall sign a reimbursement agreement in the form supplied by the City, and the City Council shall authorize the Mayor to sign the reimbursement agreement on behalf of the City.

B. No reimbursement agreement shall provide for reimbursement for a period longer than 15 years from the date of final acceptance of the improvement by the City.

C. In order to become effective, a reimbursement agreement must be recorded with the office of the Yakima County Auditor. It shall be the sole responsibility of the beneficiary of the reimbursement agreement to record said agreement and to provide verification satisfactory to the City that said agreement has been duly recorded. A copy of the executed and recorded reimbursement agreement shall be kept on file by the City Clerk and available for public inspection. [Ord. 1799 § 1, 1992.]

13.24.120 Collection of reimbursement fees – No liability for failure to collect.
A. After the recording of a reimbursement agreement, the City shall not permit connection of any property within the reimbursement area to any water or sewer facility constructed pursuant to the reimbursement agreement, unless the share of the costs of such facilities required by the recorded agreement is first paid to the City.

B. Upon receipt of any reimbursement fees, the City shall deduct a five-percent administrative fee and remit the balance of the reimbursement fees to the party entitled to the fees pursuant to the agreement; provided, that the total administrative fee collected by the City shall not exceed $500.00 for any water or sewer facility subject to a particular reimbursement agreement. In the event that through error, the City fails to collect a required reimbursement fee prior to approval of connection to a sewer or water facility, the City shall make diligent efforts to collect such fee, but the City shall under no circumstances be obligated to make payment to the party entitled to the reimbursement, or in any other way be liable to such party, unless such reimbursement fee has actually been paid to the City. [Ord. 1799 § 1, 1992.]

13.24.130 Disposition of undeliverable reimbursement fees.
In the event that, after reasonable effort, the party to which the reimbursement fees are to be paid pursuant to a reimbursement agreement cannot be located, and upon the expiration of 180 days from the date the fees were collected by the City, the fees shall be subject to disposition pursuant to applicable unclaimed property laws of the State of Washington. [Ord. 1799 § 1, 1992.]

13.24.140 Severability.
If any section, sentence, clause or phrase of this chapter 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 chapter. [Ord. 1799 § 1, 1992.]

Chapter 16.16
CONSTRUCTION STANDARDS AND SPECIFICATIONS

Sections:

16.16.010 Construction standards for streets, sewers and storm drains, utilities and street lighting.

The City adopts the Standard Specifications for Municipal Public Works Construction, as written and promulgated by the Washington State Chapter of the American Public Works Association, and the Standard Specifications for Road, Bridge and Municipal Construction, written and promulgated by the Washington State Department of Transportation and the American Public Works Association, copies of which standard specifications shall be on file in the office of the City Clerk, and which standard specifications are guidelines for use within the City and from which variation may be approved in writing by the Director of Public Works, based upon the specific circumstances of a particular project. [Ord. 1625 § 1, 1988; Ord. 1258 § 1, 1980.]

Chapter 16.36
SHORT AND LONG SUBDIVISION – IMPROVEMENT REQUIREMENTS

Sections:

16.36.010 Conformity with provisions required.
In the planning of each subdivision regulated by the provisions of this chapter, the subdivider shall comply with the subdivision improvement requirements of this chapter. [Ord. 1257 § 2, 1980.]

16.36.020 Design and engineering plans required.
The subdivider shall submit design and engineering plans to the City for all improvements required pursuant to the provisions of this chapter. No construction of improvements shall begin until the City has approved the plans. [Ord. 1257 § 2, 1980.]

16.36.030 Conformance with design and engineering plans – Inspection of improvements.
A. A subdivider shall construct all required improvements in conformance with the approved design and engineering plans.

B. All improvements shall be inspected under the supervision of a registered engineer for conformance with the City standard specifications. [Ord. 1257 § 2, 1980.]

16.36.040 Submission of "as-built" drawings.
The subdivider shall submit to the City reproducible "as-built" drawings detailing actual construction of alleys, streets, and underground utilities which are being dedicated to the City prior to final acceptance of the improvements and release of construction bond. "As-built" drawings shall conform with the Sunnyside standards and specifications requirements. [Ord. 1257 § 2, 1980.]

16.36.050 Street improvements.
Existing or proposed streets in or adjacent to a proposed subdivision shall be improved at the expense of the subdivider by the construction of curb, gutters and pavement surface in conformance with the City standard specifications. Street widths, exclusive of curb and gutter, shall be in conformance with the Local Agency Guidelines published by the Washington State Department of Transportation as such guidelines now exist or are hereafter amended or modified, or as otherwise recommended and approved by the Director of Public Works or the Planning Commission and City Council, as applicable. [Ord. 1821 § 1, 1993; Ord. 1257 § 2, 1980.]

16.36.060 Utilities.
A. A sanitary sewer system shall be installed with a separate connection to the City sewer system for each lot and shall be constructed and installed in conformance with the City standards and specifications, and the City comprehensive water and sewer plans.

B. A complete domestic water distribution and fire protection system shall be installed and connected to the City water system. The water distribution system shall conform to the City standards and specifications, the City comprehensive water plan, and be approved by the Department of Social and Health Services.

C. Each subdivision shall provide a drainage system for the collection, control, and/or disposal of surface water runoff.

D. All new utilities shall be installed underground, except for the following:

1. Electric, pad-mounted transformers;

2. Electric transmission systems of a voltage of 15 KV or more;

3. Service meters at structures;

4. TV cable amplifiers, distribution taps;

5. Telephone pedestals and cross-connection terminals;

6. Temporary services necessary for construction.

E. All franchised utilities, including City utilities, shall have access to and use of all utility easements except special purpose easements such as those for high-voltage electrical lines.

F. Easements for unusual facilities, such as high-voltage electric lines; irrigation canals, lines and facilities; and high-capacity gas transmission lines shall be approved by the Director of Public Works. In subdivisions located in whole or in part within an irrigation district organized pursuant to Chapter 87.03 RCW, and where the lands of that

subdivision have been classified as irrigatable, easements for water rights-of-way and irrigation facilities to each parcel of land in said subdivision may be required by the irrigation district and by the City, prior to approval of the plat, with such easements and facilities being shown on the plat of the subdivision.

G. No buildings or structures, except fences, shall be permitted to be constructed on any utility easements or over any utility facilities. Masonry fences will be considered as structures, rather than fences. [Ord. 1584 § 1, 1986; Ord. 1532 §§ 2, 3, 1985; Ord. 1257 § 2, 1980.]

16.36.070 Street lights.
The subdivider shall install at his expense street lights in accordance with the standard specifications of the City. [Ord. 1257 § 2, 1980.]

16.36.080 Sidewalks.
Sidewalks shall be constructed of concrete in conformance with the City standards and specifications. [Ord. 1257 § 2, 1980.]

16.36.090 Improvements for flood, inundation or swamp conditions.
Land which the City Council or City Planning Commission has found to be unsuitable for development due to flood, inundation, insufficient drainage, swamp conditions, or any other condition likely to be harmful to the health, safety and welfare of future residents shall be provided with protective improvements approved by the Director of Public Works and which are accepted by the administrator. [Ord. 1257 § 2, 1980.]

City of SUNNYSIDE WASHINGTON

8

Water Rights Certificates

HLA Engineering and Land Surveying, Inc.

S. F. No. 7362—6-45—1M. 9327.

CERTIFICATE RECORD NO. 1 PAGE NO. 33-D UNDER DECLARATION OF CLAIM NO. 56

STATE OF WASHINGTON, COUNTY OF Yakima

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and the rules and regulations of the State Supervisor of Hydraulics thereunder.

THIS IS TO CERTIFY *That* CITY OF SUNNYSIDE

of Sunnyside, Washington *has filed*

in the office of the State Supervisor of Hydraulics of Washington Declaration of Claim No. 56

to withdraw ground waters of the State from a Pump Well,

located within Lot 14, Block 41 of City of Sunnyside, Washington

for the purpose of Municipal supply and commercial use

The right to the use of said ground waters has been sustained and approved by the Supervisor of Hydraulics in accordance with Chapter 263, Laws of Washington for 1945, and is hereby entered of record in Volume 1 *of Ground Water Certificates at page* 33-D*; the right approved has a priority of* the year 1909*; the amount of water which the Declarant is entitled to withdraw for the aforesaid purpose is limited to the amount actually beneficially used and shall not exceed* 420 *gallons per minute;* 347 *acre-feet per year; and is appurtenant to the following described lands or place of use:*

City of Sunnyside, Yakima County, Washington

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Hydraulics affixed this 12th *day of* March, *19*46

RODNEY A. RYKER
State Supervisor of Hydraulics.

Chas. A. Hamet

Declaration of Claim No. 56

CERTIFICATE OF GROUND WATER RIGHT

Recorded in the office of State Supervisor of Hydraulics, Olympia, Washington, in Book No. 1 *of Ground Water Right Certificates, on page* 33-D *on the* 12th *day of* March, *19*46.

STATE OF WASHINGTON,
County of Yakima } *ss.*

I certify that the within was received and duly recorded by me in Volume ..... *of Book of Water Right Certificates, page* ..... *on the* ..... *day of* ....., *19*.....

.....

STATE PRINTING PLANT, OLYMPIA, WASHINGTON

S. F. No. 7362—6-45—1M. 9327.

CERTIFICATE RECORD NO. 1 PAGE NO. 34-D UNDER DECLARATION OF CLAIM NO. 57

STATE OF WASHINGTON, COUNTY OF Yakima

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and the rules and regulations of the State Supervisor of Hydraulics thereunder.

THIS IS TO CERTIFY *That* CITY OF SUNNYSIDE

of Sunnyside, Washington *has filed in the office of the State Supervisor of Hydraulics of Washington Declaration of Claim No.* 57 *to withdraw ground waters of the State from a* Pump Well, *located within* Lot 14, Block 41 of City of Sunnyside, Washington

for the purpose of Municipal supply, commercial and manufacturing use

The right to the use of said ground waters has been sustained and approved by the Supervisor of Hydraulics in accordance with Chapter 263, Laws of Washington for 1945, and is hereby entered of record in Volume 1 *of Ground Water Certificates at page* 34-D*; the right approved has a priority of* September 1929*; the amount of water which the Declarant is entitled to withdraw for the aforesaid purpose is limited to the amount actually beneficially used and shall not exceed* 230 *gallons per minute;* 62 *acre-feet per year; and is appurtenant to the following described lands or place of use:*

City of Sunnyside, Yakima County, Washington

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Hydraulics affixed this 12th *day of* March, 19 46

RODNEY KYNER
State Supervisor of Hydraulics.

By: CHAS. H. BARTHOLET Deputy

Declaration of Claim No. 57

CERTIFICATE OF GROUND WATER RIGHT

Recorded in the office of State Supervisor of Hydraulics, Olympia, Washington, in Book No. 1 *of Ground Water Right Certificates, on page* 34-D *on the* 12th *day of* March, *19* 46.

STATE OF WASHINGTON,
County of Yakima } *ss.*

I certify that the within was received and duly recorded by me in Volume ..... *of Book of Water Right Certificates, page* ..... *on the* ..... *day of* ....., *19*.....

.....

STATE PRINTING PLANT, OLYMPIA, WASHINGTON

S. F. No. 7362—6-45—1M. 9327.

CERTIFICATE RECORD NO. 1 PAGE NO. 35-D UNDER DECLARATION OF CLAIM NO. 58

STATE OF WASHINGTON, COUNTY OF Yakima

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and the rules and regulations of the State Supervisor of Hydraulics thereunder.

THIS IS TO CERTIFY *That* CITY OF SUNNYSIDE

of Sunnyside, Washington *has filed*

in the office of the State Supervisor of Hydraulics of Washington Declaration of Claim No. 58

to withdraw ground waters of the State from a Pump Well,

located within Lot 8, Block 1 of Tuell & Irving Subdivision, City of Sunnyside, Washington,

for the purpose of Municipal supply and commercial use

The right to the use of said ground waters has been sustained and approved by the Supervisor of Hydraulics in accordance with Chapter 263, Laws of Washington for 1945, and is hereby entered of record in Volume 1 *of Ground Water Certificates at page* 35-D*; the right approved has a priority of* June 1942*; the amount of water which the Declarant is entitled to withdraw for the aforesaid purpose is limited to the amount actually beneficially used and shall not exceed* 420 *gallons per minute;* 347 *acre-feet per year; and is appurtenant to the following described lands or place of use:*

City of Sunnyside, Yakima County, Washington

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Hydraulics affixed this 12th *day of* March, *19* 46

RODNEY RYKER
State Supervisor of Hydraulics.

By: CHAS. J. BARTHOLET, Deputy

Declaration of Claim No. 58

CERTIFICATE OF GROUND WATER RIGHT

Recorded in the office of State Supervisor of Hydraulics, Olympia, Washington, in Book No. 1 *of Ground Water Right Certificates, on page* 35-D *on the* 12th *day of* March, *1946*

STATE OF WASHINGTON,
County of Yakima } *ss.*

I certify that the within was received and duly recorded by me in Volume ..... *of Book of Water Right Certificates, page* ..... *on the* ..... *day of* ....., *19*.....

.....

STATE PRINTING PLANT, OLYMPIA, WASHINGTON

S. F. No. 7361—6-45—5C. 9326.

CERTIFICATE RECORD NO. 1 PAGE NO. 49-A

STATE OF WASHINGTON, COUNTY OF Yakima

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and the rules and regulations of the State Supervisor of Hydraulics thereunder.

THIS IS TO CERTIFY *That* CITY OF SUNNYSIDE

of Sunnyside, Washington, *has made proof to the satisfaction of the State Supervisor of Hydraulics of Washington, of a right to the use of the ground waters of a* Well

located within Lot 11, Block 1 of Tuel & Irvings Subdivision, City of Sunnyside

for the purpose of Municipal supply, industrial and manufacturing use

under Ground Water Permit No. 50 *issued by the State Supervisor of Hydraulics, and that said right to the use of said ground waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Hydraulics of Washington and entered of record in Volume* 1 *at page* 49-A *; that the quantity of ground water to which such right is entitled and hereby confirmed for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed* 1000 gallons per minute; 1000 acre-feet per year; That the right hereby confirmed dates from December 12, 1945

~~*for irrigation of* xxxxxxxxxxxxxxx *acres.*~~

A description of the lands under such right to which the ground water hereby confirmed is appurtenant, and the place where such water is put to beneficial use, is as follows:

City of Sunnyside, Yakima County, Washington

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Hydraulics affixed this 13th *day of* June, 1947

RODNEY RYKER
State Supervisor of Hydraulics.

By Chas. J. Barthelet

CHAS. J. BARTHOLET, Deputy

Ground Water Permit No. 50

CERTIFICATE OF GROUND WATER RIGHT

Recorded in the office of the State Supervisor of Hydraulics, Olympia, Washington, in Book No. 1 *of Ground Water Right Certificates, on page* 49-A*, on the* 13th *day of* June, 194 7

STATE OF WASHINGTON,
County of Yakima } *ss.*

I certify that the within was received and duly recorded by me in Volume ..... of Book of Water Right Certificates, at page ....., on the ..... day of ....., 19 .....

.....

STATE PRINTING PLANT, OLYMPIA, WASHINGTON

2553

S. F. No. 7361—3-53—3M. 34100.

CERTIFICATE RECORD NO. 6 PAGE NO. 2553-A

STATE OF WASHINGTON, COUNTY OF Yakima

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the State Supervisor of Water Resources thereunder.

THIS IS TO CERTIFY *That* CITY OF SUNNYSIDE, WASHINGTON

~~of~~ , *has made proof to the satisfaction of the State Supervisor of Water Resources of Washington, of a right to the use of the ground waters of a* well *located within* SW¼SW¼NW¼, sec. 25, T.10 N., R.22 E.W.M.

for the purpose of municipal supply *under and subject to provisions contained in Ground Water Permit No.* 3099 *issued by the State Supervisor of Water Resources and that said right to the use of said ground waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Water Resources of Washington and entered of record in Volume* 6 *at page* 2553-A *; that the right hereby confirmed dates from* July 10, 1953 *; that the quantity of ground water under the right hereby confirmed for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed* 1500 gallons per minute; 720 acre-feet per year for municipal supply. / ~~for irrigation of xxxxxxxxxxxxxxxxxx acres~~

A description of the lands to which such ground water right is appurtenant, and the place where such water is put to beneficial use, is as follows:

City of Sunnyside, Yakima County, Washington.

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Water Resources affixed this 7th *day of* May, *1956.*

M. J. Walker

State Supervisor of Water Resources.

ENGINEERING DATA
O.K. RHR

2553

Ground Water Permit No......

CERTIFICATE OF GROUND WATER RIGHT

Recorded in the office of the State Supervisor of Water Resources, Olympia, Washington, in Book No. ..... *of Ground Water Right Certificates, on page* ....., *on the* ..... *day of* ....., *195*.....

STATE OF WASHINGTON,
County of ..... } *ss.*

I certify that the within was received and duly recorded by me in Volume ..... *of Book of Water Right Certificates, at page* ....., *on the* ..... *day of* ....., *19*.....

.....

STATE PRINTING PLANT OLYMPIA, WASHINGTON

W. P. No. 7341—5-60—3M. 6276.

CERTIFICATE RECORD NO. 30 PAGE NO. 4795-A

STATE OF WASHINGTON, COUNTY OF Yakima

Certificate of Ground Water Right

Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the State Supervisor of Water Resources thereunder.

THIS IS TO CERTIFY *That* CITY OF SUNNYSIDE

of Sunnyside, Washington, *has made proof to the satisfaction of the State Supervisor of Water Resources of Washington, of a right to the use of the ground waters of a* well (No. 6)

located within NW¼SW¼

Sec. 20, *Twp.* 10 *N., R.* 23 E. W. M.,

for the purpose of Municipal supply

under and subject to provisions contained in Ground Water Permit No. 6173 *issued by the State Supervisor of Water Resources and that said right to the use of said ground waters has been perfected in accordance with the laws of Washington, and is hereby confirmed by the State Supervisor of Water Resources of Washington and entered of record in Volume* 30 *at page* 4795-A; *that the right hereby confirmed dates from* September 24, 1962; *that the quantity of ground water under the right hereby confirmed for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed* 1,570 gallons per minute; 1,600 acre-feet per year for Municipal supply.

Special provisions required by the Supervisor of Water Resources: Rights established under this certificate shall be fully supplemental to those water rights previously established for Wells 1 through 5, inclusive.

A description of the lands to which such ground water right is appurtenant:

City of Sunnyside, Washington

The right to the use of the ground water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in Sections 6 and 7, Chapter 122, Laws of 1929.

WITNESS the seal and signature of the State Supervisor of Water Resources affixed this 6th *day of* May, 1964.

M. O. Walker

State Supervisor of Water Resources.

...DATA

OK

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
June 28, 1973	G3-21329	G3-21329P	G3-21329C

NAME
CITY OF SUNNYSIDE

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
719 Edison Avenue	Sunnyside	Washington	98944

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined, and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology, and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington, and is hereby confirmed by the Department of Ecology and entered of record as shown.

PUBLIC WATER TO BE APPROPRIATED

SOURCE
a well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	950	1500

QUANTITY, TYPE OF USE, PERIOD OF USE
950 gallons per minute; 1500 acre feet per year continuously for municipal supply.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
400 feet East and 645 feet North from the West quarter corner of Section 36.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
SW¼NW¼	36	10	22 E.	37	Yakima

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

City of Sunnyside, Washington.

PROVISIONS

Certificate holder shall maintain an access port as described in Ground Water Bulletin No. 1.

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.020.

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in RCW 90.14.180.

Given under my hand and the seal of this office at Yakima, *Washington, this* 5th *day of* September, *19* 70.

Department of Ecology

by Russell K. Taylor

Russell K. Taylor, Regional Manager

ENGINEERING DATA

OK

1a

FOR COUNTY USE ONLY

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

SUPERSEDING PERMIT

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON
Supersedes Permit ISSUED June 20, 1995

☐ Surface Water (Issued in accordance with the provisions of Chapter 117, Laws of Washington for 1917, and amendments thereto, and the rules and regulations of the Department of Ecology.)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263, Laws of Washington for 1945, and amendments thereto, and the rules and regulations of the Department of Ecology.)

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
December 21, 1992	G4-31581	G4-31581P	

NAME
City of Sunnyside

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
818 E. Edison	Sunnyside	Washington	98944-2206

The applicant is hereby granted a permit to appropriate the following public waters of the State of Washington, subject to existing rights and to the limitations and provisions set herein.

PUBLIC WATERS TO BE APPROPRIATED

SOURCE
Six (6) wells

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE-FEET PER YEAR
	2000	3230

QUANTITY, TYPE OF USE, PERIOD OF USE
For continuous municipal supply, 2,906 acre-feet per year (primary) additive and 324 acre-feet per year (supplemental) non-additve.

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL

1. Existing Well No. 3 or Proposed Well: Within SE¼NW¼ of Section 25, T. 10 N., R., 22 E.W.M., approximately 1150 feet north and 350 feet west of the center of Section 25.
2. Existing Well No. 6: Within NW¼SW¼ of Section 30, T. 10 N., R. 23 E.W.M., approximately 920 feet south and 20 feet east of the west quarter corner or Section 30.
3. Existing Well No. 7: Within SW¼NW¼ of Section 36, T. 10 N., R. 22 E.W.M., approximately 650 feet north and 450 feet east of the west quarter corner of Section 36.
4. Proposed Well: Within SW¼NE¼ of Section 29, T. 10 N., R. 23 E.W.M., approximately 450 feet north and 120 feet east of the center of Section 29.
5. Proposed Well: Within NE¼SW¼ of Section 32, T. 10 N., R. 23 E.W.M., approximately 900 feet south and 1400 feet east of the west quarter corner of Section 32.
6. Proposed Well: Within N½NE¼ of Section 31, T. 10 N., R. 23 E.W.M., approximately 1100 feet south and 900 feet east of the north quarter corner of Section 31; OR AN ALTERNATIVE SITE LOCATED approximately 1100 feet south and 1900 feet east of the north quarter corner of Section 31.

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N.	RANGE, (E. OR W.) W.M.	W.R.I.A.	COUNTY
		10	22 E & 23 E	37	Yakima

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Within the service area of the City of Sunnyside, Washington, municipal water supply system.

DESCRIPTION OF PROPOSED WORKS

Three existing wells (City Wells Nos. 3, 6, and 7) and three proposed wells to supply the city distribution system.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	WATER PUT TO FULL USE BY THIS DATE:
Begun	February 1, 2017	February 1, 2017

PROVISIONS

Completion of Construction and Proof of Appropriation (full use) of the recommended Permit are due February 1, 2017 unless further extended for good cause and with reasonable diligence being shown. Progress report describing system improvements and water usage under this authorization are required at six year intervals to coincide with the Comprehensive Water System Plan updates, with the first report due by February 1, 2002.

Volume of up to a total of 3230 acre-feet per year is dependent on actual (perfected) use, and the determined quantity of existing ground water rights as follows: 2,138 acre-feet per year is additive (primary) and 324 acre-feet per year is non-additive (supplement) to currently existing ground water rights so that all primary (additive) water rights do not exceed 5044 acre-feet per year. [Currently existing ground water rights are those rights existing under the City's Certificate Nos. 33-D, 34-D, 35-D, 49-A, 2553-A, 4795-A and G3-21323C.]

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.

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 use data shall be recorded weekly. The maximum rate of diversion/withdrawal and the annual total volume shall be submitted to Ecology by January 31st of each calendar year.

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 of measurement, maximum rate of diversion including units of measurement, Department of Health WFI water system number and source number(s), purpose of use, 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.

All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under Chapter 18.104 RCW (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells).

For new well construction, the casing shall be set or placed (not driven) at least 20 feet in to the first solid, unfractured, nonporous, nonvesicular basalt flow of the Pomona Member of the Saddle Mountains Basalt Formation. The well annulus shall be pressure grouted using cement grout as a sealing agent from the bottom of the casing to land surface and the annulus shall be at least four inches greater in diameter than the permanent casing. The well shall be restricted to a depth corresponding to the top of the Priest Rapids Member of the Wanapum Basalt Formation.

After completion of construction and clarification of the water by pumping or other means, the well shall be video scanned providing a clear, continuous image from the top of the well to the bottom. The video scan shall be provided to and reviewed by the Central Regional Office Water Resources Program of the Department of Ecology before the production pump is installed.

For the purpose of making water level measurements, installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required for each well. An air line and gage are also required for each well. The air line shall be constructed of ¼ inch minimum diameter galvanized steel pipe, or comparable material if pre-approved by the department. The air line shall be equipped with a standard tire valve. Distance from land surface to the bottom end of the air line shall be clearly posted at the well site, accurate to 0.5 feet or less. The air line, access port, and all well equipment shall be installed and maintained to provide access for measurement of water levels. For existing wells, installation of air lines may be delayed until such time as the pump is removed for maintenance or other reason.

A proof inspection will be conducted prior to final certificate issuance. The certificate will reflect the extent of the project perfected within the limitations of the permit. Aspects will include as appropriate the source(s), system instantaneous capacity, beneficial use(s), annual quantity, acreage, home services designed, place of use, and satisfaction of provisions.

The City shall implement an approved water conservation plan(s) as described in "Conservation Planning Requirements" [Ecology Publication No. 94-24, Health PUB 331-008, dated January 2005.

This permit shall be subject to cancellation should the permittee fail to comply with the above development schedule and/or to give notice to the Department of Ecology on forms provided by that Department documenting such compliance.

Given under my hand the seal of this office at Yakima, Washington, this 30th day of September 2005.

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

Department of Ecology

DATA REVIEW

OK cem

by _____

Robert F. Barwin, Section Manager

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 W Yakima Ave, Ste 200 • Yakima, WA 98902-3452 • (509) 575-2490

July 7, 2008
CERTIFIED MAIL
[7007 2560 0001 7674 5593]

City of Sunnyside
Attn: Jim Bridges
818 E. Edison Avenue
Sunnyside, WA 98944-2206

RE: Water Right Change Application No. CG4-GWC2553-A@1 (YAKI-07-21)

In accordance with RCW 90.80.080 the Department of Ecology (Ecology) has reviewed the Record of Decision (ROD), Report of Examination (ROE), and all comments, protests, objections and other relevant information submitted by the Yakima County Water Conservancy Board for the above referenced application for change.

Ecology has **modified** the decision of the Board and the proposed change/transfer of water right is **approved** under the following conditions:

Summary of Ecology's Final Order

MAXIMUM CUB FT/ SECOND	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR	TYPE OF USE, PERIOD OF USE
	1,500	720	Municipal use, year round

SOURCE	TRIBUTARY OF (IF SURFACE WATER)
Up to 4 wells	

¼	¼	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY.
NW	NE	27	10	22 E.W.M.	37	Yakima
SE	NW	25	10	22 E.W.M.	37	Yakima
SW	NW	19	10	23 E.W.M.	37	Yakima
	E1/2	31	10	23 E.W.M.	37	Yakima

AT A POINT LOCATED:

Well 12: NW¼ NE¼ of Section 27, T.10 N., R. 22 E.W.M.
Well 11: SE¼ NW¼ of Section 25, T.10 N., R. 22 E.W.M.
Alternate Location: SW¼ NW¼ of Section 19, T.10 N., R. 23 E.W.M.
Alternate Location: E½ of Section 31, T.10 N., R. 23 E.W.M.

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED AS APPROVED BY THE BOARD

The place of use (POU) of this water right is the service area described in the most recent Water System Plan/Small Water System Management Program approved by the Washington State Department of Health, so long as City of Sunnyside is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revising the place of use of this water right.

FILE COPY

Ecology has **MODIFIED** the decision of the Board as follows:

1.) The following are modified on page 1 of the Board's decision:
- The water right document number is replaced with: CG4-GWC2553-A
- The water right priority date is replaced with: July 10, 1953
- The Change Proposed entry is replaced with "Add point of diversion/withdrawal"

2.) The Table entitled Existing Right (Tentative Determination) is modified as follows:

MAXIMUM CUB FT/ SECOND	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR	TYPE OF USE, PERIOD OF USE
	1,500	720	Municipal Use, year round

SOURCE	TRIBUTARY OF (IF SURFACE WATER)
Up to 3 wells	

¼	¼	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY.
SE	NW	25	10	22 E.W.M.	37	Yakima
SW	NW	19	10	23 E.W.M.	37	Yakima
	E1/2	31	10	23 E.W.M.	37	Yakima

AT A POINT LOCATED:
Well 11: SE¼ NW¼ of Section 25, T.10 N., R. 22 E.W.M.
Alternate Location: SW¼ NW¼ of Section 19, T.10 N., R. 23 E.W.M.
Alternate Location: E½ of Section 31, T.10 N., R. 23 E.W.M.

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED AS APPROVED BY THE BOARD

The place of use of this water right is the service area described in the most recent Water System Plan approved by the Washington State Department of Health, so long as the City of Sunnyside is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386 may have the effect of revision the place of use of this water right. If the criteria in RCW 90.03.386(2) are not met, the place of use of this water right reverts to the last place of use described by Ecology in a water right authorization.

PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE,

3.) The following paragraph is added at the beginning of the Background section on page 2 of the Board's decision:

"The subject change application (CG4-GWC2553-A@1, YAKI-07-21) proposes to add one additional point of withdrawal (POW) to Ground water Certificate No. 2553-A as amended in June of 2005 by Change Authorization No. CG4-GWC2553-A (YAKI-04-14). Change Authorization No. CG4-GWC2553-A (YAKI-04-14) changed the POW from an existing well (Well 5), located in the SW¼ NW¼ of Section 25, T. 10 N., R. 22 E.W.M., to up to three wells located at the sites described in the Existing Right (Tentative Determination) table. As a result, Well 5 is no longer authorized for use under Change Authorization No. CG4-GWC2553-A. Up to three wells including Well ll are authorized at any of three locations under the change authorization, and Change Application No. CG4-GWC-2553A@1 proposes to add a fourth POW, referred to as Well 12."

4.) The first sentence of Paragraph 2 of the Background section is modified to read as follows:
"The reason that the City of Sunnyside requested the change is that the original point of withdrawal under Ground Water Certificate No. 2553-A, Well 5, has been…."

5.) The first subheading under the Background section on page 2 of the Board's decision is modified from "*Attributes of the water right as currently documented*" to read "*Attributes of the original water right as documented for Ground Water Certificate No. 2553-A*"

6.) On page 2 of the Board's decision, the "Priority date, first use: November 13, 1953" is deleted and replaced with "Priority date, first use: July 10, 1953."

7.) The *Previous changes* subsection in the Background section on page 2 of the Board's decision is modified from "Not Applicable" to "On June 29, 2005, Ecology issued a Modification Order on the Yakima County Conservancy Board's Record of Decision for Change Authorization No. CG4-GWC2553-A (YAKI 04-14), amending Ground Water Certificate No. 2553-A."

8.) The table on page 3 of the Board's decision is modified as follows:
- The "Priority date, first use:" entry is modified to "July 10, 1953."
- The "Source:" entry is modified from "Well 5, Well 11" to "Up to three wells"
- The "point of diversion/withdrawal:" entry is modified to "SE¼ NW¼ of Section 25, Township 10 N., Range 22 E.W.M.; SW¼ NW¼ of Section 19, Township 10 N., Range 23 E.W.M.; and E½ of Section 31, Township 10 N., Range 23 E.W.M."

9.) The second paragraph of the Hydrogeologic Setting on page 7 of the Board's decision is modified such that the word "Mabton" is deleted from the 6th bullet.

10.) The following sentence is added to the *Impairment* subsection starting on page 9 of the Conclusions for the Board's decision: "The following section includes the impairment analysis for Change Authorization No. CG4-GWC2553-A as background information, and the "Move to Monson Property Site" section presents the conclusions from the impairment analysis for the subject change proposal (CG4-GWC2553-A@1)."

11.) The first sentence of the Decision section on page 10 of the Board's decision is modified from: "The board's decision is that application No. CG4-GWC2553-A@1 (YAKI-07-21) be approved for change of point of withdrawal from the current Well 5 POW to any one of four proposed alternate sites." and replaced with: "The board's decision is that application CG4-GWC2553-A@1 (YAKI-07-21) be approved to add an additional point of withdrawal to the up to three points of withdrawal under Change Authorization No. CG4-GWC2553-A (YAKI-04-14)."

12.) Provision No. 2 of the Board's decision is deleted and replaced by:

"The wells shall be restricted to the Upper Ellensburg Formation Aquifer. The wells shall be constructed with solid casing to the bottom of the confining layer between

Mcg-Shallow and Mcg-Deep to a depth of at least 275 feet for Well 12 and at least 300 feet for Well 11 and the two alternate sites. Each well shall terminate at or above the basalt basement, which should occur approximately 400 to 450 feet below ground surface.

Each well casing annulus shall be sealed with neat cement, neat cement grout, or other high solids bentonite corresponding to the required solid casing depth of at least 275 feet at Well 12 and at least 300 ft at Well 11 and the two alternate locations. The sealing material shall be placed in the annulus by pumping to seal the entire annulus from the bottom of the casing to the land surface. The well annulus shall be at least four (4) inches greater in diameter than the permanent casing. Such casing and sealing shall be performed in accordance with the provisions and standards of WAC Chapter 172-160-075 through Chapter 173-160-305 (Minimum Standards for Construction and Maintenance of Water Wells).

A written sealing plan shall be prepared prior to initiation of construction and retained on site in accordance with WAC 173-160-251."

13.) The first sentence of Provision No. 3 of the Board's decision is deleted and replaced by:

"Installation and maintenance of an access port as described in WAC 173-160- 291(3) is required. In addition to the required access port, the applicant shall install and maintain, in operating condition, an airline and pressure gage. The pressure gage shall be equipped with a standard tire valve and placed in a location accessible to Department of Ecology personnel. The airline shall extend from land surface to the top of the pump bowls and the total airline length shall be reported to the Department of Ecology upon completion of the pump system."

The remainder of the Board's Provision No. 3 is retained.

14.) Provision Nos. 4, 5, and 6 of the Board's decision are deleted and replaced by:

- "An approved measuring device shall be installed and maintained for each of the sources authorized by this water right in accordance with the rule "Requirements for Measuring and Reporting Water Use", WAC 173-173. http://www.ecy.wa.gov/programs/wr/measuring/measuringhome.html"

- "Water use data shall be recorded daily and maintained by the property owner for a minimum of five years. The maximum weekly rate of withdrawal and the daily total volume shall be submitted to the Department of 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."

- "The following information shall be included with each submittal of water use data: owner, contact name (if different from owner), mailing address, daytime phone number, WRIA, period of use, Permit/Certificate/Claim No., source name, annual quantity used including units, maximum rate of withdrawal including units, daily meter readings including units, peak weekly withdrawal rate including units, and well tag number. In the

future, the Department of Ecology may require additional parameters to be reported or more frequent reporting. The Department of Ecology prefers web based data entry, but does accept hard copies or emailed data reports in spreadsheet or word processing format. The Department of Ecology will provide forms and electronic data entry information. http://www.ecy.wa.gov/pubs/ecy070170.pdf"

15.) The following is added to the Board's provision No. 9:
"Any well which is unusable, abandoned, or whose use has been permanently discontinued, or which is in such disrepair that its continued use is impractical or is an environmental, safety or public health hazard shall be decommissioned."

16.) The following provisions are added to the Board's decision:

- "The annual quantity of 720 ac-ft is non-additive. The total annual withdrawal quantity from Ground Water Certificate No. 2553-A and Groundwater Declaration Nos. 33, 34, 35, and Ground Water Certificate No. 49 is 1756 ac-ft."

- "The additional well (Well 12) shall be drilled no closer than 100 feet from the nearest well completed in the Upper Ellensburg Formation."

- "If the criteria in RCW 90.03.386(2) are not met the place of use of this water right reverts to the service area described in the Water System Plan/Small Water System Management Program most recently approved after September 9, 2003. If the criteria in RCW 90.03.386(2) are not met and no Water System Plan/Small Water System Management Program has been approved after September 9, 2003, the place of use reverts to the last place of use described by Ecology in a water right authorization."

- "All wells shall be tagged with a Department of Ecology unique well identification number. If you have an existing well and it does not have a tag, please contact the well-drilling coordinator at the regional Department of Ecology office issuing this decision. This tag shall remain attached to the well. If you are required to submit water measuring reports, reference this tag number."

17.) The development schedule is modified as follows:
a. Begin Project by: October 1, 2008;
b. Complete Project by: June 30, 2010;
c. Complete Change and put water to full use by: January 31, 2011.

You have a right to appeal this order. To appeal this you must:

- File your appeal with the Pollution Control Hearing Board within 30 days of the "date of receipt" of this document. Filing means actual receipt by the Board during regular office hours.
- Serve your appeal on the Department of Ecology within 30 days of the "date of receipt" of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). "Date of receipt" is defined at RCW 43.21B.001(2).

Be sure to do the following:

- Include a copy of this document that you are appealing with your Notice of Appeal.
- Serve and file your appeal in paper form; electronic copies are not accepted.

1. To file your appeal with the Pollution Control Hearings Board:

Mail appeal to:	OR	Deliver your appeal in person to:
Pollution Control Hearings Board PO Box 40903 Olympia WA 98504-0903		Pollution Control Hearings Board 4224 – 6th Ave SE Rowe Six, Bldg 2 Lacey WA 98503

2. To serve your appeal on the Department of Ecology:

Mail appeal to:	OR	Deliver your appeal in person to:
Department of Ecology Appeals Coordinator PO Box 47608 Olympia WA 98504-7608		Department of Ecology Appeals Coordinator 300 Desmond Dr SE Lacey WA 98503

3. And send a copy of your appeal packet to:

G. Thomas Tebb, L.E.G.
Department of Ecology
15 W Yakima Ave Ste 200
Yakima WA 98902-3452

For additional information visit the Environmental Hearings Office Website: http://www.eho.wa.gov
To find laws and agency rules visit the Washington State Legislature Website: http://www.leg.wa.gov/CodeReviser

G. Thomas Tebb, L.E.G.
Section Manager
Water Resources Program
Central Region Office

GTT:IE:gh
080713

Enclosures: Your Right to Be Heard
Water Measurement Requirements
Construction Notice

cc: Janet Rajala, Department of Ecology, ERO
Yakima County Water Conservancy Board
Philip Rigdon, Yakama Nation

For Ecology Use Only

Received: Date Received

DEPT OF ECOLOGY Received MAY 14 2008 CENTRAL REGION OFFICE

Reviewed by: _____

Date Reviewed: _____

Yakima County
WATER CONSERVANCY BOARD
Application for Change/Transfer
Record of Decision

Applicant: City of Sunnyside

Application Number: YAKI-07-21

This record of decision was made by a majority of the board at an open public meeting of the Yakima County Water Conservancy Board held on the 7th day of May, 2008.

☒ **Approval:**

The Yakima County Water Conservancy Board hereby **grants** conditional approval for the water right transfer described and conditioned within the report of examination dated the _____ day of _____, 2008 and submits this record of decision and report of examination to the Department of Ecology for final review.

☐ **Denial:**

The Yakima County Water Conservancy Board hereby **denies** conditional approval for the water right transfer as described within the report of examination on the _____ day of _____, 2008 and submits this record of decision to the Department of Ecology for final review.

Signed:

_____ Date: 5-7-08

Jeff Stevens, Chair
Yakima County Water Conservancy Board

Approve ☒
Deny ☐
Abstain ☐
Recuse ☐

_____ Date: 5-7-08

Dave Brown, Member
Yakima County Water Conservancy Board

Approve ☒
Deny ☐
Abstain ☐
Recuse ☐

_____ Date: 5-7-08

Mark Reynolds, Member
Yakima County Water Conservancy Board

Approve ☒
Deny ☐
Abstain ☐
Recuse ☐

_____ Date: _____

Dave England, Alternate Voting Member
Yakima County Water Conservancy Board

Approve ☐
Deny ☐
Abstain ☐
Recuse ☐

Mailed to the Department of Ecology Central Regional Office of Ecology, via certified mail, and other interested parties on _____.

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Yakima County
WATER CONSERVANCY BOARD
Application for Change/Transfer
OF A RIGHT TO THE BENEFICIAL USE OF THE PUBLIC WATERS OF THE STATE OF WASHINGTON

DEPT OF ECOLOGY Received MAY 14 2008 CENTRAL REGION OFFICE

Report of Examination

☐ Surface Water ☒ Ground Water

DATE APPLICATION RECEIVED	WATER RIGHT DOCUMENT NUMBER (i.e., claim, permit, certificate, etc.)	WATER RIGHT PRIORITY DATE	BOARD-ASSIGNED CHANGE APPLICATION NUMBER
December 12, 2007	2553-A	November 13, 1953	YAKI-07-21

NAME: City of Sunnyside

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
818 East Edison Avenue	Sunnyside	WA	98944

Changes Proposed: ☐ Change purpose ☐ Add purpose ☐ Add irrigated acres ☒ Change point of diversion/withdrawal ☐ Add point of diversion/withdrawal ☐ Change place of use ☐ Other (Temporary, Trust, Interties, etc.)_____

SEPA
The board has reviewed the provisions of the State Environmental Policy Act of 1971, Chapter 43.21C RCW and the SEPA rules, chapter 197-11 WAC and has determined the application is: ☒ Exempt ☐ Not exempt

BACKGROUND AND DECISION SUMMARY

Existing Right (Tentative Determination)

MAXIMUM CUB FT/ SECOND	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR	TYPE OF USE, PERIOD OF USE
	1,500	720	Municipal, year round

SOURCE	TRIBUTARY OF (IF SURFACE WATER)
Well 5	

AT A POINT LOCATED: PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY.
	SW	NW	25	10	22E	37	Yakima

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS USED

Area served by the City of Sunnyside

PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE,

Proposed Use

MAXIMUM CUB FT/ SECOND	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR	TYPE OF USE, PERIOD OF USE
	1,500	720	Municipal, year round

SOURCE	TRIBUTARY OF (IF SURFACE WATER)
Well 11 and Well 12	

AT A POINT LOCATED: PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY.
	SE	NW	25	10	22E	37	Yakima
Alternate Location	SW	NW	19	10	23E	37	Yakima
Alternate Location	E ½		31	10	23E	37	Yakima
Alternate Location	NW	NE	27	10	22E	37	Yakima

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

Within the service area of the City of Sunnyside municipal water system.

PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE,

Board's Decision on the Application

MAXIMUM CUB FT/ SECOND	MAXIMUM GAL/MINUTE	MAXIMUM ACRE-FT/YR	TYPE OF USE, PERIOD OF USE
	1,500	720	Municipal, year round

SOURCE	TRIBUTARY OF (IF SURFACE WATER)
Well 11 and Well 12	

AT A POINT LOCATED: PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE	WRIA	COUNTY.
	SE	NW	25	10	22E	37	Yakima
Alternate Location	SW	NW	19	10	23E	37	Yakima
Alternate Location	E ½		31	10	23E	37	Yakima
Alternate Location	NW	NE	27	10	22E	37	Yakima

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED AS APPROVED BY THE BOARD

The place of use of this water right is the service area described in the most recent Water System Plan approved by the Washington State Department of Health, so long as the City of Sunnyside is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386(2) may have the effect of revising the place of use of this water right. If the criteria in RCW 90.03.386(2) are not met, the place of use of this water right reverts to the last place of use described by Ecology in a water right authorization.

PARCEL NO.	¼	¼	SECTION	TOWNSHIP N.	RANGE,

DESCRIPTION OF PROPOSED WORKS

Well 11, was drilled to a depth of 420 feet below ground surface in May 2005. Well 12 will be drilled to a depth of approximately 400 feet based on information provided from an on-site test well. Both wells will tap the lower gravel horizon within the Upper Ellensburg Formation. Well 11 was sealed to a depth of 300 feet, which is 21 feet into the overlying aquitard. The seal for Well 12 will be approximately 275 feet deep, designed to seal off aquitards encountered at 222 to 238 and from 265 to 270 feet deep.

DEVELOPMENT SCHEDULE

BEGIN PROJECT BY THIS DATE:	COMPLETE PROJECT BY THIS DATE:	COMPLETE CHANGE AND PUT WATER TO FULL USE BY THIS DATE:
April 1, 2005 (commencement of Well 11 construction)	September 30, 2009	June 1, 2025

REPORT

BACKGROUND [See WAC 173-153-130(6)(a)]

On November 3, 2004 the City of Sunnyside of Sunnyside, Washington filed an application for change the point of withdrawal under Ground Water Certificate 2553-A (water right). The application was accepted at an open public meeting on November 4, 2004, and the Yakima Count Water Conservancy board assigned application number YAKI-04-14.

The reason that the City of Sunnyside requested the change is that the current point-of-withdrawal, Well 5, has been rendered unusable by sand invasion through the well screen. The application proposes to drill a replacement well, to the same source aquifer, in one of three alternate sites, located various distances from Well 5. The alternate sites are the Well 10 (formerly called 4A) site, the School site, and the Allen Road site. The source aquifer is the lowest coarse-grained unit of the Upper Ellensburg Formation.

The application was duly advertised in the Daily Sun News, of Sunnyside, Washington, on February 4, 2005 and on February 8, 2005.

Attributes of the water right as currently documented

Name on certificate, claim, permit: City of Sunnyside

Water right document number: 2553-A

As modified by certificate of change number: NA

Priority date, first use: November 13, 1953

Water quantities: Qi: 1500 gallons per minute Qa: 720 acre ft./ year

Source: Well 5

Point of withdrawal: 300 feet north and 50 feet east of west quarter corner of section 25 being within the SW ¼ of the NW ¼ , Section 25, Township 10N, Range 22E

Purpose of use: Municipal

Period of use: Year Round

Place of use: Area served by the City of Sunnyside

Existing provisions:

The total annual withdrawal from the five water sources available to the City of Sunnyside shall not exceed 1756 acre-feet, such quantity being more than adequate for a city of this population.

The installation of an access port to well as described in attached Ground Water Bulletin No. 1, is recommended.

Tentative determination of the water right

The tentative determination is provided on the front page of this report.

History of water use

Table 1 presents a history of use from January 1997 to December 2000. In 1997, the annual authorized withdrawal of 720 acre-feet per year for Well 5 was exceeded by 200 acre-feet (Table 1). Exceedence of the authorized quantity was inadvertent on the City's part. During 1997, Well 5 was a primary source and operations personnel did not monitor total use relative to the annual authorized quantity. As can be seen in Table 1, there were many times during this period when Well 5 was not used. Because this is "municipal" water right the right is not subject to relinquishment due to the Municipal Water Law.

Previous changes

Not Applicable

SEPA

The board has reviewed the proposed project in its entirety. The potential instantaneous withdrawal rate associated with this transfer is 1,500 gallons per minute. Because the rate is less than the SEPA threshold of 2,250 gpm, the application is exempt from SEPA requirements (WAC 197-11-800(4).

Other

ADDITIONAL BACKGROUND

On December 12, 2007, the City of Sunnyside of Sunnyside, Washington filed this application for change with the Yakima County Water Conservancy Board to add a fourth point of withdrawal to the previously approved change application. The application was accepted at an open public meeting on December 12, 2007 and the Board assigned application number YAKI-07-21. Ecology's reference number is CG4-GWC2553-A@1.

The original change application YAKI-04-14 was approved on April 13, 2005. Since that approval, considerable work has occurred and is the basis for filing the current change application. The work that has been completed includes:

- Construction of Well 11 (at the Well 10 site noted in the original change application)
- Testing of an existing water supply well at the Allen Road site
- Drilling and testing of three test wells

Well 11

Well 11 construction was completed in the fall of 2005 and was on-line during the 2006 and 2007 peak season. The well is rated for 700 gpm and flow is controlled by a flow-control valve that precludes pumping at a higher rate regardless of pumping head. Based on the limitation in yield from Well 11, the City evaluated potential well yields from the other two alternate sites noted in the original change application. The well was recently retrofitted with a sand filter pack to alleviate pumpage of aquifer sand. The ultimate yield of this well is subject to change based on long-term monitoring.

Allen Road Well Testing

An existing well located within the Allen Road alternate location was tested on April 23, 2006. An analysis of that testing suggested that a production well would likely yield about 400 gpm. Based on the outcome of this test, additional hydrogeologic investigation was recommended and two phases of test well drilling were completed.

Test Well Drilling

Phase 1 test well drilling included two test wells that were constructed and tested in the fall of 2006. TW-1 was drilled at the Airport Site[1] and TW-2 was drilled at the School Site. The target gravel layer (Mcg-Deep) was not encountered in TW-1 and was just 10 feet thick at TW-2. Both wells encountered basalt, which precluded deeper exploration based on the limitations of the water right. The middle gravel (Mcg-Shallow) layer within the Upper Ellensburg was screened in both wells. Both sites were rejected based on poor yield potential and on concerns regarding nitrate concentration.

Phase 2 test well drilling included construction and testing of one test well (TW-3) at the Monson Property, which was recently purchased by the City of Sunnyside. TW-3 encountered the target aquifer from 295 to the bottom at 396 feet. Basalt was not encountered in the boring. The well was tested at 195 gpm with 30 feet of drawdown after 5 hours of pumping. Based on promising prospects with regard to well yield and water quality, the City proposes to develop Well 12 at the Monson Property.

Name on certificate, claim, permit: City of Sunnyside Water right document number: 2553-A As modified by certificate of change number: YAKI-04-14
Priority date, first use: November 13,1953
Water quantities: Qi: 1500 gallons per minute Qa: 720 acre ft./ year
Source: Well 5, Well 11
Point of diversion/withdrawal: SW ¼ of the NW ¼ , Section 25, Township 10N, Range 22E
Purpose of use: Municipal
Period of use: Year Round
Place of use: Area served by the City of Sunnyside The Department of Ecology amended the place of use in a letter to the City of Sunnyside, dated June 29, 2005 as follows: The place of use of this water right is the service area described in the most recent Water System Plan approved by the Washington State Department of Health, so long as the City of Sunnyside is and remains in compliance with the criteria in RCW 90.03.386(2). RCW 90.03.386(2) may have the effect of revising the place of use of this water right. If the criteria in RCW 90.03.386(2) are not met, the place of use of this water right reverts to the last place of use described by Ecology in a water right authorization.
Existing provisions: • Flowing wells shall be so constructed and equipped with valves to ensure that the flow of water can be completely stopped when not being used. Likewise, the well shall be so maintained as to prevent the waste of water through leaky casings, pipes, fittings, valves, or pumps -- either above or below land surface. • This well shall be cased and permanently sealed to a minimum depth of 20 feet below the top of the aquitard overlying the target aquifer in the Upper Ellensburg Formation. Such casing and sealing shall be performed in accordance with the provisions and standards of WAC Chapter 173-160-075 through Chapter 173-160-305 (Minimum Standards for Construction and Maintenance of Water Wells).

[1] The Airport Site was not included in the original change application as an alternate site but geologic analysis indicated the potential for encountering the target aquifer.

- Installation and maintenance of an access port for water-level measurements, as described in Ground Water Bulletin No. 1 (available on request), is required. An air line and gage may be installed in addition to the access port.

- An approved discharge-measuring device shall be installed and maintained in Well 11, in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC. Cumulative discharge-meter readings and the maximum rate of withdrawal shall be recorded at least daily and reported monthly to Department of Ecology. Only the maximum rate of diversion and annual total volume are required to be reported.

- 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.

- 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 withdrawal, including measurement units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), purpose of use, fish screen status, well tag number, open channel flow or pressurized diversion, other, 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 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.

- All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells).

- This decision may be appealed pursuant to RCW Chapter 43.21B. Any person wishing to appeal this decision must file an appeal with the Pollution Control Hearings Board **within thirty (30) days of receipt of this Decision**. Send the appeal to: Pollution Control Hearings Board, PO Box 40903, Olympia, Washington 98504-0903. At the same time, a copy of the appeal **must** be sent to: Department of Ecology, Water Resources Appeals Coordinator, PO Box 47600, Olympia, Washington 98504-7600.

The Department of Ecology amended the provisions in a letter to the City of Sunnyside, dated June 29, 2005:

The first sentence of Board Provision No. 2 is DELETED and REPLACED with the following well construction provision:

> The well shall be restricted to the Ellensburg Formation Aquifer. The wells shall be constructed with solid casing to a depth of 300 feet and terminate at or above the basalt basement, which should occur approximately 450 feet below the ground surface.
>
> The well casing annulus shall be sealed with neat cement, neat cement grout, or high solids bentonite corresponding to the required solid casing depth of 300 feet. The sealing material shall be placed in the annulus by pumping to seal the entire annulus from the bottom of the casing to the land surface.
>
> The well annulus shall be at least four (4) inches greater in diameter than the permanent casing.
>
> Installation of an airline and access port for water level measurement is required. A SCADA system data logging device could be installed in lieu of an airline. In the event that a SCADA system data logging device is installed in lieu of an airline, the City shall make such data available to the Department of Ecology upon request, within a reasonable period of time, and in a format prescribed by the department.

The following provision is ADDED to the Board's decision:

> The annual quantity of 720 ac-ft is non-additive. The total annual withdrawal quantity from Groundwater Declaration #33, #34, #35, and Certificate #49 is 1756 ac-ft.

Tentative determination of the water right

The tentative determination is provided on the front page of this report.

History of water use

Table 1 presents a history of use from January 1997 to December 2000. In 1997, the annual authorized withdrawal of 720 acre-feet per year for Well 5 was exceeded by 200 acre-feet (Table 1). Exceedence of the authorized quantity was inadvertent on the City's part. During 1997, Well 5 was a primary source and operations personnel did not monitor total use relative to the annual authorized quantity. As can be seen in Table 1, there were many times during this period when Well 5 was not used. Because this is "municipal" water right the right is not subject to relinquishment due to the Municipal Water Law.

Previous changes

An original change application (YAKI-04-14) was approved on April 13, 2005. This change allowed transferring the point of withdrawal from Well 5 to three alternate sites including the Well 10 site, the Allen Road site, and the School site.

The information or conclusions in this section were authored and/or developed by Russell F. Prior.

COMMENT AND PROTESTS [See WAC 173-153-130(6)(b)]

Public notice of the application YAKI-04-14 was given in the Sunnyside Daily Sun News on 1-14-05 and 1-21-05. Protest period ended on 2-21-05.

There were no protests received during the 30 day protest period. In addition, no oral and written comments were received at an open public meeting of the board or other means as designated by the board.

Public notice of the application YAKI-07-21 was given in the Sunnyside Daily Sun News on 1-4-08 and 1-11-08. Protest period ended on February 11, 2008.

There were no protests received during the 30 day protest period. In addition, no oral and written comments were received at an open public meeting of the board or other means as designated by the board.

The information or conclusions in this section were authored and/or developed by Russell F. Prior.

INVESTIGATION [See WAC 173-153-130(6)(c)]

Geologic, hydrologic, and water-system information contained within this Report of Examination was derived from the following references:

- ◊ Pacific Groundwater Group, 2005, *Supplemental Information in Support of a Change Application by the City of Sunnyside for Certificate 2553-A*, consultant's report for City of Sunnyside, January;
- ◊ Pacific Groundwater Group, 2005, *Construction and Testing, City of Sunnyside Well 11, Yakima County, Washington*, Consultant's report for the City of Sunnyside, September 2005.
- ◊ Pacific Groundwater Group, 2007, *Well No. 12 Site Recommendation*, Technical Memorandum that documents the test well drilling program completed in 2006 and 2007.
- ◊ Economic and Engineering Services, 2004, *City of Sunnyside Comprehensive Water System Plan Update – Draft Report*, August;
- ◊ Water-right records from Washington Dept. of Ecology's *Water Rights Tracking System (WRATS) database;*
- ◊ Well logs from Washington Dept. of Ecology's *Washington State Well Log Viewer*;
- ◊ Halford, K. J. and Kuniansky, E. L., 2002. *Documentation of Spreadsheets for the Analysis of Aquifer-Test and Slug-Test Data*, U. S. Geological Survey Open-File Report 02-197.

Water System Demand and Status of Water Supply

The applicant also holds water right certificates 33-D, 34-D, 35-D, 49-A, 4795-A, and G3-21323C, and permit G4-31581. This report does not address the questions of primary and secondary annual quantities, which are discussed in the report of examination for permit G4-31581, and elsewhere.

The draft Comprehensive Water System Plan Update (EES, 2004) indicates that the City of Sunnyside provided water to a population of 14,300 during 2003. The total pumping capacity of all of the City's six wells is about 5,100 gpm. Currently, Wells 7, 8, and 9 supply virtually all of the water, because Well 5 has had sand production problems and Well 10 (4A) has had water quality issues related to hydrogen sulfide and methane. Wells No. 5 and 10 (4A) are designated emergency wells by DOH. The estimated combined instantaneous pumping capacity for the three primary wells (No. 7, 8, and 9) is approximately 3,200 gpm. Well No. 6 provides an additional 450 gpm capacity for peak demand periods. Finally, Well 11 provides 700 gpm for peak demand. These sources equate to a total of 4,350 gpm for peak demand supplies available to the City.

DOH recommends a maximum 18-hour continuous pumping period for production wells. Before Well 11 was developed a pumping capacity of 3,650 gpm was available from Wells No. 6, 7, 8, and 9 and the City could provide 3.94 MGD (2,740 gpm) on a peak demand basis. In year 2002, the City's average daily demand was 2.80 MGD (1,945 gpm) and maximum daily demand was 4.35 MGD (3,020 gpm). Thus, with pre-Well 11 development, an instantaneous supply capacity of 3.94 MGD (2,740 gpm) was insufficient and, there is an immediate need for additional water supply.

With the addition of Well 11, the instantaneous supply capacity has increased; however, the amount of the increase will depend on future monitoring. While the urgency of replacing Well 5 capacity has diminished somewhat, construction of Well 12 will provide needed flexibility and assurance that demands can be met.

The draft Comprehensive Water System Plan Update (EES, 2004) also includes future demand forecasting. With conservation factored in, the forecasted average daily demand for the year 2024 will be 4.56 MGD (3,170 gpm) and the forecasted maximum daily demand will be 7.35 MGD (5,100 gpm)—both large increases. Replacement of Well 5 will provide some of these future needs.

Well 5 Construction Details

The City of Sunnyside's Well 5 was drilled to a depth of 461 feet during December 1953. The borehole was cased from depths 0 to 379 feet with 20-inch diameter steel casing and from depths 379 to 388 feet with 16-inch diameter steel casing. A 10-inch diameter, 45-slot screen was installed from depths 388 to 450 feet to draw from the lower part of the Upper Ellensburg Formation. When not pumped, the well flows freely at the surface. Withdrawals from Well 5 were metered beginning in 1997, when the full annual quantity was perfected (see Pacific Groundwater Group, 2004). However, production declined from 1998 through 2002, as the sand influx increased. The well has not been pumped since August 2002 as shown in Table 1. The current capacity of Well 5 is no more than 750 gpm, but only for short-term emergencies.

Water Rights – Certificates, Claims, New Applications, Permits, and Exempt Wells
(Note: The first portion of this discussion does not include the Monson Property location, which is the preferred site for Well 12. A discussion of these issues with regard to the Monson Property is added below.)

The Department of Ecology's Water Rights Application Tracking System (WRATS) database was used to identify groundwater rights, applications, and claims for wells within a radius of approximately 1.5 miles from each of the three proposed sites for replacement wells. This region represents an area that could be affected by changes to groundwater withdrawals proposed by the applicant. There are 10 certificates, one permit, two claims, and 11 applications for relatively large groundwater withdrawals within approximately 1.5 miles of the three proposed sites for Well 11. In addition, 19 exempt wells are located within approximately 1.5 miles of the three proposed sites. None of the water rights are senior to the subject water right; however, potential impairment of the water rights, claims, and applications must be investigated for the subject change application.

Ecology's on-line well log database was queried to search for well logs that correlate with certificates, long-form claims, new applications, permits, and exempt wells. The information is presented in Table 2. The table groups the wells into the five categories, indicates the wells with well logs, and includes an identifying number that corresponds to the well symbols shown in Figure 1.

Certificates
Microfiche records of files for water-right certificates were searched for associated well logs. For these cases, the well logs are clearly related to the water rights as shown on Table 2. The information was based partly on a recent update of the WRATS database and partly on the well log search. Of the ten certificates, two wells tap the Upper Ellensburg Fm.—other wells either tap a different aquifer or logs were not found.

Claims
Two claims were found within the search area. Well logs could not be found for either.

New Applications
Well logs for new applications are rare, because wells usually are not drilled before a permit is issued. None was found.

Permits
One well log was found that appears to correlate with Permit G4-29589 (indicated as permit #10 in Table 2 and Figure 2).

Exempt Wells
Lastly, Ecology's on-line well log database was queried to search for exempt wells tapping the lower aquifer of the Upper Ellensburg Fm., based on depth equal or exceeding 200 feet deep and on having not encountered basalt (see Table 2).

Water Rights – Certificates, Claims, New Applications, Permits, and Exempt Wells Monson Property Site

The Department of Ecology's Water Rights Application Tracking System (WRATS) database was used to identify groundwater rights, applications, and claims for wells within a radius of 1 to 1.5 miles from the proposed site at the Monson Property. The area searched includes Sections 21, 22, 27, 28, 33, and 34 of Township 10N, Range 22E. This region, shown in Figure 3, represents an area that could be affected by changes to groundwater withdrawals proposed by the applicant. There are 10 certificates, three claims[2], four new applications, and four permits, for relatively large groundwater withdrawals in the sections noted above. In addition, 16 exempt wells are located within the above 6 sections. One of the water rights is senior to the subject water right.

Ecology's on-line well log database was queried to search for well logs that correlate with certificates, long-form claims, new applications, permits, and exempt wells. The information is presented in Table 3. The table groups the wells into the five categories, indicates the wells with well logs, and includes an identifying number that corresponds to the well symbols shown in Figure 3. The initial search query was for wells that are greater than 250 feet deep. These well logs were then filtered based on a depth of 300 feet. Wells less than 300 feet were assigned to the Mcg-Shallow aquifer and wells greater than 300 feet were assigned to the Mcg-Deep aquifer. Finally, the well logs were perused and wells that tap basalt were identified (see Table 3).

Certificates
An attempt was made to correlate water-right certificates with associated well logs. For these confident correlations, the well logs are related to the water rights as shown on Table 3. The information was based partly on a recent update of the WRATS database and partly on the well log search. Of the ten certificates, four wells tap the Mcg-Deep aquifer, one taps the Mcg-Shallow aquifer and the others do not have geologic information.

Claims
Three claims were found within the search area. Well logs could not be found for them.

New Applications
Well logs were found for each of the new applications. One taps the Mcg-Deep aquifer; two tap the Mcg-Shallow aquifer; and one taps basalt.

[2] Claims without discharge or irrigated-acreage information are not included.

Permits

Two well logs were found that correlated with the four permits in the search area. One taps the Mcg-Shallow aquifer and one taps basalt.

Exempt Wells

Of the 16 exempt wells found in our search, eight appear to tap the Mcg-Deep aquifer and eight appear to tap the Mcg-Shallow aquifer.

Hydrogeologic Setting

The City of Sunnyside lies in a northwest-southeast trending structural syncline occupied by the lower Yakima River Valley. North of the city is the Rattlesnake Ridge anticline. South of the city, within the broader Yakima Valley, are two smaller geologic structures, the Snipes Mountain anticline, which parallels Rattlesnake Ridge southwest of Sunnyside and the Sagebrush Ridge anticline, which joins the south flank of Rattlesnake Ridge east of the city and may be an extension of the Snipes Mountain fold. Beneath the valley, the geologic units are a sequence of alternating sedimentary and volcanic (basalt) rocks.

Geologic units or formations of interest, and common to all three proposed alternate sites, are, from youngest to oldest:

- ◊ Recent Alluvium, comprising unconsolidated silt/clay, sand, and gravel,
- ◊ Upper Ellensburg Formation, comprising various volcaniclastic sedimentary units (including up to two separate gravel layers) above the Columbia River Basalt Group (CRBG),
- ◊ Elephant Mountain Member (basalt), of the Saddle Mountains Formation, CRBG
- ◊ Rattlesnake Ridge Interbed (sedimentary), of the Ellensburg Formation,
- ◊ Pomona Member (basalt), of the Saddle Mountains Formation, CRBG
- ◊ Mabton Interbed (sedimentary), of the Ellensburg Formation,
- ◊ Umatilla Member (basalt), of the Saddle Mountains Formation, CRBG
- ◊ Claystone interbed (sedimentary), of the Ellensburg Formation, and
- ◊ Wanapum Formation (basalt), various basalt flows, CRBG.

Within each of the sedimentary units are a variety of coarse to fine layers of varying thickness, some continuous over large areas and others of limited extent. The finer materials (clay and silt) behave (hydraulically) as aquitards with low permeability. The coarser materials (sand and gravel) behave as aquifers – some producing more than 1,000 gpm to a properly constructed well. Within each of the basaltic units, the permeability also varies widely, depending on the frequency and size of fractures. Generally the tops and bottoms of basaltic units are more permeable. The sedimentary units between basalt units generally are fine-grained aquitards. Only the Upper Ellensburg Formation of this geologic sequence is important to the subject application.

Beneath the City of Sunnyside, the Upper Ellensburg Fm. extends from about 100 feet to about 500 feet below the ground surface. Regionally, this occurrence is complicated by varying thicknesses of the overlying Recent Alluvium (zero to 100 feet depth) and the structural anticline, which causes the underlying basalt to rise up to shallower depths. Sand and gravel facies (the uppermost gravel layer within the supra-basalt sediments) of the Recent Alluvium form a principal aquifer source for the majority of wells around the City of Sunnyside, most of which are for domestic supply. The Upper Ellensburg Fm. also contains one or two gravel layers (Mcg-Shallow and Mcg-Deep) that act as principal aquifers, but only for uses requiring higher yields, such as municipal or irrigation supplies. The units within the Upper Ellensburg Fm. that are composed predominantly of clay or silt have low permeability and behave hydraulically as aquitards. The units greatly retard the rate of groundwater flow from aquifer to aquifer. The basalt units behave in a similar manner with alternating low permeability flow interiors and higher permeability flow boundaries.

The occurrence and transmissivity of the third gravel layer within the Upper Ellensburg Fm. (Mcg-Deep) was evaluated as part of Sunnyside's test well drilling program. Originally, its occurrence was defined based Well 5, Well 8, and Well 10. Its occurrence beneath downtown Sunnyside was confirmed when Well 11 was developed in the summer of 2005. Test wells drilled east and northeast of Well 11 suggested that the Mcg-Deep aquifer pinched out somewhere between Well 11 and these eastern test well locations.

The transmissivity (T) of the Mcg-Deep aquifer is much better understood now because of testing at the Allen Road site, development of Well 11, and drilling and testing TW-3. As previously indicated, testing at the Allen Road site indicated a potential well yield of just 400 gpm. This limitation is largely due to relatively low T based on the test. After development of Well 11 at the Well 10 site, the T of the aquifer at that location was estimated to be around 7000 gallons per day per foot (gpd/ft). This value is in good agreement with the estimated value of 10,000 gpd/ft, which was used for the impairment analysis in the original application (for Figure 1). The T estimated for the Monson Property location is 50,000 gpd/ft—a significant increase over formerly tested sites. While it appears that the aquifer beneath the Monson Property has significantly higher yield potential than elsewhere in the Sunnyside area, the limitation of the water right precludes instantaneous yields of greater than 1500 gpm. The importance of T for this change application is its affect on the impairment analysis.

Figure 3 is a map similar to those presented in Figure 1. However, a T value of 50,000 gpd/ft and a storage value of 0.001 (dimensionless) were used to calculate change in drawdown whereas previous calculations (Figure 1) used 10,000 gpd/ft for T. The T value came from testing TW-3 at the Monson Property and the storage value is based on the pumping test that was conducted at Well 11 (using Well 5 as an observation well during the test).[3]

[3] This storage value of 0.001 is one order of magnitude higher than that used in the earlier impairment analysis (shown in Figure 1). This higher storage value, if used in the original analysis, would have indicated smaller drawdowns; however, this difference is not significant relative to the total drawdown predicted in the earlier impairment analysis.

Conceptual Model of the Groundwater Flow System

Groundwater recharge to the Upper Ellensburg Formation results from the infiltration and percolation of irrigation waters and precipitation. Local precipitation and irrigation recharge initially accumulates in the Recent Alluvium, then percolates slowly down through the silt and clays units to the aquifer zones in the Upper Ellensburg Fm. In addition, more remote recharge sources are also suggested by the relatively high static water levels in wells that tap the Upper Ellensburg Fm. (Well 5 is a flowing well). For example, precipitation on the nearby Snipes Mountain or the Rattlesnake Hills to the north could also contribute recharge to the Upper Ellensburg Fm. Regionally, groundwater in the Upper Ellensburg Fm. flows laterally toward the Yakima River, down valley parallel to the river, or percolates downward to deeper units. In the vicinity of western Sunnyside, this lateral flow is complicated by Snipes Mountain because the Upper Ellensburg aquifers are not continuous form north to south across this structural feature. Because of this lack of continuity, groundwater flow in the Upper Ellensburg to wraps around Snipes Mountain.

Water Availability at the Proposed Points of Withdrawal

The primary proposed point of withdrawal is at the site of existing City of Sunnyside Well 10 (formerly called Well 4A). Well 11 was developed at the Well 10 site in 2005 and was rated to supply 700 gpm. Since its construction, the well has continued to supply that quantity; however, sand incursion into the well began in January of 2007 after one peaking season. Redevelopment of the well was performed and it provided 700 gpm for approximately two months of the 2007 peak season. The well has been retrofitted with a sand filter pack with no apparent loss in production capacity.

At the School Site, a test well completed in the summer/fall of 2006 indicated that the target gravel layer was not thick enough to provide sufficient yield for Well 12. At the Allen Road site, the Marquez well encountered about 50 feet of water-yielding sediments that may correlate with the Mcg-Deep. Yield information on the well-driller's log indicates a high specific capacity, although the well was not rigorously tested by the driller. Hydrogeologic testing completed in the spring of 2006 indicated potential well yields of just 400 gpm.

At the Monson Property TW-3 was tested at 195 gallons per minute (gpm) with 30 feet of drawdown for a specific capacity (Cs) of over 6 gallons per minute per foot of drawdown (gpm/ft). The well design for TW-3 did not consider well efficiency—it was constructed with just 15 feet of screen in an aquifer that is greater than 50 feet thick. Therefore, with an efficiently designed well screen for Well 12, we believe that a specific capacity of 10 gpm/ft is achievable, which would provide 1000 gpm with 100 feet of drawdown. Again, to compare, Well 11 yields 700 gpm with approximately 220 feet of drawdown.

These proposed Point of Withdrawal (POW) locations are shown in Figures 1, 2 and 3.

Infrastructure Availability at the Proposed Points of Withdrawal

Figure 2 shows the area pertinent to this change application. It shows the four proposed new POW locations, the existing City Limits, the Urban Growth Boundary, and the existing water-supply pipes.

As indicated above, the primary proposed point of withdrawal is at the site of existing City of Sunnyside Well 10. This site has an existing pump house, reservoir, and connection to the water system. In addition, the pump house was designed with expansion in mind and includes two motor-control units—one of which is unused and ready for use.

The School site is located about 1000 feet north of the nearest water line. The site is currently not within the existing City limits but is within the Urban Growth Boundary, which the City considers as the future service area.[4] A 12-inch water line is currently planned along Washout Road from the existing north end of the service area to the proposed site. Service area changes will require completing an amended water system plan, which is subject to WDOH approval.

The City is planning to construct a 12-inch water line about 4400 feet east from 16th Street along Allen Road. This line will connect to an existing main that exists along the eastern portion of Allen Road. This project is planned for immediate construction to serve the south-southeast portion of the City. This site is currently not in the City limits so is not in the current service area. Service area changes will require completing an amended water system plan, which is subject to WDOH approval.

Infrastructure does not yet exist at the Monson Property. The City is currently planning to develop a looped water main along the Yakima Valley Highway and back along Outlook Road to connect water from the site to the existing system. This amounts to approximately 13,000 feet of new water main. The City is currently working on changing the scope of work for their funding to increase the amount of pipeline that can be funded under their current grant.

The information or conclusions in this section were authored and/or developed by Linton Wildrick and Russell F. Prior.

CONCLUSIONS [See WAC 173-153-130(6)(d)]

The board finds that sufficient groundwater is available for appropriation and that a withdrawal of 720 acre-feet/year from proposed wells, at a maximum rate of 1,500 gpm, at any of the four alternate sites, subject to the provisions below, will not impair senior water rights. The changed appropriation will not be detrimental to the public welfare.

Tentative determination (validity and extent of the right)
The Board determines that water right CG4-GWC2553-A@1 is a valid water right that allows withdrawal of 1,500 gallons per minute and 720 acre ft / year. The Board acknowledges Ecology's belief that the annual quantity of 720 ac-ft is supplemental (non-additive). The primary/ supplemental issue as it relates to the original water right for Well 5 is not material to the Board's decision to change the point of withdrawal under this change application.

Relinquishment or abandonment concerns
NA

[4] From Comprehensive Water System Plan Update, Draft Report, EES, August 2004.

Hydraulic analysis
Three of the proposed sites will move the point of withdrawal farther away from the Yakima River, which is located about 5 miles south of Sunnyside. The fourth proposed site (Monson) is closer to the Yakima River than Well 5 as the crow flies; however, Snipes Mountain—a hydraulic barrier to flow in the Upper Ellensburg aquifer—lies directly between the Monson Property site and the river. Therefore, the Monson Property site is actually farther away from the river than Well 5 based on groundwater pathways. It is expected that there will be no change in groundwater contribution to the river by changing the POW.

Consideration of comments and protests
NA

Impairment

Potential for Change in Drawdown of Other Wells

This ROE includes an analysis of the change in drawdown within the Upper Ellensburg aquifer that might be seen if the Well 5 POW is moved to the three proposed locations. The analysis was performed by subtracting drawdown caused by Well 5 at its current POW from drawdowns caused by new wells at the three prospective POW's, all at the same pumping rate. The drawdown was estimated using a transmissivity value of 10,000 gallons/day per foot. This value was derived from specific capacity data for Well 5 and Well 8, which both tap the Upper Ellensburg aquifer. The storage coefficient used in the estimate is 0.0001, reflecting the highly confined nature of the aquifer. A pumping rate of 1500 gallons per minute was used. The result is Figure 1 of the ROE, which shows the change in drawdown that is estimated from moving the Well 5 POW to each of the new locations. At each location, a line of no-change in drawdown occurs along with areas of increased and decreased drawdown. The figure also shows water rights within approximately 1.5 miles of each of the three proposed locations. The locations for new applications are not shown in Figure 1 because well logs are not available. Although Sunnyside's wells are shown, none of the water rights shown in Figure 1 belong to the City.

Move to Well 10 Site
If the Well 5 POW is transferred to the Well 10 site, the closest water right to the new site is #8, which is a claim that does not have an associated well log. If the well withdraws from the Upper Ellensburg Fm., it could experience an additional drawdown of between 0 and 30 feet, depending on the exact location of the wells in Section 25. If the POW's for this claim is located in the southwestern portion of Section 25, it will experience less drawdown by moving the Well 5 POW to the Well 10 site.

The next closest water right (#10, a permit) is associated with a well that taps the Upper Ellensburg Fm.. This well could experience an increase in drawdown of between 20 and 25 feet. The well log indicates that the water level is 16 feet below ground surface, the well is 350 feet deep, and is finished as an open bottom well. Given the large amount of available drawdown of over 200 feet, the predicted increase in drawdown does not appear to be significant.

An exempt well (#42) taps the Upper Ellensburg Fm. and could experience an increase in drawdown of approximately 10 feet. This well is 183 feet deep, has a static water level of 25 feet, and is finished as an open bottom well. Assuming an available drawdown of 105 feet, seven feet of additional drawdown is not considered significant.

Other wells that tap the Upper Ellensburg Fm., including eleven exempt wells and one water right, are predicted to experience less than 5 feet of increased drawdown, which is not considered significant.

No well log could be found for claim #17. If this claim is associated with a well that taps the Upper Ellensburg Fm., it is predicted to have an increase in drawdown of about 5 feet, which is not considered significant.

Move to School Site
If the Well 5 POW is transferred to the School site, 12 exempt wells and 2 water rights could experience increased drawdown. Among the exempt wells one (#41) is predicted to have an increase in drawdown of about 30 feet. This well is 220 feet deep, has a static water level of 30 feet below the ground, and is apparently finished as an open bottom well with no screen or perforations. The available drawdown is 127 feet (assuming available water of 2/3 the total length of the water column). An increase in drawdown of 30 feet could be significant; however, the depth of the well suggests that it may be insulated from a proposed Well 11 because of significant anisotropy known to exist in the Upper Ellensburg Fm. This well should be monitored as an observation well during testing of Well 11 if located at the School Site.

Other exempt wells are predicted to have increased drawdowns of less than 25 feet, which is not considered significant given typical available drawdowns on the order of 200 feet.

No well log could be found for claim #17. If this permit is associated with a well that taps the Upper Ellensburg Fm., it is predicted to have an increase in drawdown of about 25 feet. Expected depths of Upper Ellensburg Fm. wells in this vicinity suggest that an increased drawdown of 25 feet is not significant.

An increase in drawdown of less than 5 feet could occur for water rights 21 and 24, an increased drawdown that is not considered significant. Water rights that are located southwest of the no-change line will experience less drawdown than if the water right POW remains at the Well 5 location.

Move to Allen Road Site
If the Well 5 POW is transferred to the Allen Road site, only one exempt well (#44) is predicted to have slightly increased drawdown. Other exempt wells are predicted to experience less drawdown that they currently do with Well 5 pumping.

Water right claim #17 is predicted to experience an insignificant increase in drawdown.

The nearest existing water rights (20 and 21) to the Allen Road site are owned by Marquez Investments, which supplies water to a trailer park on Allen Road. Water right #20 is for a certificated right with a well log that indicates the well is 242 feet deep and withdraws from the Upper Ellensburg Fm. The City is in the final stages of executing an agreement with the owners of these wells and water rights to serve water to residents of the trailer park. Upon execution of the agreement, use of the wells will be discontinued. For this reason, potential impairment of these rights is not a significant issue. No log exists for the well associated with water right #24.

Move to Monson Property Site

If the Well 5 POW is transferred to the Monson Property and pumped at 1500 gpm, only well #45 is predicted to have an increased drawdown of 10 feet or greater (Figure 3). This prediction assumes that the well taps the same aquifer as Well 12 (located on the Monson Property), which is not the case. Based on the depth of well #45 of 180 feet, it is not deep enough to tap the Mcg-Deep aquifer. Therefore, increased drawdown experienced by well #45 is likely to be less than that implied by our analysis. This is also true of other wells closest to the proposed point of withdrawal—wells #75 through #80 all apparently tap the Mcg-Shallow aquifer. Well #74, indicated as tapping the Mcg-Deep aquifer, is shown to have an increased drawdown of about 6 feet. This well is 310 feet deep and flows (static water level above the ground surface), suggesting that 6 feet of additional drawdown will not significantly impair its use.

Five other wells, not shown in Figure 3, are located in Sections 23 and 26. Based on their location west of the line-of-no-change, they could experience increased drawdown if the water right is moved to the Monson Property. The wells are identified as: # 25, #31, #37, #40, and #42 in Figure 1. The depth of these five wells ranges from 200 to 222 feet deep. Therefore, they appear to tap the Mcg-Shallow aquifer and will likely have less impairment than indicted in Figure 3.

Public Interest

The City of Sunnyside is an existing public water provider with a responsibility to supply the water needs for its customers. This transfer allowing a change in the point of withdrawal will allow the system to be operated more efficiently. Since municipal supply is designated as a beneficial use of water in RCW 90.03, the continued operation of this system is not detrimental to the public interest.

Other

The board also considered the previous provisions associated with the water right as identified in the background section of this report when making its decision.

DECISION [See WAC 173-153-130(6)(e)]

The board's decision is that application CG4-GWC2553-A@1 (YAKI-07-21) be approved for change of point of withdrawal from the current Well 5 POW to any one of four proposed alternate sites. The maximum allocation of 1,500 gpm and 720 acre-feet/year for municipal use, year-round as needed, will remain unchanged.

The information or conclusions in this section were authored and/or developed by Russell F. Prior.

PROVISIONS [See WAC 173-153-130(6)(f)]

- Flowing wells shall be so constructed and equipped with valves to ensure that the flow of water can be completely stopped when not being used. Likewise, the well shall be so maintained as to prevent the waste of water through leaky casings, pipes, fittings, valves, or pumps -- either above or below land surface.

- The wells shall be restricted to the Upper Ellensburg Formation Aquifer. The wells shall be constructed with solid casing to the bottom of the confining layer between Mcg-Shallow and Mcg-Deep. At the Well 10 site, this is at a depth of 300 feet; at the Monson Property site this is at a depth of 275 feet. The well shall terminate at or above the basalt basement, which should occur approximately 400 to 450 feet below the ground surface. The well casing annulus shall be sealed with neat cement, neat cement grout, or high solids bentonite corresponding to the required solid casing depth (275 or 300 feet). The sealing material shall be placed in the annulus by pumping to seal the entire annulus from the bottom of the casing to the land surface. The well annulus shall be at least four (4) inches greater in diameter than the permanent casing. Such casing and sealing shall be performed in accordance with the provisions and standards of WAC Chapter 173-160-075 through Chapter 173-160-305 (Minimum Standards for Construction and Maintenance of Water Wells).

- Installation of an airline and access port for water level measurement is required. A SCADA system data logging device could be installed in lieu of an airline. In the event that a SCADA system data logging device is installed in lieu of an airline, the City shall make such data available to the Department of Ecology upon request, within a reasonable period of time, and in a format prescribed by the department.

- An approved discharge-measuring device shall be installed and maintained in Well 11, in accordance with the rule "Requirements for Measuring and Reporting Water Use", Chapter 173-173 WAC. Cumulative discharge-meter readings and the maximum rate of withdrawal shall be recorded at least daily and reported monthly to Department of Ecology. Only the maximum rate of diversion and annual total volume are required to be reported.

- 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.

- 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 withdrawal, including measurement units, monthly meter readings including units, peak monthly flow including units, Department of Health WFI water system number and source number(s), purpose of use, fish screen status, well tag number, open channel flow or pressurized diversion, other, 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 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.

- All water wells constructed within the state shall meet the minimum standards for construction and maintenance as provided under RCW 18.104 (Washington Water Well Construction Act of 1971) and Chapter 173-160 WAC (Minimum Standards for Construction and Maintenance of Water Wells).

- This decision may be appealed pursuant to RCW Chapter 43.21B. Any person wishing to appeal this decision must file an appeal with the Pollution Control Hearings Board **within thirty (30) days of receipt of this Decision**. Send the appeal to: Pollution Control Hearings Board, PO Box 40903, Olympia, Washington 98504-0903. At the same time, a copy of the appeal **must** be sent to: Department of Ecology, Water Resources Appeals Coordinator, PO Box 47600, Olympia, Washington 98504-7600.

- Test wells TW-1 and TW-2 will be decommissioned in accordance with Chapter 173-160-381 WAC. The City will retain test well TW-3 for water level monitoring.

The information or conclusions in this section were authored and/or developed by Russell F. Prior.

The undersigned board commissioner certifies that he/she understands the board is responsible "to ensure that all relevant issues identified during its evaluation of the application, or which are raised by any commenting party during the board's evaluation process, are thoroughly evaluated and discussed in the board's deliberations. These discussions must be fully documented in the report of examination." [WAC 173-153-130(5)] The undersigned therefore, certifies that he/she, having reviewed the report of examination, knows and understands the content of this report and concurs with the report's conclusions.

Signed at Yakima, Washington
This 7 day of May 2008.

Jeff Stevens, Chairman
Yakima County Water Conservancy Board

If you have special accommodation needs or require this form in alternate format, please contact 360-407-6607 (Voice) or 711 (TTY) or 1-800-833-6388 (TTY).

Ecology is an equal opportunity employer

Yakima County Water Conservancy Board
List of Exhibits

Application: City of Sunnyside YAKL-07-21

No.	Date Submitted	Date of Document	Description of Document
1	No date	No date	Table 1 - Summary of Well 5 Discharge
2	02-05-08	01-29-08	Comment Ltr., Port of G'view
3	02-07-08	01-29-08	Comment Ltr., City of Zillah
4	02-07-08	01-29-08	Comment Ltr., City of Sunnyside
5	01-29-08	01-29-08	Affidavit of Publication
6	02-01-08	02-01-08	Site Visit Report
7	05-07-08	05-07-08	Supplemental Info in Support of a Change Application by the City of Sunnyside for Certificate 2553-A

Do Color copy

TABLE 1 - SUMMARY OF WELL No. 5 DISCHARGE

WEEK ENDING	DISCHARGE GALLONS	GPM	WEEK ENDING	DISCHARGE GALLONS	GPM	WEEK ENDING	DISCHARGE GALLONS	GPM	WEEK ENDING	DISCHARGE GALLONS	GPM	WEEK ENDING	DISCHARGE GALLONS	GPM
1/6/1997	-	-	1/5/1998	-	-	1/4/1999	-	-	1/3/2000	-	-	1/1/2001	-	-
1/13/1997	-	-	1/12/1998	6,845,000	679	1/11/1999		-	1/10/2000	-	-	1/8/2001	-	-
1/20/1997	-	-	1/19/1998	6,874,000	682	1/18/1999		-	1/17/2000	-	-	1/15/2001	-	-
1/27/1997	-	-	1/26/1998	6,849,000	679	1/25/1999		-	1/24/2000	-	-	1/22/2001	-	-
2/3/1997	-	-	2/2/1998	6,806,000	675	2/1/1999		-	1/31/2000	-	-	1/29/2001	-	-
2/10/1997	-	-	2/9/1998	6,820,000	677	2/8/1999	-	-	2/7/2000	-	-	2/5/2001	-	-
2/17/1997	-	-	2/16/1998	6,897,000	684	2/15/1999	-	-	2/14/2000	-	-	2/12/2001	-	-
2/24/1997	1,998,000	198	2/23/1998	6,832,000	678	2/22/1999	-	-	2/21/2000	-	-	2/19/2001	-	-
3/3/1997	7,258,000	720	3/2/1998	6,808,000	675	3/1/1999	-	-	2/28/2000	-	-	2/26/2001	-	-
3/10/1997	7,193,000	714	3/9/1998	6,777,000	672	3/8/1999	-	-	3/6/2000	-	-	3/5/2001	-	-
3/17/1997	7,270,000	721	3/16/1998	833,000	83	3/15/1999		-	3/13/2000	-	-	3/12/2001	-	-
3/24/1997	7,279,000	722	3/23/1998	-	-	3/22/1999	-	-	3/20/2000	-	-	3/19/2001	-	-
3/31/1997	7,214,000	716	3/30/1998	268,000	27	3/29/1999	-	-	3/27/2000	-	-	3/26/2001	-	-
4/7/1997	7,100,000	704	4/6/1998	-	-	4/5/1999	-	-	4/3/2000	-	-	4/2/2001	-	-
4/14/1997	7,096,000	704	4/13/1998	-	-	4/12/1999		-	4/10/2000	-	-	4/9/2001	-	-
4/21/1997	6,970,000	691	4/20/1998	190,000	19	4/19/1999		-	4/17/2000	634,000	63	4/16/2001	-	-
4/28/1997	6,985,000	693	4/27/1998	-	-	4/26/1999	-	-	4/24/2000	-	-	4/23/2001	-	-
5/5/1997	6,981,000	693	5/4/1998	-	-	5/3/1999		-	5/1/2000	-	-	4/30/2001	-	-
5/12/1997	7,034,000	698	5/11/1998	-	-	5/10/1999		-	5/8/2000	-	-	5/7/2001	-	-
5/19/1997	6,936,000	688	5/18/1998	-	-	5/17/1999		-	5/15/2000	-	-	5/14/2001	-	-
5/27/1997	7,960,000	790	5/25/1998	-	-	5/24/1999	-	-	5/22/2000	-	-	5/21/2001	-	-
6/2/1997	6,119,000	607	6/1/1998		-	5/31/1999	-	-	5/29/2000	-	-	5/28/2001	-	-
6/9/1997	7,118,000	706	6/8/1998	-	-	6/7/1999	-	-	6/5/2000	285,000	28	6/4/2001	-	-
6/16/1997	6,883,000	683	6/15/1998	-	-	6/14/1999	3,489,000	346	6/12/2000	2,456,000	244	6/11/2001	-	-
6/23/1997	6,932,000	688	6/22/1998	-	-	6/21/1999	7,195,000	714	6/19/2000	9,076,000	900	6/18/2001	-	-
6/30/1997	6,881,000	683	6/29/1998	-	-	6/28/1999	7,152,000	710	6/26/2000	9,044,000	897	6/25/2001	-	-
7/7/1997	6,854,000	680	7/6/1998	3,804,000	377	7/5/1999	7,127,000	707	7/3/2000	9,136,000	906	7/2/2001	-	-
7/14/1997	6,859,000	680	7/13/1998	7,063,000	701	7/12/1999	7,092,000	704	7/10/2000	9,010,000	894	7/9/2001	-	-
7/21/1997	6,835,000	678	7/20/1998	6,869,000	681	7/19/1999	7,126,000	707	7/17/2000	9,034,000	896	7/16/2001	-	-
7/28/1997	6,693,000	664	7/27/1998	6,785,000	673	7/26/1999	7,089,000	703	7/24/2000	8,957,000	889	7/23/2001	-	-
8/4/1997	6,671,000	662	8/3/1998	6,926,000	687	8/2/1999	7,139,000	708	7/31/2000	8,951,000	888	7/30/2001	-	-
8/11/1997	6,645,000	659	8/10/1998	4,734,000	470	8/9/1999	7,081,000	702	8/7/2000	8,942,000	887	8/6/2001	62,000	6
8/18/1997	6,588,000	654	8/17/1998	6,759,000	671	8/16/1999	7,045,000	699	8/14/2000	8,973,000	890	8/13/2001	-	-
8/25/1997	6,551,000	650	8/23/1998	6,852,000	680	8/23/1999	7,045,000	699	8/21/2000	4,598,000	456	8/20/2001	-	-
9/1/1997	6,722,000	667	8/30/1998	6,809,000	675	8/30/1999	6,992,000	694	8/28/2000	-	-	8/27/2001	-	-
9/8/1997	6,587,000	653	9/6/1998	6,768,000	671	9/6/1999	6,982,000	693	9/4/2000	-	-	9/3/2001	-	-
9/15/1997	6,610,000	656	9/13/1998	6,783,000	673	9/13/1999	7,029,000	697	9/11/2000	-	-	9/10/2001	-	-
9/22/1997	6,577,000	652	9/21/1998	6,722,000	667	9/20/1999	6,997,000	694	9/18/2000	-	-	9/17/2001	-	-
9/29/1997	6,808,000	675	9/28/1998	6,819,000	676	9/27/1999	6,956,000	690	9/25/2000	-	-	9/24/2001	-	-
10/6/1997	6,610,000	656	10/5/1998	4,817,000	478	10/4/1999	7,036,000	698	10/2/2000	-	-	10/1/2001	-	-
10/13/1997	6,625,000	657	10/12/1998	726,000	72	10/11/1999	7,500,000	744	10/9/2000	-	-	10/8/2001	-	-
10/20/1997	6,600,000	655	10/19/1998	-	-	10/18/1999	7,619,000	756	10/16/2000	-	-	10/15/2001	-	-
10/27/1997	6,500,000	645	10/26/1998	-	-	10/25/1999	545,000	54	10/23/2000	-	-	10/22/2001	-	-
11/3/1997	6,500,000	645	11/2/1998	-	-	11/1/1999	-	-	10/30/2000	-	-	10/29/2001	-	-
11/10/1997	6,747,000	669	11/9/1998	-	-	11/8/1999	-	-	11/6/2000	-	-	11/5/2001	-	-
11/17/1997	6,562,000	651	11/16/1998	-	-	11/15/1999	-	-	11/13/2000	-	-	11/12/2001	-	-
11/24/1997	6,787,000	673	11/23/1998	-	-	11/22/1999	-	-	11/20/2000	-	-	11/19/2001	-	-
12/1/1997	6,678,000	663	11/30/1998	-	-	11/29/1999	-	-	11/27/2000	-	-	11/26/2001	-	-
12/8/1997	6,660,000	661	12/7/1998	-	-	12/6/1999	-	-	12/4/2000	-	-	12/3/2001	-	-
12/15/1997	6,606,000	655	12/14/1998	-	-	12/13/1999	-	-	12/11/2000	-	-	12/10/2001	-	-
12/22/1997	6,682,000	663	12/21/1998	-	-	12/20/1999	-	-	12/18/2000	-	-	12/17/2001	-	-
12/29/1997	6,409,000	636	12/28/1998	-	-	12/27/1999	-	-	12/25/2000	-	-	12/24/2001	-	-
TOTAL GALLONS	**302,173,000**			**152,035,000**			**132,236,000**			**89,096,000**			**62,000**	
TOTAL ACRE FEET	**927**			**467**			**406**			**273**			**0.2**	

Note: Discharge values in GPM assume that Well No. 5 pumped continuously for the week indicated.

Exhibit No. 1
Date 05-07-08

TABLE 2 - SUMMARY OF WATER-RIGHT INFORMATION

Figure 1 Location Number	Document Number	TRS	1/4 - 1/4 Section	1/4 Section	Document Type	Purpose List	Business Name	Priority Date	Qi GPM	Qa Ac-Ft/Yr	Acres Irrigated	Well Log?	Aquifer*	Document Status
Certificates														
11	G4-27519	T10N/R22E-26	SE	NE	Certificate	CO	Valley Processing Inc	6/12/1981	400	95		Yes	UE	Active
12	G3-+20404CWRIS	T10N/R22E-35	SE	SE	Certificate	DS IR ST	LAGINESS RAYMOND LOU	8/4/1972	32	16.1	3.5	Yes	ALL	Active
13	G4-24605CWRIS	T10N/R23E-17	SW	NE	Certificate	IR	COLBY MERTON MRS	2/10/1977	200	137	38	Yes	B	Active
14	G4-24629CWRIS	T10N/R23E-17			Certificate	CI IR	GOLOB DONALD ET AL	2/11/1977	2500	1989	490	No		Active
15	G4-24770GWRIS	T10N/R23E-17	SW	NW	Certificate	IR	ALLEN LOUIS C	2/22/1977	250	232	75	No		Active
16	G4-25196CWRIS	T10N/R23E-17	NE	SW	Certificate	CI IR	VISSER WILLIAM J	4/26/1977	400	308	80	Yes	B	Active
19	G4-29584CWRIS	T10N/R23E-30	NE	NE	Certificate	DS EN ST	WALTER EDWARD & C	2/4/1988	50	90.8	35	Yes	B	Active
20	G4-28623CWRIS	T10N/R23E-31	SW	NE	Certificate	DM	Marquez Investments	2/22/1985	200	15		Yes	UE	Active
21	G4-29618CWRIS	T10N/R23E-31	SW	NE	Certificate	DM	Marquez Investments	2/22/1988	200	9		No		Active
24	G3-+22726CWRIS	T10N/R23E-32	SW	NW	Certificate	CI	Andrus & Roberts Co	3/6/1974	5.5	8		No		Active
Claims														
8	G4-200540CL	T10N/R22E-25			Claim Long Form	DG IR ST	Williamson, D. W.				10	No		Active
17	G4-093956CL	T10N/R23E-20			Claim Long Form	IR	Golob, D. A.				50	No		Active
New Applications														
1	G4-30751	T09N/R22E-01			NewApp	DS DY	Koopmans, Sidney	5/6/1991				No		Active
2	G4-30895	T09N/R23E-04			NewApp	DS DY ST	Northwest Farm Credit Services FLC	6/28/1991	80	49.2		No		Active
3	G4-30822	T09N/R23E-05			NewApp	DS DY	Sunnyside Quality Dairy Inc Farm 2	6/24/1991				No		Active
4	G4-30835	T09N/R23E-05			NewApp	DM DY ST	Sitko, Sharon	6/26/1991				No		Active
5	G4-30821	T09N/R23E-06			NewApp	DS DY	Sunnyside Quality Dairy Inc Farm 1	6/24/1991				No		Active
6	G4-30933	T09N/R23E-06			NewApp	DM DY	Scheenstra, Clarence	9/10/1991				No		Active
7	G4-31562	T10N/R22E-23			NewApp	DM ST	Rougk, Frederick	12/4/1992				No		Active
9	G4-32033	T10N/R22E-25			NewApp	IR	Catholic Bishop Yakima Corp/St Jos	5/18/1994				No		Active
18	G4-30855	T10N/R23E-20			NewApp	DS DY IR	Nilles, Clifford	7/25/1991	90	24.4		No		Active
22	G4-30934	T10N/R23E-31			NewApp	DS DY	Scheenstra, Clarence	9/10/1991				No		Active
23	G4-31565	T10N/R23E-31			NewApp	CI DM IR	Marquez Enterprises	11/25/1992				No		Active
Permits														
10	G4-29589	T10N/R22E-25	E ½	NE	Permit	IR	Sunnyside Housing Authority	2/8/1988	120	48		Yes	UE	Active
Exempt Wells														
25	Exempt	T10N/R22E-23	NW	NW	Exempt	DS	Apol-Biehl	11/12/1993				Yes	UE	
26	Exempt	T10N/R22E-13	SW	NE	Exempt	DS	Bieber	9/14/1990				Yes	UE	
27	Exempt	T10N/R22E-13	SW	NW	Exempt	DS	Booth, J.	7/2/1991				Yes	UE	
28	Exempt	T10N/R22E-23	NE	SE	Exempt	DS	Burma, P.	1/5/1995				Yes	UE	
29	Exempt	T10N/R22E-13	SW	NE	Exempt	DS	Butler, L. H.	11/7/1977				Yes	UE	
30	Exempt	T10N/R22E-13	NE	SW	Exempt	DS	Dawson, M.	10/21/1987				Yes	UE	
31	Exempt	T10N/R22E-23	NE	SW	Exempt	DS	Gamboa, H.	10/2/2000				Yes	UE	
32	Exempt	T10N/R22E-13	NW	NW	Exempt	DS	Garretta, G.	6/21/1999				Yes	UE	
33	Exempt	T10N/R22E-13	NW	NE	Exempt	DS	Laverman, P.	3/21/2000				Yes	UE	
34	Exempt	T10N/R22E-13	SW	SW	Exempt	DS	Martin, G.	10/4/1989				Yes	UE	
36	Exempt	T10N/R22E-13	SW	NE	Exempt	DS	Munson, W.	1/9/1995				Yes	UE	
37	Exempt	T10N/R22E-23	NW	SW	Exempt	DS	Nauta, M.	3/30/1981				Yes	UE	
38	Exempt	T10N/R22E-23	SE	NE	Exempt	DS	Stroh, B.	2/7/1997				Yes	UE	
39	Exempt	T10N/R22E-13	SW	SW	Exempt	DS	Timmerman, H.	10/8/1998				Yes	UE	
40	Exempt	T10N/R22E-26	NW	NW	Exempt	DS	Valley Processing					Yes	UE	
41	Exempt	T10N/R23E-18	E ½		Exempt	DS	Van Belle, C.					Yes	UE	
42	Exempt	T10N/R22E-24	SE	NW	Exempt	DS	Van Wingerden, J.	8/25/1995				Yes	UE	
43	Exempt	T10N/R22E-13	SW	SW	Exempt	DS	Wrung, D.	11/15/2000				Yes	UE	
44	Exempt	T9N/R22E-01	NW	NW	Exempt	CI	Yakima Valley Cheese Co.	1/17/1985				Yes	UE	

* ALL = Alluvium; UE = Upper Ellensburg Formation; B = Basalt (based on interpretation from well driller's logs)

TABLE 3 - SUMMARY OF WATER RIGHT INFORMATION (MONSON PROPERTY)

Figure 3 Location Number	Document Number	TRS	Well Depth	1/4 - 1/4 Section	1/4 Section	Document Type	Purpose List	Owner	Priority Date**	Qi GPM	Qa Ac-Ft/Yr	Acres Irrigated	Well Log?	Aquifer*	Document Status
Certificates															
45	G4-*05896ALCWRIS	10.0N 22.0E 27	180	NE	NW	Cert	ST	SEATTLE PACKING CO	4/6/1961	111	177.6		Yes	Mcg-Shallow	Active
46	G3-+22579CWRIS	10.0N 22.0E 27		S2	SW	Cert	ST,DS	GROEN JOHN G	2/25/1974	30	13		Yes	No Info	Active
47	G4-24566CWRIS	10.0N 22.0E 28	383	SE	SW	Cert	IR,DS	RIBAIL JERRY L	2/9/1977	150	78	20	Yes	Mcg-Deep	Active
48	G4-*08143CWRIS	10.0N 22.0E 28		NW	NW	Cert	IR,DS	MILLER E E	6/7/1966	100	68	17	Yes	No Geology	Active
49	G4-*03045CWRIS	10.0N 22.0E 28		S2	SE	Cert	IR,DS	COX M E	3/9/1953	60	42	14	No		Active
50	G4-26118GWRIS	10.0N 22.0E 33	330	NW	NW	Cert	IR	HEFFRON ALAN	2/2/1979	90	19	5	Yes	Mcg-Deep	Active
51	G4-*08610CWRIS	10.0N 22.0E 33	301	SW	SW	Cert	IR	NEWHOUSE A	3/20/1967	300	160	40	Yes	Mcg-Deep	Active
52	G3-+20136CWRIS	10.0N 22.0E 33	448	SE	SW	Cert	IR	BURNS ROBERT JEROME	4/21/1972	300	307.5	60	Yes	Mcg-Deep	Active
53	G4-28402CWRIS	10.0N 22.0E 34		SE	SE	Cert	DM,CI	US Grape Cooperative	2/28/1984	250	126.5		No		Active
54	G4-26463	10.0N 22.0E 34		NE	SW	Cert	IR	Heffron Alan	11/14/1979	100	87.5	25	No		Active
Claims															
55	G4-124013CL	10.0N 22.0E 22				Claim L	ST,IR	MORROW MRS M J				10	No		Active
56	G4-119725CL	10.0N 22.0E 22				Claim L	ST,IR	RAWSON J H				10	No		Active
57	G4-000492CL	10.0N 22.0E 22				Claim L	ST,IR	WOOLF DELL				30	No		Active
New Applications															
58	G4-30876	10.0N 22.0E 21	280			NewApp	ST,DY	Haak Henry	7/3/1991	50			Yes	Mcg-Shallow	Active
59	G4-30528	10.0N 22.0E 21	260			NewApp	DY,DS	DeRuyter Jake	12/3/1990	300			Yes	Mcg-Shallow	Active
60	G4-34526	10.0N 22.0E 21	338			NewApp	ST,DY	Haak I LLC	8/17/2001	70			Yes	Mcg-Deep	Active
61	G4-32292	10.0N 22.0E 33				NewApp	IR	Newhouse Steve	2/27/1995	1200		150	Yes	B	Active
Permits															
62	G4-30238	10.0N 22.0E 22	238			Pmt	DY	Te Velde Herman	4/25/1990	175	102		Yes	Mcg-Shallow	Active
63	G4-24641	10.0N 22.0E 28				Pmt	IR,DS	Woodworth St Clair	2/14/1977	3150	1294	315	No		Active
64	G4-29487(A)	10.0N 22.0E 33		SE	NE	Pmt	IR	Newhouse Steve	11/6/1987	433	160	40	Yes	B	Active
65	G4-29487(B)	10.0N 22.0E 33		SE	NE	Pmt	IR,FP	Upland Vineyards LLC	11/6/1987	267	98.8	108	No		Active
Exempt Wells															
66		10.0N 22.0E 33	365	NE	SW			GREG EVANS	11/28/1988				Yes	Mcg-Deep	
67		10.0N 22.0E 33	369	NW	SE			ROD VANDEGRAFF	12/14/1989				Yes	Mcg-Deep	
68		10.0N 22.0E 33	290	NW	SE			ROD VENDE GRAFF					Yes	Mcg-Shallow	
69		10.0N 22.0E 34	358	SE	SW			NICK FRIEND	5/31/1990				Yes	Mcg-Deep	
70		10.0N 22.0E 34	300	SW	NW			CARLTON SCHRUM	3/29/1978				Yes	Mcg-Deep	
71		10.0N 22.0E 33	320	SW	SW			BEN SINNER	6/28/1977				Yes	Mcg-Deep	
72		10.0N 22.0E 28	283	SW	SW			STEVE ERICKSON	12/6/1993				Yes	Mcg-Shallow	
73	ABG966	10.0N 22.0E 28	465	SW	SW			STEVE ERICKSON	6/22/1994				Yes	Mcg-Deep	
74		10.0N 22.0E 27	310		SW			IRVING CORNELIUS	5/7/1988				Yes	Mcg-Deep	
75	AKH638	10.0N 22.0E 27	294	NE	SW			AL TEBALDI	9/12/2003				Yes	Mcg-Shallow	
76		10.0N 22.0E 27	287	SW	SE			FLOYD & BESSIE RAFFLER	7/22/1980				Yes	Mcg-Shallow	
77		10.0N 22.0E 27	260	SW	NW			ARVID MONSON	5/31/1990				Yes	Mcg-Shallow	
78	AKH625	10.0N 22.0E 27	259	SW	NE			ELIO CAMPOS	6/10/2003				Yes	Mcg-Shallow	
79	AFH920	10.0N 22.0E 21	298	SE	SE			COSABLANCO ESTATES	6/27/2000				Yes	Mcg-Shallow	
80	AEG081	10.0N 22.0E 21	262	SE	SE			KYLE KOLLMAR					Yes	Mcg-Shallow	
81	ACL559	10.0N 22.0E 33	318	NW	NW			JOHN HEFFRON					Yes	Mcg-Deep	

* Mcg-Shallow = Shallow Upper Ellensburg; Mcg-Deep = Deep Upper Ellensburg; B = Basalt (based on interpretation from well drillers' logs)

** Priority Date for Exempt wells is taken from the "well_log_recv_dt" field in the on-line database

This data may not be complete or accurate.Validity of water rights documented by statements of claims can only be determined in Superior Court. Ecology cannot guarantee the validity of the water rights documented by Permits and Certificates

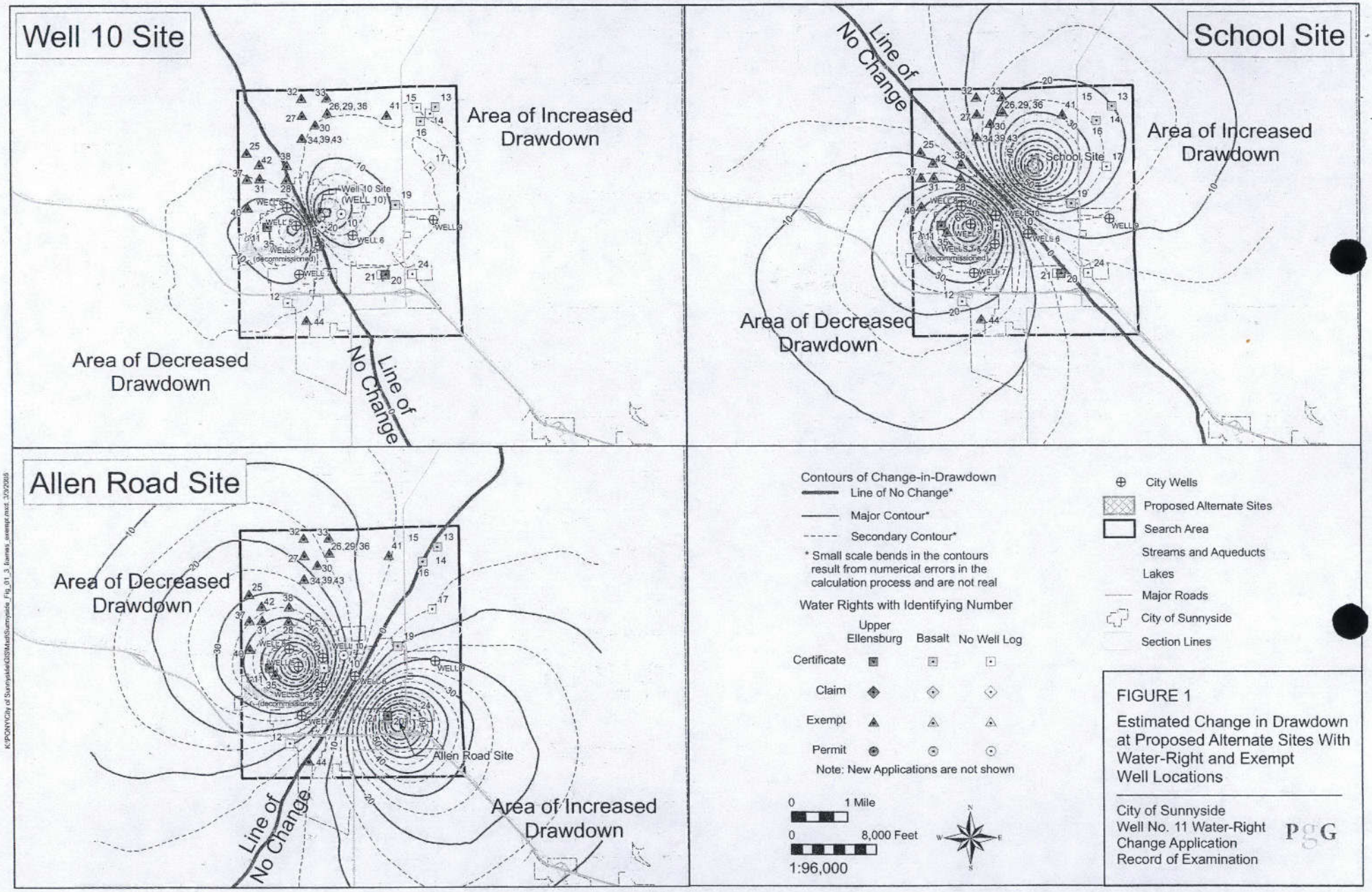


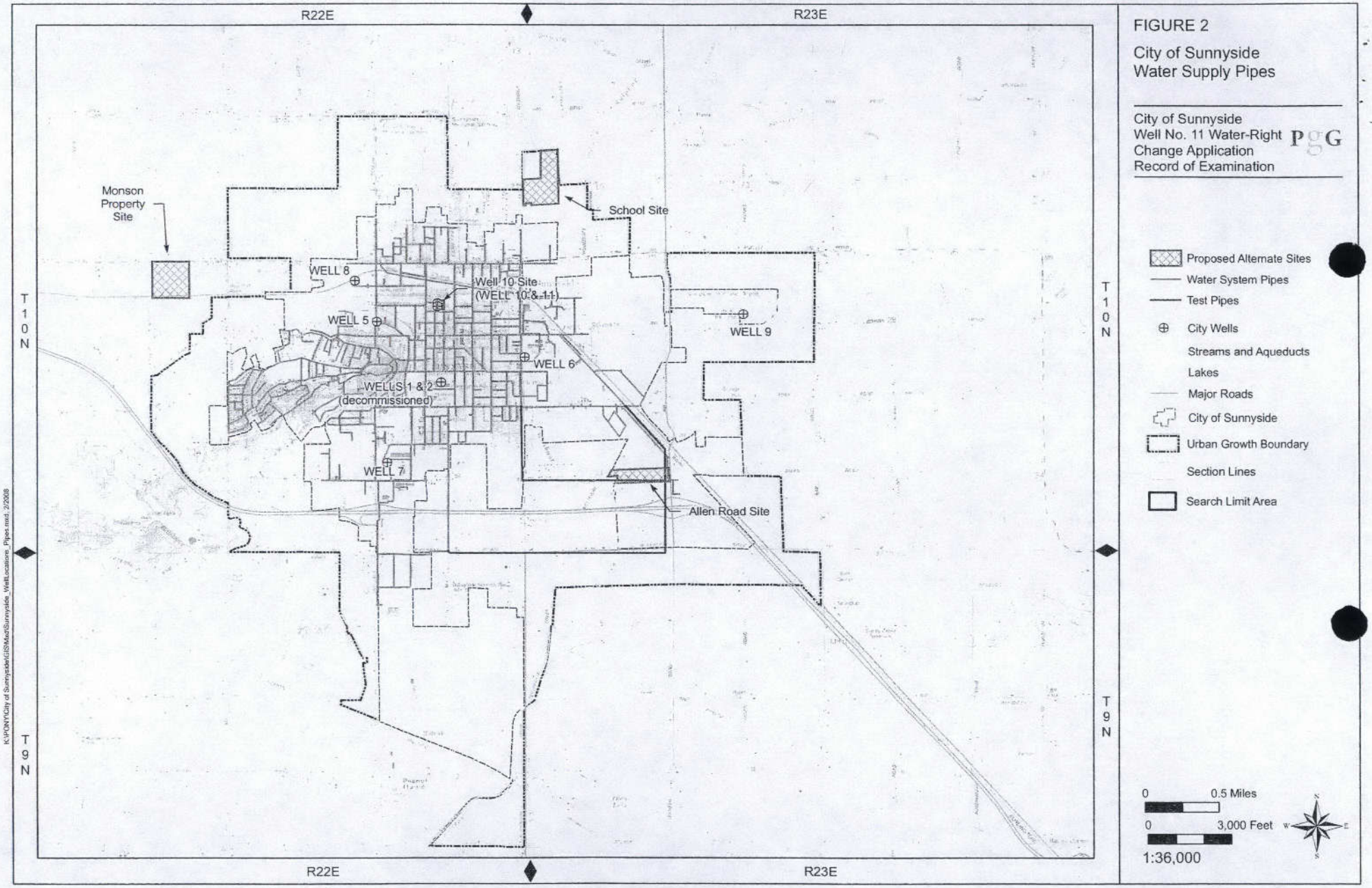
FIGURE 1

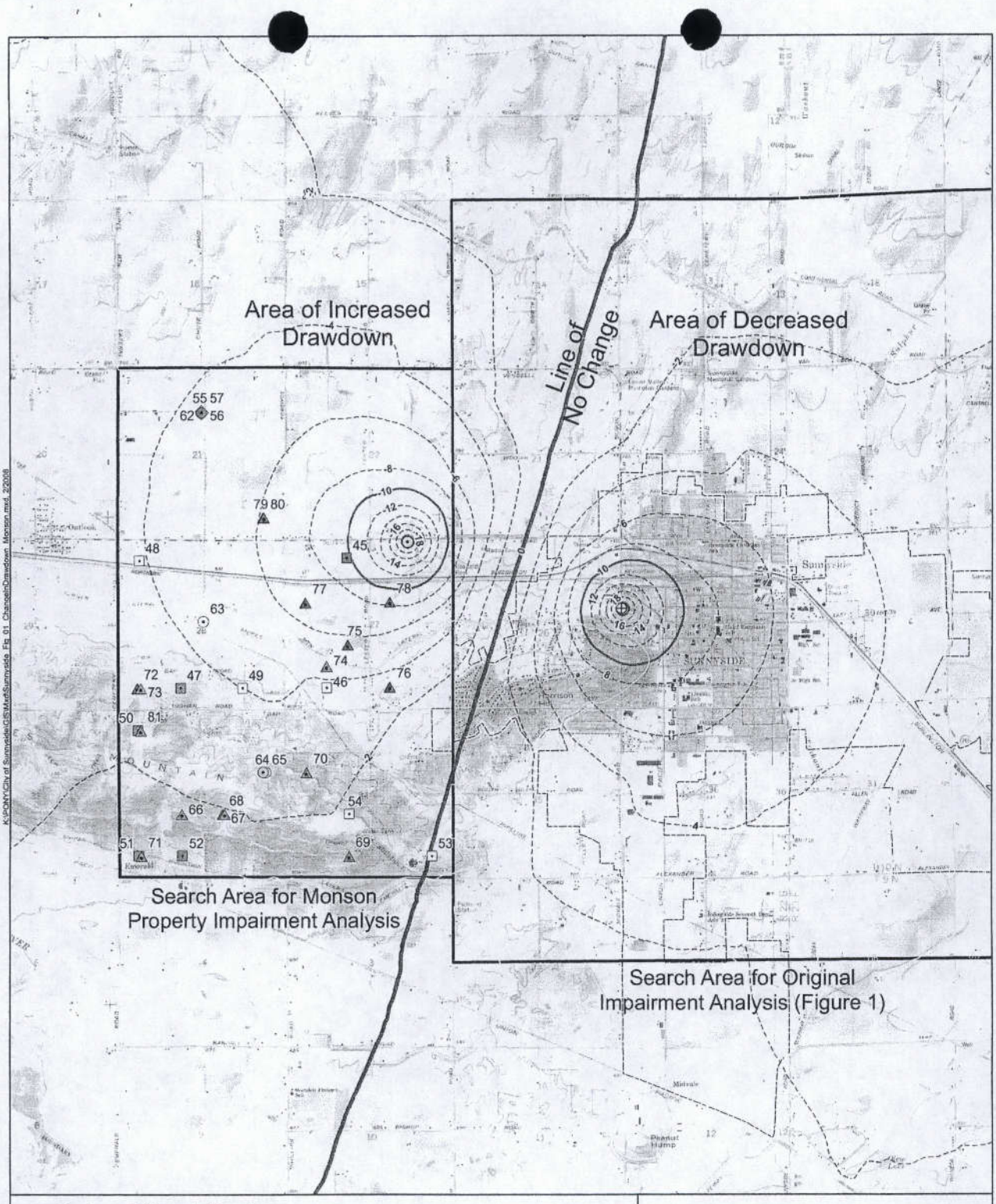
Estimated Change in Drawdown at Proposed Alternate Sites With Water-Right and Exempt Well Locations

City of Sunnyside
Well No. 11 Water-Right Change Application
Record of Examination

PgG

K:\PONY\City of Sunnyside\GIS\Mxd\Sunnyside_Fig_01_3_Ramos_exempt.mxd 3/9/2005


R22E
R23E
T 10 N
T 9 N
Monson Property Site
School Site
WELL 8
Well 10 Site (WELL 10 & 11)
WELL 5
WELL 9
WELL 6
WELLS 1 & 2 (decommissioned)
WELL 7
Allen Road Site
FIGURE 2
City of Sunnyside Water Supply Pipes
City of Sunnyside Well No. 11 Water-Right Change Application Record of Examination
PgG
Proposed Alternate Sites
Water System Pipes
Test Pipes
City Wells
Streams and Aqueducts
Lakes
Major Roads
City of Sunnyside
Urban Growth Boundary
Section Lines
Search Limit Area
0 0.5 Miles
0 3,000 Feet
1:36,000
K:\PDNY\City of Sunnyside\GIS\Mxd\Sunnyside_WellLocations_Pipes.mxd, 2/2008



Contours of Change-in-Drawdown

- Line of No Change*
- 10-foot Contour*
- 2-foot Contour*

Contours based on Qi of 1500gpm
* Small scale bends in the contours result from numerical errors in the calculation process and are not real

Water Rights with Identifying Number

	Mcg Shallow	Mcg Deep	Basalt	No Well Log
Certificate	■	■	■	■
Claim	◆	◆	◆	◆
Exempt	▲	▲	▲	▲
Permit	●	●	●	●

Note: New Applications are not shown

- City Well 5
- Monson Property Well (Proposed)
- Streams and Aqueducts
- Lakes
- Major Roads
- City of Sunnyside
- Section Lines
- Search Area

0 1 Miles

0 6,000 Feet

1:36,000

FIGURE 3

Estimated Change in Drawdown at Monson Property Site With Water-Right and Exempt Well Locations

City of Sunnyside
Water-Right Change Application
Record of Examination

PgG

Yakima County Water Conservancy Board

128 North Second Street
Yakima, Washington 98901
(509) 574-2650 / Fax (509) 574-2651

Rec'd 02-5-08 Hdw

Date: January 29, 2008

To: Agencies and Parties of Record

From: Yakima County Water Conservancy Board

Re: YAKI-07-21 CITY OF SUNNYSIDE

This is to notify all public and private agencies with jurisdiction and/or environmental expertise that the Yakima County Water Conservancy Board will consider the above-referenced proposal.

Under the WAC 173-153-080 the Water Conservancy Board shall publish, or require the applicant to publish a public notice of the proposed transfer of a water right. A copy of that notice is attached.

Under WAC 173-153-090 the required thirty-(30) day protest period will expire February 11, 2008 on this application. Free free to comment by separate letter or by writing them in the space below

- ☑ This project does not affect us
- ☐ We have no comments
- ☐ Separate letter will be sent

We have the following comments:

I have polled the Commissioners for this reply.

Signature Karen Mortensen Date: 2-6-08
Title: Administrative Asst Phone: 965-3107
Agency Port of Grandview

Exhibit No. 2
Date 02-05-08

RECEIVED FEB 0 4 2008

Yakima County Water Conservancy Board

128 North Second Street
Yakima, Washington 98901
(509) 574-2650 / Fax (509) 574-2651

Date: January 29, 2008

To: Agencies and Parties of Record

From: Yakima County Water Conservancy Board

Re: YAKI-07-21 CITY OF SUNNYSIDE

This is to notify all public and private agencies with jurisdiction and/or environmental expertise that the Yakima County Water Conservancy Board will consider the above-referenced proposal.

Under the WAC 173-153-080 the Water Conservancy Board shall publish, or require the applicant to publish a public notice of the proposed transfer of a water right. A copy of that notice is attached.

Under WAC 173-153-090 the required thirty-(30) day protest period will expire February 11, 2008 on this application. Free free to comment by separate letter or by writing them in the space below

- [x] This project does not affect us
- [ ] We have no comments
- [ ] Separate letter will be sent

We have the following comments:

Signature Sharon Bounds Date: 2/7/08
Title: Clerk / Treasurer Phone: 509 829-5151
Agency City of Zillah

Exhibit No. 3
Date 02-07-08

Yakima County Water Conservancy Board

128 North Second Street
Yakima, Washington 98901
(509) 574-2650 / Fax (509) 574-2651

Date: January 29, 2008

To: Agencies and Parties of Record

From: Yakima County Water Conservancy Board

Re: YAKI-07-21 CITY OF SUNNYSIDE

This is to notify all public and private agencies with jurisdiction and/or environmental expertise that the Yakima County Water Conservancy Board will consider the above-referenced proposal.

Under the WAC 173-153-080 the Water Conservancy Board shall publish, or require the applicant to publish a public notice of the proposed transfer of a water right. A copy of that notice is attached.

Under WAC 173-153-090 the required thirty-(30) day protest period will expire February 11, 2008 on this application. Free free to comment by separate letter or by writing them in the space below

- ☐ This project does not affect us
- ☒ We have no comments
- ☐ Separate letter will be sent

We have the following comments:

Signature Tom Monroe Date: 2/4/08
Title: Operations Manager Phone: 509-837-[redacted]5141
Agency Roza Irrigation District

Exhibit No. 4
Date 02-01-08

Yakima County Water Conservancy Board

128 North Second Street
Yakima, Washington 98901
(509) 574-2650 / Fax (509) 574-2651

January 29, 2008

Washington State Department of Ecology
Central Region Office
15 West Yakima Avenue, Suite 200
Yakima, Washington 98902-3452

Attention: Mr. John Kirk
Water Resources Program

RE: AFFIDAVIT OF PUBLICATION

Dear Mr. Kirk:

Pursuant to state statute, enclosed with this letter is the original "Affidavit of Publication" for YAKI-07-21, City of Sunnyside.

The Board is still in review of this application.

If you have any questions or concerns, please feel free to contact our office.

Sincerely,

Sylvia E. Cervantes

Sylvia E. Cervantes
Clerk of the Board

Cc: Rod Vetsch`

Exhibit No. 5
Date 02-07-08

Affidavit of Publication

STATE OF WASHINGTON
COUNTY OF YAKIMA SS

Timothy J. Graff, being first duly sworn on oath deposes and says that he is the Publisher of the DAILY SUN NEWS, a daily newspaper.

That said newspaper is a legal newspaper and it is now and has been for more than six months prior to the date of publications hereinafter referred to, published in the English language continually as a daily newspaper in the city of Sunnyside, YAKIMA County, Washington, and it is now and during all of said time printed in an office maintained at the afforesaid place of publication of said newspaper, and that the said Daily Sun News was on the 4th Day of April, 1969 approved as a legal newspaper by the Superior Court of said Yakima County.

That the annexed is a true copy of a LEGAL PUBLICATION -
Pacific Groundwater Group
Water Conservancy
published in regular issues (and not in supplemental forms) of said newspaper once each week for a period of 2 consecutive issue(s) commencing 01/04/08 and ending on 01/11/08, both dates inclusive, and that such newspaper was regularly distributed to its subscribers during all of said period. That the full amount of the fee charged for the foregoing publication is the sum of $ 134.00, amount has been paid in full, at the rate of $6.70 per column inch per insertion.

Tim Graff

Subscribed and sworn to before me 01/10/08

NORA HERNANDEZ
NOTARY PUBLIC
STATE OF WASHINGTON
COMMISSION EXPIRES
AUG. 20, 2011

Notary Public in and for
the State of Washington
010308-00001

BEFORE THE YAKIMA COUNTY
WATER CONSERVANCY BOARD
YAKIMA, WASHINGTON

Notice of Application No. YAKI-07-21 to Add a Point of Withdrawal Under Ground Water Certificate No. 2553-A

TAKE NOTICE: That on December 12, 2007, the City of Sunnyside filed an application with the Yakima County Water Conservancy Board (Board) to add an additional point of withdrawal to Ground Water Certificate No. 2553C, as previously modified by change decision YAKI-04-14

This certificate (priority date July 10, 1953) as modified by YAKI-04-14 authorizes the withdrawal of 1,500 gallons per minute and 720 acre-feet per year from three sites to be located within the SE + of the NW + of Section 25, Township 10N, Range 22E; the SW + of the NW + of Section 19 within Township 10N, Range 23E; and the E + of Section 31 within Township 10N, Range 23E for municipal supply within the area served by the City of Sunnyside, in Yakima County.

The applicant proposes to add a fourth site as a potential point of withdrawal to be designated Well 12 and to be located within the NW + of the NE + of Section 27, Township 10 N, Range 22 E. This site may be capable of 1500 gpm from a single well and therefore the possibility of pumping up to 1500 gpm from this site is part of this advertisement.

Any protests or objections to the approval of this application may be filed with the Department of Ecology and must include a detailed statement of the basis for objections; protests must be accompanied by a fifty dollar ($50) recording fee and filed with the Cashiering Section, State of Washington, Department of Ecology, P.O. Box 5128, Olympia, WA 98504-5128 within thirty (30) days from January 11, 2008.

Any interested party may submit comments and other information to the Board regarding this application. Comments and information may be submitted in writing or verbally at any public meeting of the Board held to discuss or decide on this application. This application will be on the Board agenda during its regular meetings to be held on the first Wednesday of each month in 2008. NOTE: this notice does not constitute notice of a meeting for the purposes of the Open Public Meetings Act, Chapter 42.30 RCW. Additionally, the Yakima County Water Conservancy Board may receive written comments or information at its offices located at 2301 Fruitvale Boulevard, Yakima, Washington 98902.

PUBLISH: DAILY SUN NEWS
January 4 & 11, 2008

Yakima County Water Conservancy Board

128 N. 2nd Street
Yakima, Washington 98901
(509) 454-5315

SITE VISIT REPORT

Date of Inspection: February 1, 2008
Applicant Name: City of Sunnyside
DOE/Court Claim No:
YCWCB No.: YAKI-07-21
Inspector(s): Jeff Stevens, Mark Reynolds
Applicant(s) Present: Jim Bridges, Public Works Director

Existing Right:	**Comment**
Verified Point of Diversion/Withdrawal	☐ Yes ☒ No ☐ NA — See previous application file
Headgate or Pump Type:	
Type of Metering:	
Verified Place of Use:	☒ Yes ☐ No ☐ NA
Describe:	City of Sunnyside
Irrigation Equipment:	NA, municipal
Obtained Water Use Data:	☐ Yes ☒ No ☐ NA
Describe:	Water use data discussed in previous application

Proposed Change:	**Comment**
Verified Point of Diversion/Withdrawal	☐ Yes ☐ No ☐ NA
Headgate or Pump Type:	Proposed, not constructed
Type of Metering:	NA
Verified Place of Use:	☒ Yes ☐ No ☐ NA
Describe:	City of Sunnyside
Irrigation Equipment:	NA, municipal

Exhibit No. 6
Date 02-01-08

Discussions with Applicant

- Well site at site of old Monson Ranch. Engineers and hydrogeologists have verified no wellhead protection issues.
- Used to be on private property, owner let domestic animals run on well site.
- City owned property.
- Drilled a 400-ft deep, 6-inch test well about 1,000 feet away. Good water, expect production well to produce about 1,500 gpm.
- No nitrates
- Well will be sealed through the upper portion of the aquifer and sealed into the upper Ellensburg.
- Will require 13,000 feet of 12-inch line to connect to existing City system.
- Has DWSRF loan for construction. Would like to drill in August.

Field Observations

- Open field
- Near main road into town
-

Other Comments/Recommendations

- Check on public notice.
- Verify test well same aquifer – request data from Pacific Groundwater
- Verify no impairment on nearby wells.

Be sure to attach annotated photos, other field notes and any data from the applicant.

Yakima County Water Conservancy Board

128 N. 2nd Street
Yakima, Washington 98901
(509) 454-5315

SITE VISIT REPORT

For

Location:	Sunnyside, WA	**Date:**	February 1, 2008
		Photos by:	Jeff Stevens

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td colspan="2">Proposed well site</td></tr>
<tr><td>  </td><td>  </td></tr>
<tr><td>Private property next to proposed well site</td><td>6-inch test well in old Monson Ranch property</td></tr>
</table>

City of Sunnyside
818 East Edison Ave
Sunnyside WA 98944-2206

WASHINGTON STATE DEPARTMENT OF ECOLOGY

STATE OF WASHINGTON
SUPERSEDING CERTIFICATE OF WATER RIGHT
Supersedes Certificate issued September 5, 1978

Document Title: Certificate of Water Right

Agency: Department of Ecology
Central Region Office
15 W Yakima Ave Ste 200
Yakima WA 98902-3401

Applicant: City of Sunnyside
818 East Edison Ave
Sunnyside WA 98944-2206

Reference Number:

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
June 28, 1973	G3-21323	G3-21323P	G3-21323C

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)
A well	

MAX. CUBIC FEET PER SECOND	MAX. GALLONS PER MINUTE	MAX. ACRE-FEET PER YEAR
	950	1500

QUANTITY/TYPE OF USE/PERIOD OF USE

950 gallons per minute; 1500 acre-feet per year, 382 acre-feet per year additive (primary) and 1,118 acre-feet per year non-additive (supplemental) continuously for municipal supply.

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
SW¼NW¼	36	10	22 E.	37	Yakima

PARCEL NO.: 22103623007

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
		9 & 10	22 E & 23 E	37	Yakima

PARCEL NO.: N/A

ADDITIONAL LEGAL IS ON PAGE 2

CONTINUED LEGAL DESCRIPTION FOR LOCATION OF DIVERSION/WITHDRAWAL

400 feet east and 645 feet north from the west quarter corner of Section 36.

CONTINUED LEGAL DESCRIPTION FOR PROPERTY ON WHICH WATER IS TO BE USED

City of Sunnyside, Washington.

PROVISIONS

All conditions and requirements contained in reports of examination or permits previously issued apply to this certificate unless specifically noted below.

Installation and maintenance of an access port as described in Ground Water Bulletin No. 1 is required. An air line and gage may be installed in addition to the access port.

The following is a summary of existing additive water rights issued for the City of Sunnyside prior to Ground Water Certificate No. G3-21232C:

Well No.	Certificate No.	GPM	AF/Y
1	33-D	420	347
2	34-D	230	62
3	35-D	420	347
4	49-D	1000	1000
		2070	1756

Total maximum (primary) additive water rights available for use within the City of Sunnyside including G3-21232C shall be no more than 2,138 acre feet per year; therefore, only 382 acre feet per year of Ground Water Certificate No. G3-21232C are additive, and the balance of 1118 acre feet per year are (supplemental) non-additive.

The right to use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described, except as provided in RCW 90.03.380, 90.03.390, and 90.44.100.

This certificate of water right is specifically subject to relinquishment for non-use of water as provided in RCW 90.14.

Given under my hand and the seal of this office at Yakima, Washington, this 30th day of September 2005.

DEPARTMENT OF ECOLOGY
STATE OF WASHINGTON

Jay Manning
Department of Ecology

By _____
Robert F. Barwin, Section Supervisor

DATA REVIEW
OK _____
ECY 040-1-2 (Rev. 8-97)

City of SUNNYSIDE WASHINGTON

9

Sanitary Survey

HLA Engineering and Land Surveying, Inc.

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
EASTERN DRINKING WATER REGIONAL OPERATIONS
16201 E Indiana Avenue, Suite 1500, Spokane Valley, Washington 99216-2830
711 Washington Relay Service

March 10, 2021

Daniel R. Tiliano, Supervisor
City of Sunnyside
818 E Edison
Sunnyside, Washington 98944

Subject: Sunnyside, City of; PWS # 85400-3; Yakima County
Routine Sanitary Survey Inspection Report – Survey Date: August 5, 2020

Dear Mr. Tiliano:

Thank you for meeting with me to complete the sanitary survey for your water system. This letter and enclosed report document the information collected during the survey. The Department of Health (DOH) identifies defects in your water system facilities or operations that need your immediate attention, as *significant deficiencies* or *significant findings*. Please read this letter and the enclosed documents carefully. There may be some concerns and tasks, you must complete within a specific time-period or date.

Significant Deficiencies left unaddressed, have the potential to cause an immediate or potential risk to the health of the water system customers. A **Significant Finding** is a problem that imparts a serious but less direct public health threat than a significant deficiency. A significant finding left unaddressed, creates a risk to the physical safety, security or reliability of the water system.

Checklist #	Required Corrective Action for Significant Deficiencies and Findings
22	**S13** – Replace the missing bolt. The cover appeared tight and a gasket was visible and in good condition. Missing bolts can provide entry points for contaminants into the well, primarily bacterial in nature.
73	**Grandview Reservoirs 1 and 2** – Seal the open holes in the reservoir hatches. Appears some components were removed, and the bolt holes used to mount the equipment were left open to atmosphere. A replacement nut and bolt with a plastic washer may be more durable than plain silicone in this case.
70b	**Grandview Reservoir 3** – Inspect the reservoir and provide photographs.
	Reservoir 4 (Skyline) – Inspect the reservoir and provide photographs.
	Inspect the reservoirs and provide photographs of the locking hatch (lock, as well as, open and closed), gasket, vent, screens, control junction boxes, and other openings that can be considered potential entry points for contaminants. Identify any corrections that were not completed during or just after the inspection.

Addressing Significant Deficiencies and Significant Findings. Within forty-five (45) days of the date of this letter, you must correct the Significant Deficiencies and Findings.

Ensuring your water system completes corrections for each Deficiency and Finding is a high priority for the Office of Drinking Water. Failure to complete corrections within the designated timeframe may result in enforcement action.

Upon completion of corrections, please provide verification by submitting photographs and supporting narrative, to:

- Email: ero.sanitarysurveys@doh.wa.gov or
- Mail: "Attn: Mark Steward, Sanitary Survey Program Manager" at the address listed on our letterhead.

In your transmittal, please provide: (1) Water System Name, (2) PWS ID #, and (3) Dates of Correction(s).

If you believe you have good cause and need additional time to correct any Significant Deficiency or Finding, please contact Mark Steward at (509) 329-2136. Be prepared to provide a Corrective Action Plan that specifies the actions your system will take and a proposed timeframe for completion.

Discussion – In addition, we reviewed the following items, and included some links for your information. Keep in mind, you may find these web pages easier if you use the following key word WADOH, then search the site for Drinking Water.

* ODW home page: https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx
* SENTRY: https://fortress.wa.gov/doh/eh/portal/odw/si/Intro.aspx

Lead and Copper Rule (LCR). Review the information enclosed on the LCR. The information includes the Public Notice and Certification templates we created for providing notice to the residents recently sampled for Lead and Copper.

Groundwater Rule (GWR). General information on the rule and additional requirements triggered when a coliform sample tests positive for coliform. DOH will use the raw water source samples to evaluate whether additional samples or a more robust source treatment is necessary.

Revised Total Coliform Rule (RTCR). General information on the rule and change in the requirements for Routine Coliform Sampling. Review the enclosed information packet on the RTCR. Note the new requirements for:

* Level 1 Assessment – Coliform detected in both routine and repeat coliform samples,
* Level 2 Assessments – E. Coli detected, or second Level 1 Assessment required within a specific period.
* Change in Repeat and Follow-up sampling requirements.

Water Facilities Inventory (WFI) Form
I included a copy of the WFI with the correct DOE ID for S12 (BAL 852). The DOE ID (ALM 337) is the tag provided for the preliminary source drilled to determine and evaluate, if the site would be acceptable for the new well, Well #12.

By completing this sanitary survey, your water system met the requirements in WAC 246-290-416. DOH will notify you of your next sanitary survey in three to five years. Note, you should not interpret satisfying the requirements of the sanitary survey as meeting other applicable local, state or federal statutes, ordinances and regulations. Accordingly, address other DOH requirements separately from the sanitary survey.

As provided by WAC 246-290-990 (3)(c), a fee is charged to help recover the cost of conducting a sanitary survey. The Department of Health's (DOH) total cost to complete this sanitary survey is $1,513.85. The office of Drinking Water has used state and federal funds to pay $697.85 of this amount. An invoice for the remaining amount due of $816.00 is enclosed.

Thank you again for your help with the successful completion of your sanitary survey. If you have any questions regarding this letter, please contact me at (509) 329-2120 or via email at andres.cervantes@doh.wa.gov.

Sincerely,

Andres R. Cervantes

Andres Cervantes, PE
Regional Engineer
Office of Drinking Water
Division of Environmental Health

Enclosures: Invoice
Survey Checklist
Survey Photos

cc: Yakima Health District
Mark Steward, DOH Sanitary Survey Program Manager

STATE OF WASHINGTON
Department of Health
OFFICE OF DRINKING WATER
SANITARY SURVEY INSPECTION

INVOICE

SUNNYSIDE, CITY OF
SUNNYSIDE CITY OF
818 E EDISON
SUNNYSIDE, WA 98944

WS ID: 85400
Invoice No: 45781
Invoice Date: 03/10/2021
Due Date: 04/24/2021

WS NAME: SUNNYSIDE CITY OF SURVEY DATE: 08/05/2020

DESCRIPTION	QTY	COST	AMOUNT
Scheduling, Research, Prep	1.00	x $102.00	$102.00
Survey Field Work	4.00	x $102.00	$408.00
Survey Documentation	3.00	x $102.00	$306.00
		Total Amount Due	**$816.00**

1. **Make checks payable to Department of Health, Federal ID #91-1444603.**
2. For billing questions, please contact Eastern Drinking Water Regional Operations at (509) 329-2100.
3. This invoice is issued in accordance with WAC 246-290-990(3)(c)(iii).
4. For persons with disabilities, this document is available on request in other formats. To submit a request, please call 711 Washington Relay Service.

Please return the bottom portion of this invoice with your check.

Invoice Number: 45781
INVOICE AMOUNT: $816.00

Invoice Date: 03/10/2021
Invoice Due Date: 04/24/2021

WS Name: SUNNYSIDE CITY OF

WS ID: 85400

Reference: SANITARY SURVEY INSPECTION PERFORMED ON 08/05/2020

Please remit to:
ACCOUNTS RECEIVABLE
SANITARY SURVEY PROGRAM
DEPARTMENT OF HEALTH
PO BOX 1099
OLYMPIA, WA 98507-1099

9DWA10597240700 SS000854000X04242100081600

SANITARY SURVEY FEE WORKSHEET

Department of Health
Office of Drinking Water
Sanitary Survey Time Tracking

System Name	Sunnyside, City of	PWS ID #	85400-3
County	Yakima County		
Surveyor	Andres R. Cervantes	Date:	08/05/20

System over 10,000 Connections? NO

	Quantity			Cost
Department of Health Paid Costs	**Hours/Miles**			
Survey program RO Coordination	0.5	$ 102	$	51.00
Survey Program Administrative Support	0.5	$ 102	$	51.00
Travel expenses (Mileage)	255	(# Miles) x ($.337/Mile)	$	85.85
Technical Assistance	2	$ 102	$	204.00
Travel Time <10,000	3	102	$	306.00
Total Department of Health Costs to Perform All Surveys			$	697.85
Water System Paid Costs	**Hours**			
Scheduling, research, prep	1	$ 102	$	102.00
Survey Field Work	4	$ 102	$	408.00
Survey documentation – preparation of survey report to the purveyor	3	$ 102	$	306.00
Additional Water System Paid Costs for systems serving 10,000 or more connections	**Hours**			
	0	$ -	$	-

Completed in conjunction with meetings and site visits in the area.

Total Cost of Survey	$	1,513.85
Costs Covered by DOH	$	697.85
Invoice amount due (Less than 10,000 Connections)	**$**	**816.00**

WASHINGTON STATE DEPARTMENT OF HEALTH
Sanitary Survey Checklist

System Name:	**Sunnyside, City Of**			Survey Date:	**August 5, 2020**
PWS ID#:	**85400 3**	County:	**Yakima**	System Type:	**A-COMM**
Persons Attending Inspection:		**Daniel Tiliano, P W**		**Report Details**	
				Checklist: Pages 25 (1 / 25)	
				Photos: 77	
Inspector's Name:		**Andres R. Cervantes**			

PART A: SUMMARY OF SIGNIFICANT DEFICIENCIES AND SIGNIFICANT FINDINGS

The following is a completed sanitary survey checklist and summary of inspection findings.This completed sanitary survey checklist is the basis for the cover letter you receive from your local health jurisdiction or from the WA Dept. of Health (DOH). The cover letter documents any significant deficiencies or significant findings that must be corrected. The cover letter may also summarize observations concerning compliance with certain rules and offer recommendations you can use to make improvements to the operation and management of your water system. Contact your DOH regional office with any questions you have about this survey.

Bolded and highlighted checklist items represent significant deficiencies that, if left uncorrected, create a significant public health risk. Highlighted checklist items represent significant findings that, if left uncorrected, create a significant risk to the physical safety, security, or reliability of the public drinking water supply. You will be required to take some sort of corrective action for each checklist answer that is **bolded and highlighted** or highlighted.

Significant deficiencies and significant findings identified during this sanitary survey:

Source

S13 (Well #13) **Significant Finding** **See Photo-58; Checklist Page - 18 of 25**

Q 22 **Replace the missing bolt from the wellhead's sanitary seal. Cover was on tight and gasket appeared in place and intact.**

Reservoir

Grandview Reservoirs **Significant Deficiency** **See Photo-73 and Photo-74, Checklist Page 23 of 25**

R1 and R2

Q 73 **Inspect all hatches and locate missing bolts or holes left in the frame from removed equipment / components. Seal any open holes.**

R3 and R4 **Significant Finding** **Provide photographs of questions listed as unknown on Part I and Part I2**

Q 70b. **Inspect R3 (Grandview Reservoir 3) and R4 (Skyline Reservoir), provide photographs of vent, hatch, and roof.**

Significant deficiencies or significant findings identified in the previous sanitary survey that remain unaddressed:

Observations and recommendations identified during this survey

Discussion Items

Groundwater Rule: General information on rule and requirements triggered when a coliform sample tests positive for coliform.

Revised Total Coliform Rule: General information on rule and requirements triggered when a coliform sample tests positive for coliform.

* Specifically, Level 1 and 2 assessments and reporting requirements.

Lead and Copper Rule: General information on rule and public notification requirements for sampling sites.

* Specifically, site specific public notices and certification.

Water Use Efficiency: (WUE) General information on rule and requirements. Requirements include annual monitoring for source water production and reporting to website.

PART B: GENERAL WATER SYSTEM DESCRIPTION and MAP

Provide a general description of the water system including changes, updates, connections, source(s), storage, number of pressure zones, treatment, and control system(s) and alarm(s). Make corrections and updates to the purveyor's water facilities inventory form (WFI).

System consists: See Attached Maps

Sources: 7 - Permanent	Reservoir: 4	Pressure Zones: 3	Treatment System: Disinfection
S06 - (Well 6) S07 - (Well 7) S08 - (Well 8) S09 - (Well 9) S11 - (Well 11) S14 - Wellfield WWF S12 - (Well 12) WWF S13 - (Well 13)	Reservoir G V 1 - 0.85 M.G. Reservoir G V 2 - 0.85 M.G. Reservoir G V 3 - 0.75 M.G. Total 2.5 M.G. Reservoir 4 - 1.0 M.G.	Zone 1 Main zone, BP to Z3 Zone 2 PRV's control flow from Z3 to Z2, Z2 to Z1 Zone 3	Primarily Gas chlorinators at S06, S07, S08, S09. On-Site Generator at S11. Sodium Hypochlorite at S14 (S12 and S13).

PART C: OPERATIONS and MANAGEMENT

	YES	NO	Remarks
1. Community (≤1,000 connections): Has the water system taken the online Capacity Assessment Survey?	☐	☐	N A
2. Were water system records available for your review?	☒	☐	
3. Has the purveyor developed / implemented a Small Water System Management Program or a Water System Plan?	☒	☐	
a. If no, are the following planning documents complete and up to date:			
* Service Area and Facility Map	☒	☐	
* Cross-Connection Control Program	☒	☐	
* Source Water Protection Program	☒	☐	
* Emergency Response Plan	☒	☐	
* Operation and Maintenance Program	☒	☐	
* Coliform Monitoring Plan	☒	☐	
* Component Inventory and Assessment	☒	☐	
* Asset Replacement and Other System Improvements	☒	☐	
* Budget	☒	☐	
4. Does the purveyor plan to make capital improvements in the next 1-3 years? *If yes, describe below*	☒	☐	
5. Is there a backup operator available if the regular one is not available? *If yes, provide contact info below*	☒	☐	
6. Were the water system's current and future water quality monitoring requirements reviewed?	☒	☐	
7. Were water quality sample results and trends reviewed with the purveyor?	☒	☐	
8. Does the system have emergency power?	☒	☐	
9. Does the system experience frequent power outages (>2 per year)? *If yes, explain below*	☐	☒	
10. Does the system experience frequent water outages (>2 per year)? *If yes, explain below*	☐	☒	
11. Does there appear to be adequate reliability provided for this system? *If no, explain below*	☒	☐	

Describe the general level of planning and management documents developed by this water system and any recommendations for additional development, including updates, system management practices and processes, water rates, etc.

Approved plan for the city - May 9, 2018.

In Remarks Section

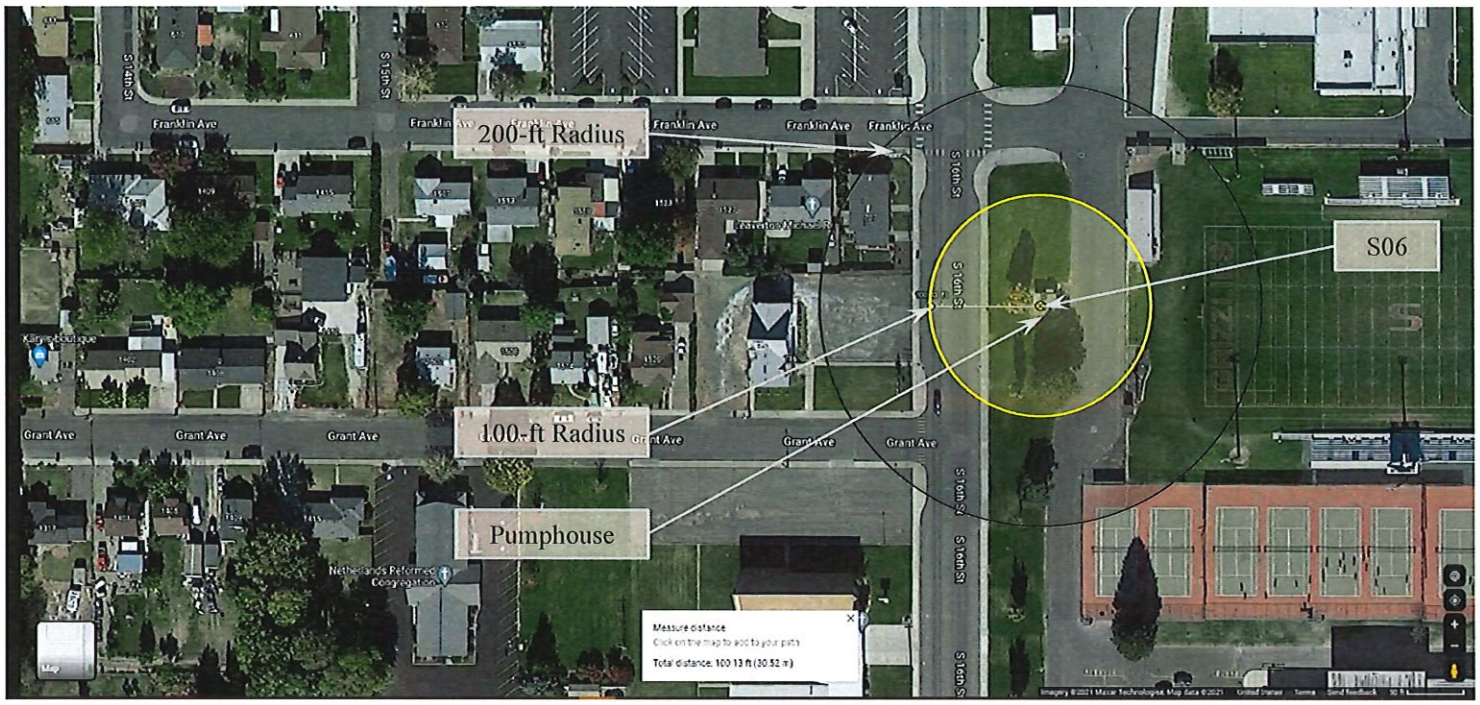
N. U. > Needs Update:

N. A. > Not Applicable:

PART D1: SOURCES (This page may be reproduced to add more sources)								
12. Did you observe a source connected to the water system that is NOT listed on the WFI and in active use?				Yes ☐		No ☒		
a. If so, has the source received written DOH approval? (confirm with DOH post-survey)				Yes ☐		No ☐		
13. DOH Source Number:				S06			S07	
14. Source Name from the WFI: (For example, North Well; Well #2; ABC334.)				Well #6			Well #7	
15. Dept of Ecology Well Tag Number: (Use Well tag ID#, None or Not readable)				AFL 811				
16. Source Use:	P - Permanent	S - Seasonal	E - Emergency	P			P	
				Yes	No	Notes	Yes	No	Notes
17. If this is an emergency source, should it be disconnected?				☐	☒		☐	☒	
18. *Is the source a potential GWI source?*				☐	☐		☐	☒	
WELL (if there is no well, skip to Question 34)				Yes	No	Notes	Yes	No	Notes
19. Is the Sanitary Control Area (SCA) free of unmitigated potential sources of contamination?				☒	☐		☒	☐	
20. Is the wellhead located in a pit or vault?				☐	☒		☐	☒	
21. Is the wellhead at risk of submergence?				☐	☒		☐	☒	
22. Is the well cap sealed, watertight, and free of unprotected openings?				☒	☐		☒	☐	
23. Is the well casing free of any unprotected openings?				☒	☐		☒	☐	
24. Is there a vent on the well?				☒	☐		☒	☐	
a. If yes, is the vent protected? (24 non-corrodible mesh screen or slots)				☒	☐		☒	☐	
25. Are conduits and junction boxes sealed to prevent contaminant entry?				☒	☐		☒	☐	
26. Is the well unreasonably at risk to physical damage?				☐	☒		☐	☒	
27. Is there a raw water source sample tap?				☒	☐		☒	☐	
28. Is the source metered?				☒	☐		☒	☐	
a. If yes, is the source meter read at least monthly?				☒	☐		☒	☐	
b. If yes, are the water production records maintained?				☒	☐		☒	☐	
29. Is the wellhouse properly constructed and maintained? If no, explain below				☒	☐		☒	☐	
30. Is there any evidence of infestation by rodents or other pests?				☐	☒		☐	☒	
31. Is the wellhouse and well adequately protected from unauthorized access and tampering?				☒	☐		☒	☐	
32. Is there a pump control valve or vacuum relief valve without an air gap on the valve discharge pipe?				☐	☒		☐	☒	
33. The source pump and pump controls operational and adequate to prevent chronic water outages or premature pump failure? If no explain below				☒	☐		☒	☐	
SPRING (if there is no spring, skip to question 41)				Yes	No	Notes	Yes	No	Notes
34. Is the spring box (structure, hatch, and overflow) constructed to prevent the entry of contaminants or direct surface drainage? If yes, describe below.				☐	☐		☐	☐	
35. Is there a raw water source sample tap?				☐	☐		☐	☐	
36. Is the source metered?				☐	☐		☐	☐	
a. If yes, is the source meter read at least monthly?				☐	☐		☐	☐	
b. If yes, are the water production records maintained?				☐	☐		☐	☐	
37. Is the springhouse properly constructed and maintained? If no, explain below				☐	☐		☐	☐	
38. Is there any evidence of infestation by rodents or other pests?				☐	☐		☐	☐	
39. Is the springhouse and spring box adequately protected from unauthorized access?				☐	☐		☐	☐	
40. Is the Sanitary Control Area (SCA) free of unmitigated potential sources of contamination?				☐	☐		☐	☐	

Describe and evaluate the source facilities including maintenance, operations, sanitary and security observations and any major change made to the source such as pump replacement, deepening or reconstruction:

PART D1: SOURCES S06: Sanitary Control Area (This page may be reproduced to add more sources)



PART D1: SOURCES S06: Photographs (This page may be reproduced to add more sources)

Photo-1: SCA – Looking West

Direction of 16th St

→ Grassy area / median between street and school lot

Photo-2: SCA – Looking North

School

→ Grassy area / median between street and school lot

Photo-3: DOE ID

AFL 811

Photo-4: Well #6

Surface motor with turbine pump

→ US Motors

→ High Thrust

⇉ 150-hp

→ Vented

→ Sealed watertight

PART D1: SOURCES S06: Photographs (This page may be reproduced to add more sources)

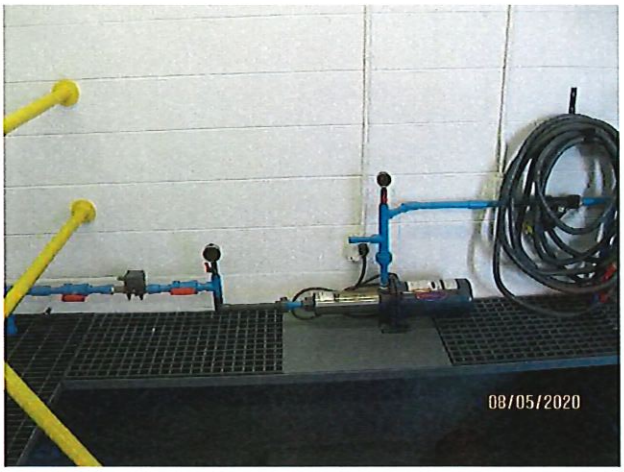
Photo-5: Well #6

Surface motor with turbine pump

- → US Motors
- → High Thrust
- ⇉ 150-hp
- → Vented
- → Sealed watertight

Photo-6: Treatment – Typical for Gas chlorinators

Injection pump – Sta-Rite centrifugal pump



PART D1: SOURCES S07: Sanitary Control Area (This page may be reproduced to add more sources)

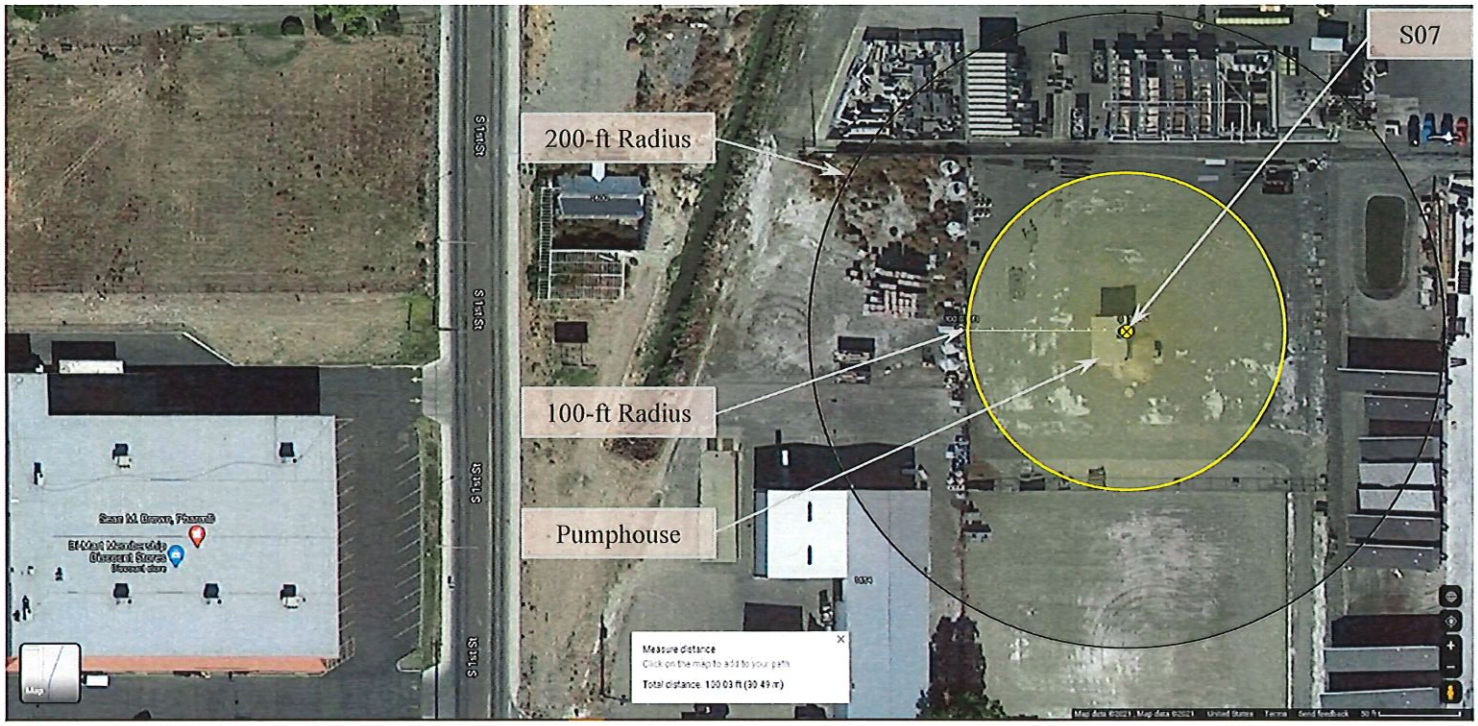
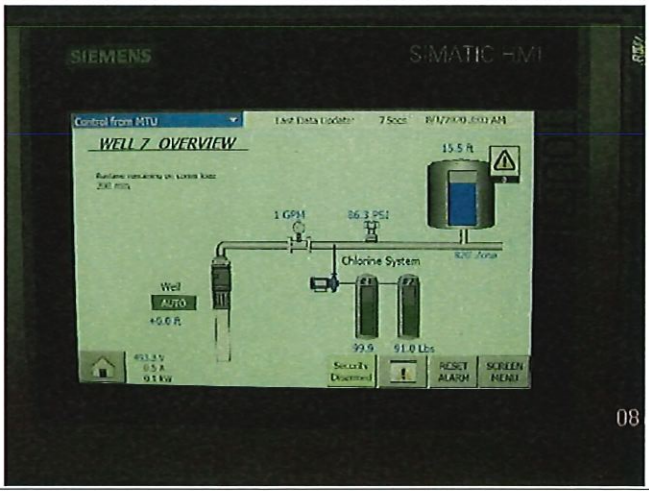


Photo-7: SCADA Screen

Schematic of source and controls

- → Well operation and controls
- → Gas chlorine
- → Typical for most of the wells



PART D1: SOURCES S07: Photographs (This page may be reproduced to add more sources)

Photo-8: SCA – Looking North
Industrial area – Adjacent business
→ Graveled area extends beyond SCA - Fenced

Photo-9: SCA – Looking Northeast
Industrial area – Adjacent business
→ Graveled area extends beyond SCA - Fenced

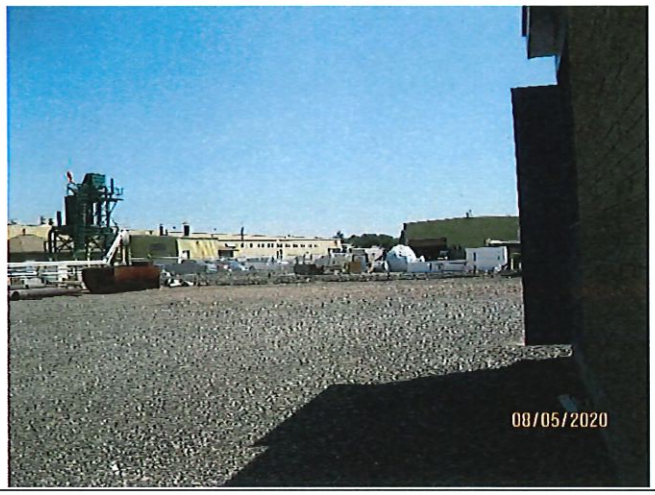


Photo-10: SCA – Looking East
Industrial area – Adjacent business
→ Graveled area extends beyond SCA - Fenced

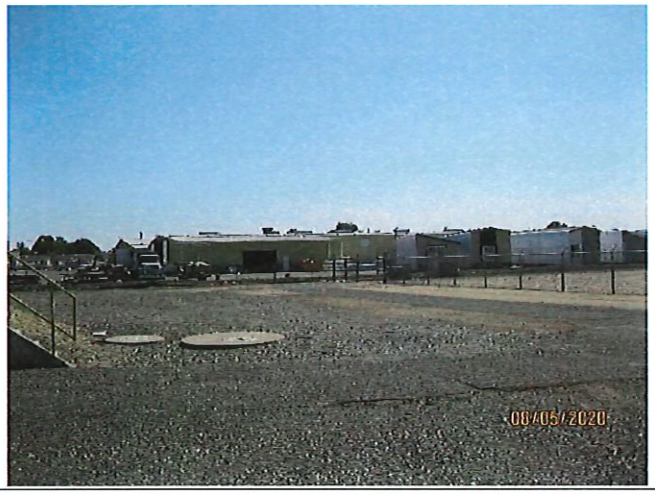


Photo-11: Pumphouse – Vertical Motor
Discharge to system
→ US Motors – 200-hp

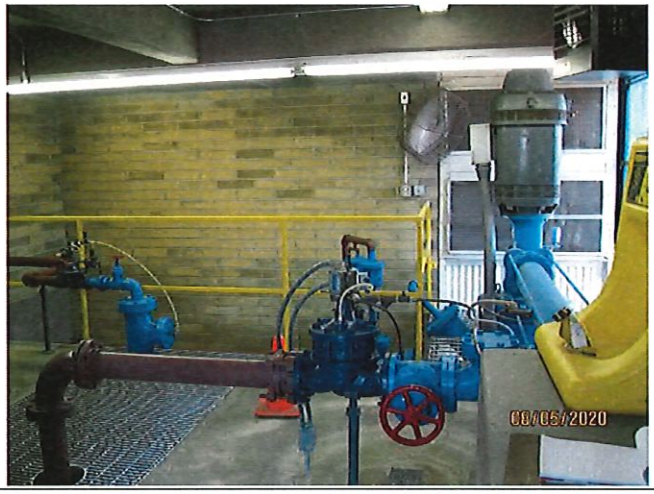


Photo-12: Well #7

Raw Water Sample tap

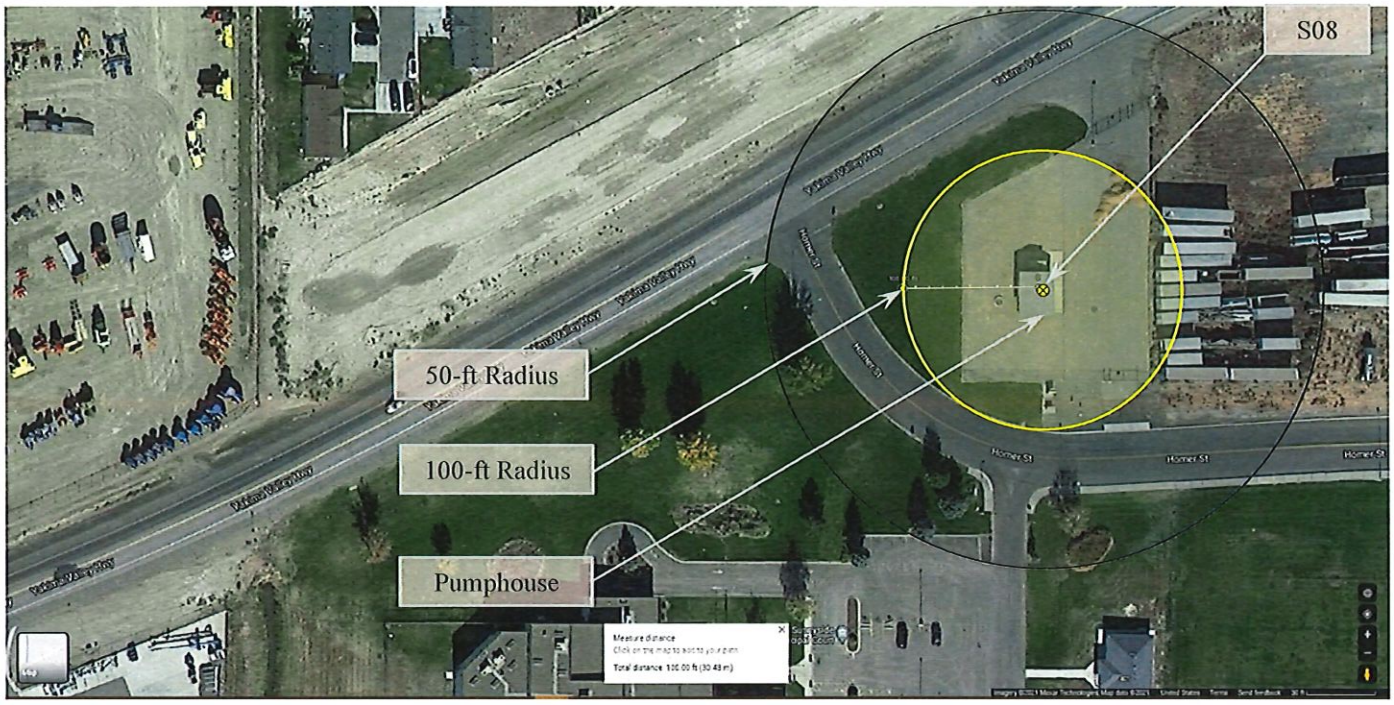
Photo-13: Pumphouse – Vertical Motor
Screened air vent
→ Good condition

PART D2: SOURCES (This page may be reproduced to add more sources)						
12. Did you observe a source connected to the water system that is NOT listed on the WFI and in active use?				Yes ☐		No ☒
a. If so, has the source received written DOH approval? (confirm with DOH post-survey)				Yes ☐		**No ☐**
13. DOH Source Number:				**S08**		**S09**
14. Source Name from the WFI: (For example, North Well; Well #2; ABC334.)				**Well #8**		**Well #9**
15. Dept of Ecology Well Tag Number: (Use Well tag ID#, None or Not readable)				**ALF 812**		**AFK 905**
16. Source Use:	P - Permanent	S - Seasonal	E - Emergency	**P**		**P**

	S08 Yes	S08 No	S08 Notes	S09 Yes	S09 No	S09 Notes
17. If this is an emergency source, should it be disconnected?	☐	☒		☐	☒	
18. *Is the source a potential GWI source?*	☐	☒		☐	☒	
WELL (if there is no well, skip to Question 34)	**Yes**	**No**	**Notes**	**Yes**	**No**	**Notes**
19. Is the Sanitary Control Area (SCA) free of unmitigated potential sources of contamination?	☒	☐		☒	☐	
20. Is the wellhead located in a pit or vault?	☐	☒		☐	☒	
21. Is the wellhead at risk of submergence?	☐	☒		☐	☒	
22. Is the well cap sealed, watertight, and free of unprotected openings?	☒	☐		☒	☐	
23. Is the well casing free of any unprotected openings?	☒	☐		☒	☐	
24. Is there a vent on the well?	☒	☐		☒	☐	
a. If yes, is the vent protected? (24 non-corrodible mesh screen or slots)	☒	☐		☒	☐	
25. Are conduits and junction boxes sealed to prevent contaminant entry?	☒	☐		☒	☐	
26. Is the well unreasonably at risk to physical damage?	☐	☒		☐	☒	
27. Is there a raw water source sample tap?	☒	☐		☒	☐	
28. Is the source metered?	☒	☐		☒	☐	
a. If yes, is the source meter read at least monthly?	☒	☐		☒	☐	
b. If yes, are the water production records maintained?	☒	☐		☒	☐	
29. Is the wellhouse properly constructed and maintained? If no, explain below	☒	☐		☒	☐	
30. Is there any evidence of infestation by rodents or other pests?	☐	☒		☐	☒	
31. Is the wellhouse and well adequately protected from unauthorized access and tampering?	☒	☐		☒	☐	
32. Is there a pump control valve or vacuum relief valve without an air gap on the valve discharge pipe?	☐	☒		☐	☐	
33. The source pump and pump controls operational and adequate to prevent chronic water outages or premature pump failure? If no explain below	☒	☐		☒	☐	
SPRING (if there is no spring, skip to question 41)	**Yes**	**No**	**Notes**	**Yes**	**No**	**Notes**
34. Is the spring box (structure, hatch, and overflow) constructed to prevent the entry of contaminants or direct surface drainage? If yes, describe below.	☐	☐		☐	☐	
35. Is there a raw water source sample tap?	☐	☐		☐	☐	
36. Is the source metered?	☐	☐		☐	☐	
a. If yes, is the source meter read at least monthly?	☐	☐		☐	☐	
b. If yes, are the water production records maintained?	☐	☐		☐	☐	
37. Is the springhouse properly constructed and maintained? If no, explain below	☐	☐		☐	☐	
38. Is there any evidence of infestation by rodents or other pests?	☐	☐		☐	☐	
39. Is the springhouse and spring box adequately protected from unauthorized access?	☐	☐		☐	☐	
40. Is the Sanitary Control Area (SCA) free of unmitigated potential sources of contamination?	☐	☐		☐	☐	

Describe and evaluate the source facilities including maintenance, operations, sanitary and security observations and any major change made to the source such as pump replacement, deepening or reconstruction:

PART D2: SOURCES S08: Sanitary Control Area (This page may be reproduced to add more sources)



PART D2: SOURCES S08: Photographs (This page may be reproduced to add more sources)

Photo-14: SCA – Looking Southwest
Direction of Homer St
→ Graveled area within SCA and fenced section

Photo-15: SCA – Looking North
Direction of Yakima Valley Hwy - Pumphouse
→ Graveled area within SCA and fenced section

Photo-16: Pumphouse
Discharge to system
→ Source meter
→ Controls
→ Sample tap
→ Injector

Photo-17: Pump motor
Vertical motor with turbine pump
→ General Electric
→ Tri-Clad
⇉ 125-hp
→ Vented
→ Sealed watertight

PART D2: SOURCES S08: Photographs (This page may be reproduced to add more sources)

Photo-18: Pumphouse
Discharge to system – Alternate view

- → Source meter
- → Control valve
- ⇉ Discharge to waste with airgap
- → Sample tap
- → Injector

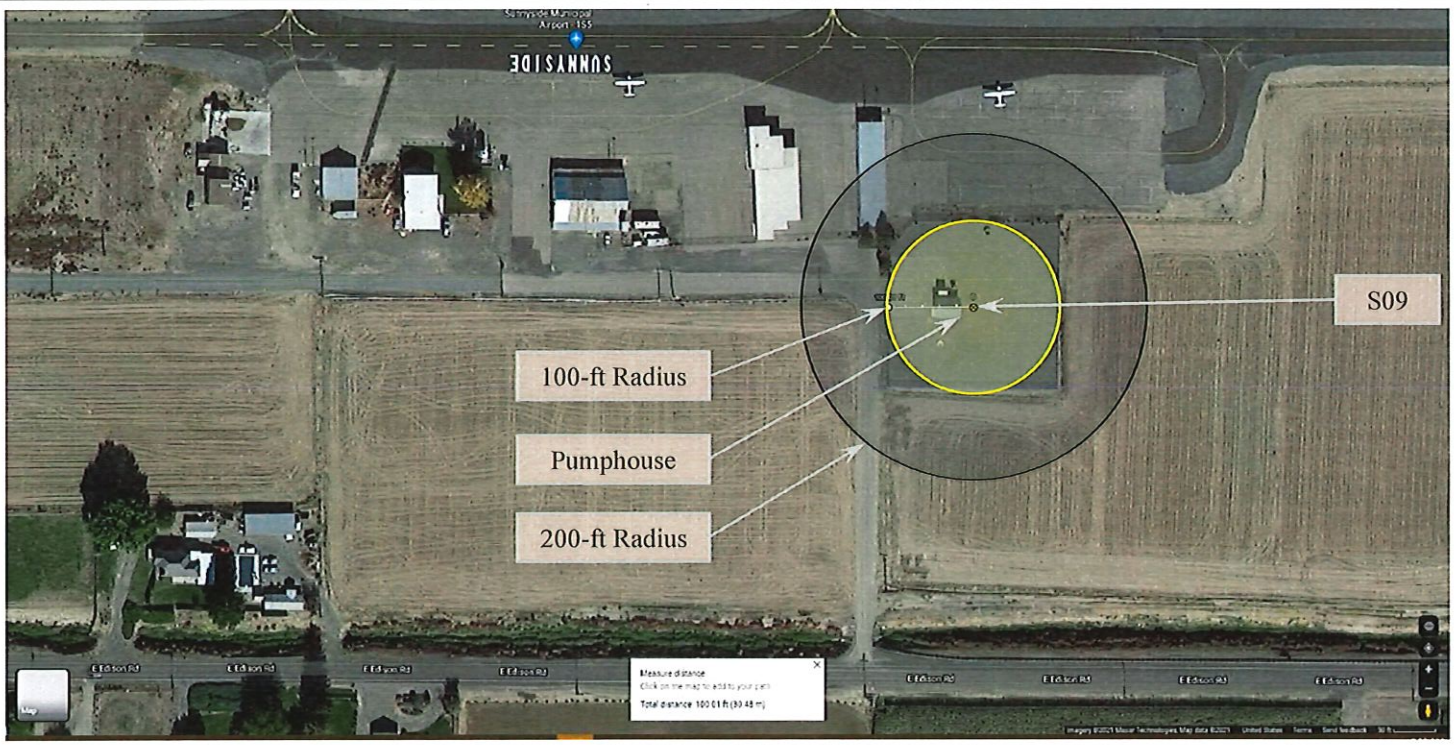
Photo-19: Treatment
Gas Chlorine

- → 150-# cylinders
- → Scaletron
- → US Filter

Photo-20: Treatment – Typical for Gas chlorinators
Injection pump – Sta-Rite centrifugal pump

Photo-21: Treatment – Typical for Gas chlorinators
Sta-Rite – 1 Hp

PART D2: SOURCES S09: Sanitary Control Area (This page may be reproduced to add more sources)



PART D2: SOURCES S09: Photographs (This page may be reproduced to add more sources)

Photo-22: DOE ID
AFK 905

Photo-23: SCA – Looking Southwest
Graveled area within SCA
→ Ag field at the fenced line

Photo-24: SCA – Looking North
Airport
Grassy area extends out of SCA

Photo-25: SCA – Looking East
Airport
→ Fenced area within SCA

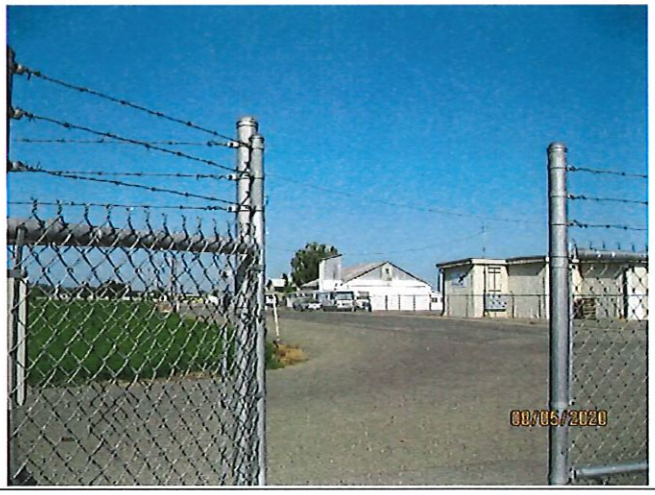


Photo-26: SCA – Looking East
Wellhead
→ Sealed watertight, vented

Photo-27: Pumphouse

Discharge to system

→ Source meter

→ Injector

→ Control valves

→ Raw water sample tap

PART D2: SOURCES S09: Photographs (This page may be reproduced to add more sources)

Photo-28: Well #9

Supply from source

→ Raw water sample tap

→ Pressure gage

Photo-29: Well #9

Supply from source

→ Source meter

→ Injection site

Photo-30: Treatment

Gas Chlorine

→ 150-# cylinders

→ Scaletron

→ US Filter

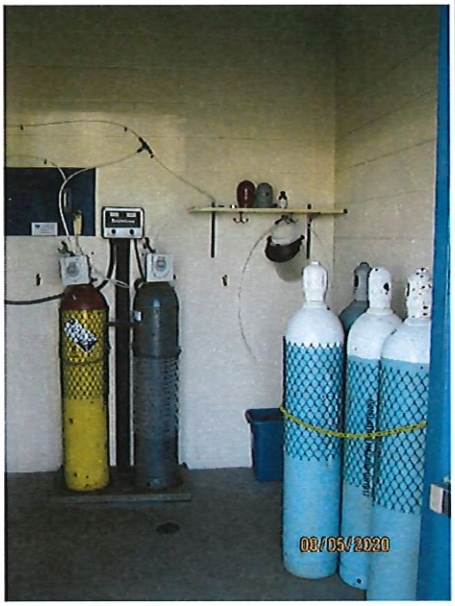


Photo-31: Treatment – Gas Chlorine

Close-up Photo-30

Photo-32: Treatment – Typical for Gas chlorinators

Injection pump – Sta-Rite centrifugal pump

Photo-33: Pumphouse

Booster pump – Baldor – Super E motor

→ 30-Hp

PART D3: SOURCES (This page may be reproduced to add more sources)						
12. Did you observe a source connected to the water system that is NOT listed on the WFI and in active use?				Yes ☐		No ☒
a. If so, has the source received written DOH approval? (confirm with DOH post-survey)				Yes ☐		No ☐
13. DOH Source Number:				S10		S11
14. Source Name from the WFI: (For example, North Well; Well #2; ABC334.)				Well #10		Well #11
15. Dept of Ecology Well Tag Number: (Use Well tag ID#, None or Not readable)				AFL 815		AKN 517
16. Source Use:	P - Permanent	S - Seasonal	E - Emergency	E		P
				Yes / No / Notes		Yes / No / Notes
17. If this is an emergency source, should it be disconnected?				☐ / ☒		☐ / ☒
18. *Is the source a potential GWI source?*				☐ / ☒		☐ / ☐
WELL (if there is no well, skip to Question 34)				Yes / No / Notes		Yes / No / Notes
19. Is the Sanitary Control Area (SCA) free of unmitigated potential sources of contamination?				☒ / ☐		☒ / ☐
20. Is the wellhead located in a pit or vault?				☐ / ☒		☐ / ☒
21. Is the wellhead at risk of submergence?				☐ / ☒		☐ / ☒
22. Is the well cap sealed, watertight, and free of unprotected openings?				☒ / ☐		☒ / ☐
23. Is the well casing free of any unprotected openings?				☒ / ☐		☒ / ☐
24. Is there a vent on the well?				☒ / ☐		☒ / ☐
a. If yes, is the vent protected? (24 non-corrodible mesh screen or slots)				☒ / ☐		☒ / ☐
25. Are conduits and junction boxes sealed to prevent contaminant entry?				☒ / ☐		☒ / ☐
26. Is the well unreasonably at risk to physical damage?				☐ / ☒		☐ / ☒
27. Is there a raw water source sample tap?				☒ / ☐		☒ / ☐
28. Is the source metered?				☒ / ☐		☒ / ☐
a. If yes, is the source meter read at least monthly?				☐ / ☐		☒ / ☐
b. If yes, are the water production records maintained?				☐ / ☐		☒ / ☐
29. Is the wellhouse properly constructed and maintained? If no, explain below				☒ / ☐		☒ / ☐
30. Is there any evidence of infestation by rodents or other pests?				☐ / ☒		☐ / ☒
31. Is the wellhouse and well adequately protected from unauthorized access and tampering?				☒ / ☐		☒ / ☐
32. Is there a pump control valve or vacuum relief valve without an air gap on the valve discharge pipe?				☐ / ☒		☐ / ☒
33. The source pump and pump controls operational and adequate to prevent chronic water outages or premature pump failure? If no explain below				☒ / ☐		☒ / ☐
SPRING (if there is no spring, skip to question 41)				Yes / No / Notes		Yes / No / Notes
34. Is the spring box (structure, hatch, and overflow) constructed to prevent the entry of contaminants or direct surface drainage? If yes, describe below.				☐ / ☐		☐ / ☐
35. Is there a raw water source sample tap?				☐ / ☐		☐ / ☐
36. Is the source metered?				☐ / ☐		☐ / ☐
a. If yes, is the source meter read at least monthly?				☐ / ☐		☐ / ☐
b. If yes, are the water production records maintained?				☐ / ☐		☐ / ☐
37. Is the springhouse properly constructed and maintained? If no, explain below				☐ / ☐		☐ / ☐
38. Is there any evidence of infestation by rodents or other pests?				☐ / ☐		☐ / ☐
39. Is the springhouse and spring box adequately protected from unauthorized access?				☐ / ☐		☐ / ☐
40. Is the Sanitary Control Area (SCA) free of unmitigated potential sources of contamination?				☐ / ☐		☐ / ☐

Describe and evaluate the source facilities including maintenance, operations, sanitary and security observations and any major change made to the source such as pump replacement, deepening or reconstruction:

PART D3: SOURCES S10: Sanitary Control Area (This page may be reproduced to add more sources)

PART D3: SOURCES S10 / S11: Photographs (This page may be reproduced to add more sources)

Photo-34: SCA – Looking North
Residential / Commercial district
→ SCA consists of fenced area and 7th St

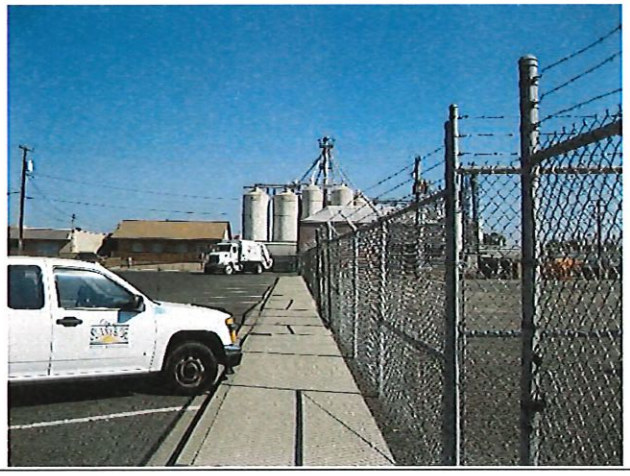


Photo-35: SCA – Looking East
SCA – Lot and Denny Blaine Park
→ Pumphouse and S11

Photo-36: DOE ID
AKN 517

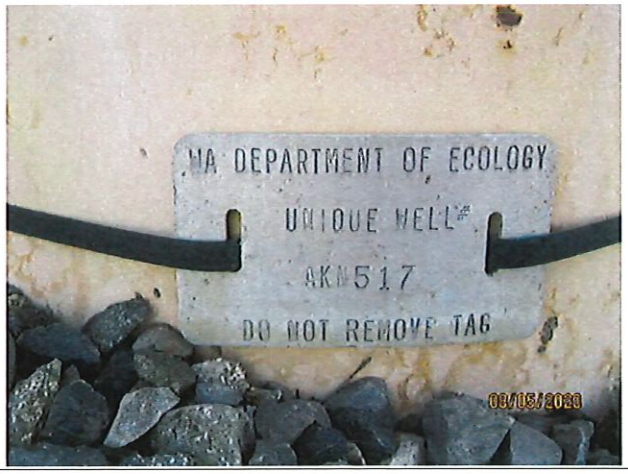


Photo-37: S11 – Wellhead
Sanitary seal – Vented and sealed watertight

PART D3: SOURCES S11: Photographs (This page may be reproduced to add more sources)

Photo-38: Pumphouse
Source meter, sample tap

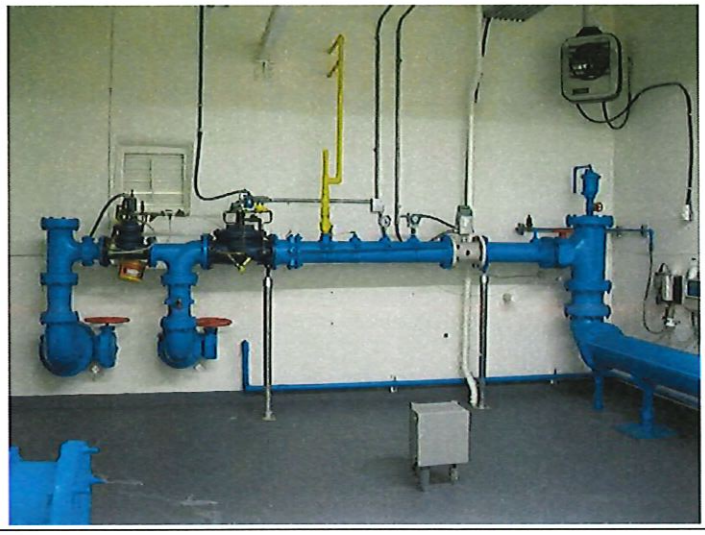


Photo-39: Pumphouse
Source meter, sample tap

Photo-40: Pumphouse
Source meter, sample tap, injector

Photo-41: Pumphouse - Treatment
Clor-Tec – Onsite generator, controls

Photo-42: Pumphouse - Treatment
Clor-Tec, Onsite generator – Injector pumps

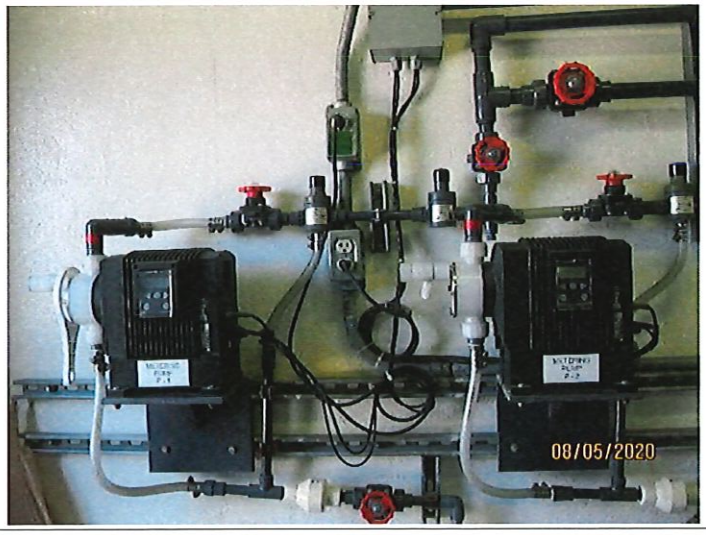
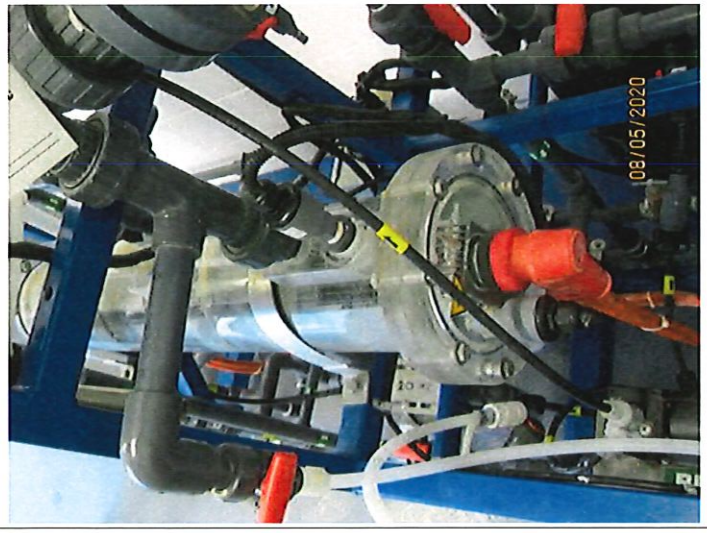


Photo-43: Pumphouse - Treatment
Clor-Tec, Onsite generator – Electrolytic cell



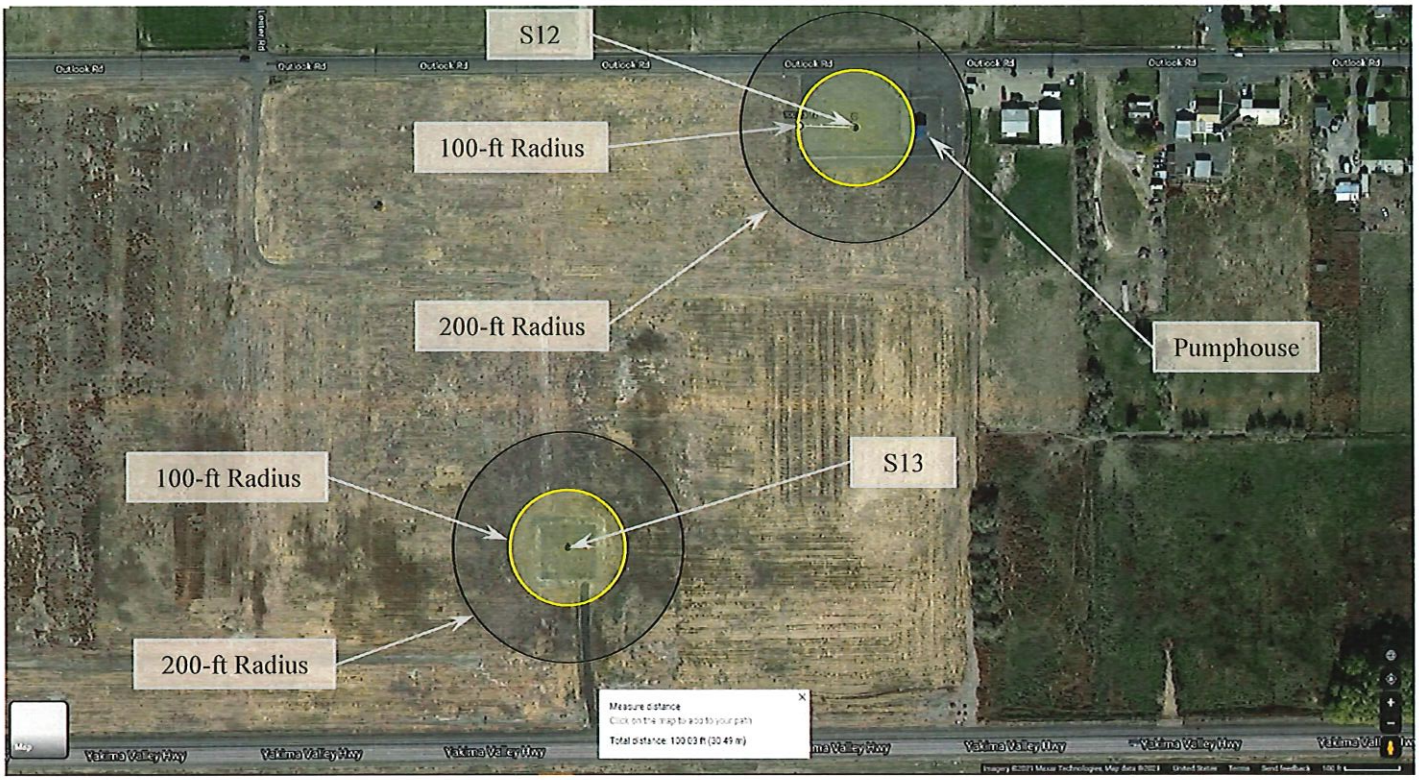
PART D4: SOURCES S14: Wellfield (S12 & S13) (This page may be reproduced to add more sources)						
12. Did you observe a source connected to the water system that is NOT listed on the WFI and in active use?				Yes ☐		No ☒
a. If so, has the source received written DOH approval? (confirm with DOH post-survey)				Yes ☐		No ☐
13. DOH Source Number:				S12		S13
14. Source Name from the WFI: (For example, North Well; Well #2; ABC334.)				Well #12		Well #13
15. Dept of Ecology Well Tag Number: (Use Well tag ID#, None or Not readable)				BAL 852		BAL 875
16. Source Use:	P - Permanent	S - Seasonal	E - Emergency	P		P

	S12 Yes	S12 No	S12 Notes	S13 Yes	S13 No	S13 Notes
17. If this is an emergency source, should it be disconnected?	☐	☒		☐	☒	
18. *Is the source a potential GWI source?*	☐	☒		☐	☒	
WELL (if there is no well, skip to Question 34)	**Yes**	**No**	**Notes**	**Yes**	**No**	**Notes**
19. Is the Sanitary Control Area (SCA) free of unmitigated potential sources of contamination?	☒	☐		☒	☐	
20. Is the wellhead located in a pit or vault?	☐	☒		☐	☒	
21. Is the wellhead at risk of submergence?	☐	☒		☐	☐	
22. Is the well cap sealed, watertight, and free of unprotected openings?	☒	☐		☐	☒	1
23. Is the well casing free of any unprotected openings?	☒	☐		☒	☐	
24. Is there a vent on the well?	☒	☐		☒	☐	
a. If yes, is the vent protected? (24 non-corrodible mesh screen or slots)	☒	☐		☒	☐	
25. Are conduits and junction boxes sealed to prevent contaminant entry?	☒	☐		☒	☐	
26. Is the well unreasonably at risk to physical damage?	☐	☒		☐	☒	
27. Is there a raw water source sample tap?	☒	☐		☒	☐	
28. Is the source metered?	☒	☐		☒	☐	
a. If yes, is the source meter read at least monthly?	☒	☐		☒	☐	
b. If yes, are the water production records maintained?	☒	☐		☒	☐	
29. Is the wellhouse properly constructed and maintained? If no, explain below	☒	☐		☐	☐	
30. Is there any evidence of infestation by rodents or other pests?	☐	☒		☐	☒	
31. Is the wellhouse and well adequately protected from unauthorized access and tampering?	☐	☐		☐	☐	
32. Is there a pump control valve or vacuum relief valve without an air gap on the valve discharge pipe?	☐	☐		☐	☐	
33. The source pump and pump controls operational and adequate to prevent chronic water outages or premature pump failure? If no explain below	☐	☐		☐	☐	
SPRING (if there is no spring, skip to question 41)	**Yes**	**No**	**Notes**	**Yes**	**No**	**Notes**
34. Is the spring box (structure, hatch, and overflow) constructed to prevent the entry of contaminants or direct surface drainage? If yes, describe below.	☐	☐		☐	☐	
35. Is there a raw water source sample tap?	☐	☐		☐	☐	
36. Is the source metered?	☐	☐		☐	☐	
a. If yes, is the source meter read at least monthly?	☐	☐		☐	☐	
b. If yes, are the water production records maintained?	☐	☐		☐	☐	
37. Is the springhouse properly constructed and maintained? If no, explain below	☐	☐		☐	☐	
38. Is there any evidence of infestation by rodents or other pests?	☐	☐		☐	☐	
39. Is the springhouse and spring box adequately protected from unauthorized access?	☐	☐		☐	☐	
40. Is the Sanitary Control Area (SCA) free of unmitigated potential sources of contamination?	☐	☐		☐	☐	

Describe and evaluate the source facilities including maintenance, operations, sanitary and security observations and any major change made to the source such as pump replacement, deepening or reconstruction:

1 S13 Q -22 Replace the missing bolt from the wellhead's sanitary seal. See Photo-58 on Checklist Page 18 of 25.

PART D4: SOURCES S14: Sanitary Control Area (This page may be reproduced to add more sources)



PART D4: SOURCES S12: Photographs (This page may be reproduced to add more sources)

Photo-44: DOE ID

BAL 852

Photo-45: SCA – Looking South

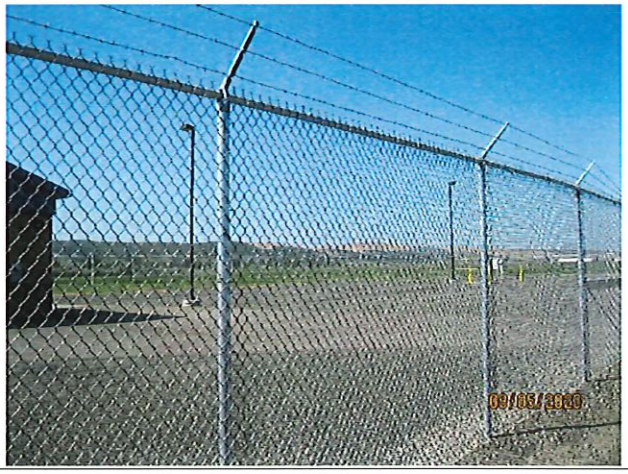
Direction of Yakima Valley Hwy

→ Pumphouse – SCA extends past graveled area to the south

Photo-46: SCA – Looking West

Direction of Yakima Valley Hwy

→ Pumphouse – graveled area extends past SCA



PART D4: SOURCES S12: Photographs (This page may be reproduced to add more sources)

Photo-47: SCA – Looking East

Direction of Outlook Rd

→ Graveled lot primarily entire SCA

Photo-48: SCA – Looking Southwest

Direction of 16th Yakima Valley Hwy and I-82

→ Graveled lot primarily entire SCA

Photo-49: Well # 12 – Sanitary seal

Vented and sealed watertight

Photo-50: Pumphouse

Supply from S12 and S13 (right and middle pipe from floor), treatment injection point, metered, discharge to system S14 (large diameter pipe on the right)

Photo-51: Supply

Raw water

→ Sample tap installed

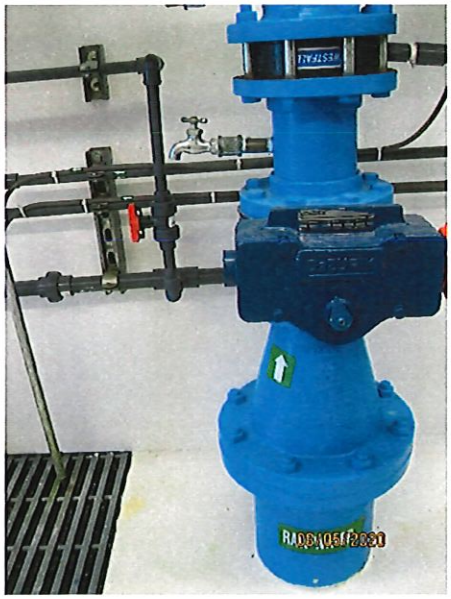


Photo-52: Supply

Raw water

→ Sample tap installed

PART D4: SOURCES S13: Photographs (This page may be reproduced to add more sources)

Photo-53: Discharge to waste

From control valve – Tide Flex Valve

Photo-54: Treatment

Sodium Hypochlorite

→ Identical injection pumps

→ Large capacity solution tank

⇉ Shared tank for injection pumps

Photo-55: DOE ID

BAL 875

Photo-56: SCA – Looking West

Vacant area – previously feed lot

Photo-57: SCA – Looking Northwest

Outlook RD

→ Graveled lot extends beyond SCA

Photo-58: Well #13 – Sanitary seal

Vented, sealed watertight

Required: Replace missing bolt

PART E: DISINFECTION (*if no disinfection, answer question 41 and skip rest of Part E*)	YES	NO
41. Does the operator batch chlorinate the source, the distribution system, or the reservoir just before collecting routine or repeat coliform samples? If yes, provide details below.	☐	☒
42. Did you observe disinfection treatment connected to the water system in active use that is NOT listed on the WFI? *If yes, explain below*	☐	☒
43. Is ultraviolet light (UV) used for disinfecting a drinking water source? *If no, skip to question 46.*	☐	☒
44. Is the UV unit sized for the maximum flow rate, and is there a UV transmittance sensor controlling a solenoid valve or other device to shut off supply if the UV light fails?	☐	☐
45. Describe the UV equipment including: UV Manufacturer and Model Number: Rated capacity (gpm): Cleaning Frequency of Quartz Sleeve: Mo/Yr. UV Light Last Replaced /		
46. Is there continuous chlorination? *If no, skip to Part F*	☒	☐
a. If yes, please measure the free chlorine residual from a representative location in the distribution system. Location description: Free chlorine residual:		
47. Is there a water supply line plumbed directly into a chlorine solution tank without a reduced pressure backflow assembly on the supply line?	☐	☒
48. Is there a post-treatment sample tap?	☒	☐
49. Does the chlorine compound meet NSF/ANSI Standard 60? (household **bleach exempted**)	☒	☐
50. Is a backup chemical feed pump or spare parts for the operating chemical feed pump available onsite?	☒	☐
51. According to the operator, is there a DOH requirement for Chlorine Contact Time? If no, skip to Part F	☐	☒
a. *If yes, measure and record the free chlorine residual at the CT6 compliance location:* *Describe compliance sampling location below – location must be prior to the first service connection downstream of chlorine addition .*		
52. *Is the chlorine pump and pump controls constructed and maintained to provide uninterrupted, reliable CT6 treatment? If no, describe below.*	☐	☐
Describe the chlorination facilities including purpose for chlorination, concerns with maintenance or operations, purveyor's record keeping of monthly reports, and sanitary and security observations: **As noted under Part B each of the sources are equipped with chlorination systems. Gas chlorinators consists of Scaletron automatic scales with USFilter controls.** **Wellfield S14 has bulk sodium hypochlorite with injectors for each source.** **Clor-Tec onsite generator located in the pumphouse for S10 and S11.**		

PART F: TREATMENT	YES	NO	Remarks
53. Is there any treatment other than chlorination or UV in use? If no, skip Part F.	☐	☒	
54. Did you observe a treatment process connected to the water system in active use that is NOT listed on the WFI? If yes, describe below.	☐	☒	
55. Is there a water supply line plumbed directly into a chemical solution tank (e.g., fluoride saturator) without a reduced pressure backflow assembly on the supply line?	☐	☒	
56. Are primary contaminant treatment facilities (e.g. nitrate, corrosion control, arsenic) operating properly? If no, describe below	☐	☐	
57. Do the water treatment chemicals meet NSF / ANSI Standard 60?	☐	☐	
58. Is there a post-treatment sample tap?	☐	☐	
Describe the treatment facilities including purpose for treatment, concerns with maintenance or operations, purveyor's record keeping of monthly reports, and sanitary and security observations:			

PART G: BOOSTER PUMPING FACILITIES and CONTROLS	YES	NO	Remarks
59. Are there any booster pumps in use? If no, skip Part G	☒	☐	
60. Are the booster pumps in good working condition? If no, explain below	☒	☐	
61. Are pump and pump controls operational and adequate to prevent chronic water outages or premature pump failure? If no explain below	☒	☐	
62. If there is a booster pump house/pump station, is it secure against unauthorized entry? If no, explain below	☒	☐	
63. Is the booster pump house/pump station properly constructed and maintained? If no, explain below	☒	☐	

Describe and evaluate the pump facilities and controls including maintenance, operations, sanitary and security observations:

Photo-59: SCADA Screen
Direction of 16th St
→ Grassy area / median between street and school lot

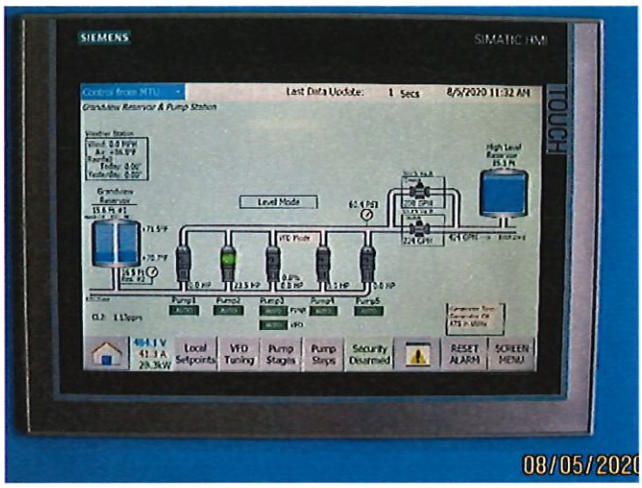


Photo-60: Booster Station
Plumbing
→ Set to level in reservoirs

Photo-61: Booster Station
5-centrifugal motors

Photo-62: Booster Station
Similar set-up for each pump, controls, sample taps, pressure gages, etc.

PART H: PRESSURE TANKS	YES	NO	Remarks
64. Are there any pressure tanks in use? *If no, skip Part H*	☐	☒	
65. For systems using an air compressor, is the compressor an oil-free type or does it use food-grade oil?	☐	☐	
66. Are valves present to isolate pressure tanks for maintenance or repair?	☐	☐	
67. Is the pressure there an ASME pressure relief valve installed between each pressure tank and any shutoff valve? (See DOH publication #331-429)	☐	☐	
68. Are the pressure tanks in good working condition? If no, explain below?	☐	☐	

Describe and evaluate the pressure tanks including maintenance, operational, sanitary and security observations:

PART II: FINISHED WATER STORAGE Grandview Reservoirs									
69. Is there a finished water storage tank in use? *If no, skip Part I*	☒Yes ☐No								
Reservoir Names and Capacity	**Reservoir 1 0.85-MG**			**Reservoir 2 0.85-MG**			**Reservoir 3 0.75-MG**		
70. If unable to physically inspect the storage tank hatch, vent, roof, or overflow outlet, select the method you discussed with the purveyor to document their condition:	Yes	No	Unk	Yes	No	Unk	Yes	No	Unk
a Reviewed and discussed maintenance records and recent photos	☒	☐		☒	☐		☐	☐	
b Photos will be taken and mailed by purveyor; additional follow-up required by DOH	☐	☐		☐	☐		☒	☐	
c Purveyor unable or unwilling to document; additional follow-up required by DOH	☐	☐		☐	☐		☐	☐	
71. Is the storage tank protected from unauthorized entry or vandalism? *	☒	☐	☐	☒	☐	☐	☒	☐	☐
72. Is the reservoir roof free of any unprotected openings? *	☒	☐	☐	☒	☐	☐	☐	☐	☒
73. Is the access hatch constructed and sealed to prevent the entry of contaminants? *	☐	☐	☒	☐	☐	☒	☐	☐	☒
74. If able to open hatch, is the stored water free of visible contaminants? *	☒	☐	☐	☒	☐	☐	☐	☐	☐
75. Is there a dedicated air vent on the storage tank?	☒	☐	☐	☒	☐	☐	☒	☐	☐
a. If yes, is the air vent constructed to prevent the entry of contaminants? *	☒	☐	☐	☒	☐	☐	☐	☐	☒
76. Is the overflow line constructed to prevent contaminants from entering the tank? *	☒	☐	☐	☒	☐	☐	☒	☐	☐
77. Does the overflow line discharge near ground level?	☒	☐	☐	☒	☐	☐	☒	☐	☐
78. Is the overflow line discharge area protected from potential erosion?	☒	☐	☐	☒	☐	☐	☒	☐	☐
79. Does the overflow line discharge into a storm drain or surface water?	☐	☒	☐	☐	☒	☐	☐	☒	☐
a. If yes, is there an air gap at the discharge of the overflow OR does the overflow drop at least 34 vertical feet, between where the overflow enters the reservoir and the receiving water body?	☐	☐	☐	☐	☐	☐	☐	☐	☐
80. Does the overflow line discharge directly into a sanitary sewer without an air gap?	☐	☒	☐	☐	☒	☐	☐	☒	☐
81. Can the reservoir be isolated from the rest of the water system and be drained through a dedicated drain line?	☒	☐	☐	☒	☐	☐	☒	☐	☐
82. When was the tank inspected last? *	Recently			-			2017		
83. What is the tank cleaning frequency? *	regularly			as			scheduled		
84. Does the tank size, operation, and internal piping configuration provide adequate water turnover (i.e. separate inlet/outlet, baffling or mixing to reduce stagnant water)? *If no, explain below*	☒	☐	☐	☒	☐	☐	☒	☐	☐
85. Does the tank show sign of excessive leakage, significant structural cracking, or advanced concrete spalling?	☐	☒	☐	☐	☒	☐	☐	☒	☐

Describe and evaluate the finished water storage facilities including volume, operational drawdown, configuration of the inlet/outlet piping, any concerns about operations and maintenance, and sanitary and security observations: (* - **Explain No answers Here**).

Tanks maintained and cleaned on regular schedule.

R1 & R2 Q-73 **Seal closed any open holes left when equipment was removed from hatch frame. See Photo-73 and Photo-74, Checklist Page 23 of 25.**

R3 Q - 70b. Grandview Reservoir 3, need inspection and photographs of vent, hatch, and roof.

PART II: FINISHED WATER STORAGE	Grandview Reservoirs

Photo-63: Buried cement tanks
Landscaped surrounds top of reservoirs

Photo-64: Buried cement tanks
Landscaped surrounds top of reservoirs – Access hatch

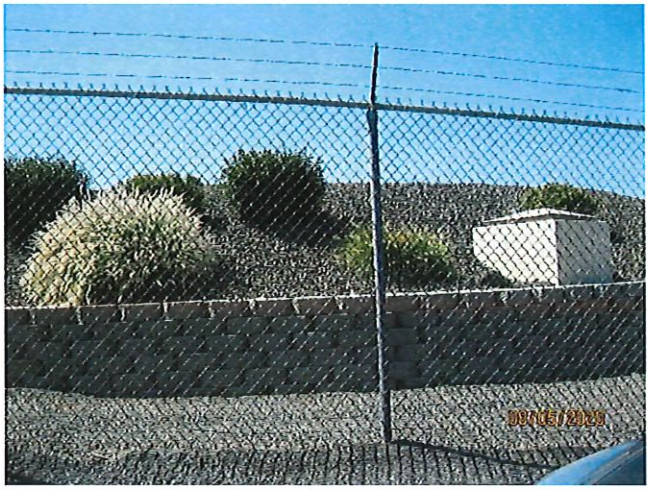


Photo-65: Buried cement tanks
Landscaped surrounds top of reservoirs – Sidewalk middle of both reservoirs, leads to booster station

Photo-66: Above Ground Tank
All have same overflow elevation and share common drain line

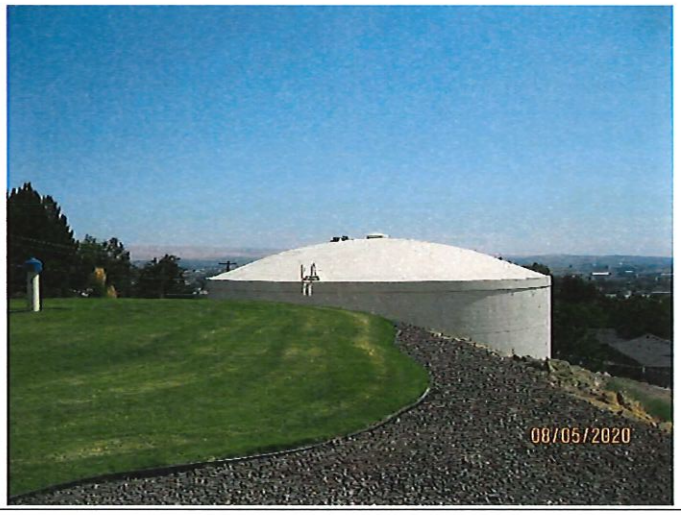


Photo-67: Buried cement tanks
Landscaped surrounds top of reservoirs – Screened air vents

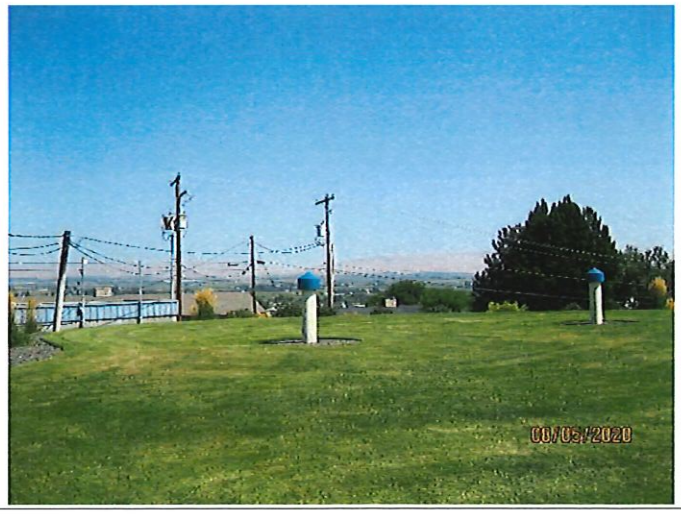
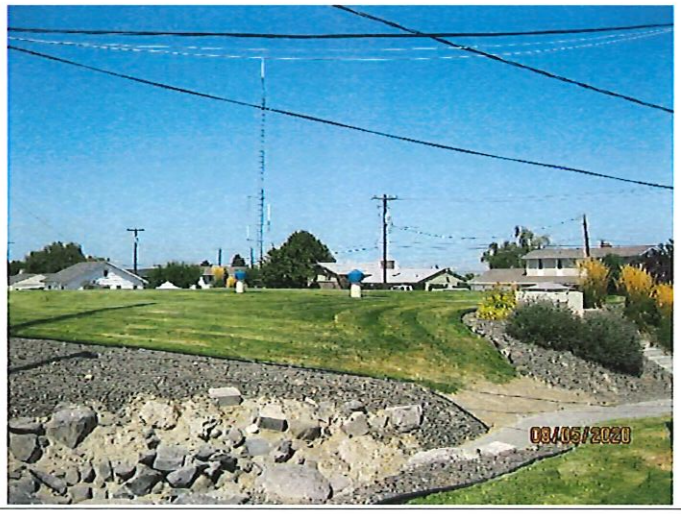


Photo-68: Buried cement tanks
Landscaped surrounds top of reservoirs – Screened air vents



PART II: FINISHED WATER STORAGE	Grandview Reservoirs

Photo-69: Buried cement tanks
Screened air vents – Good condition

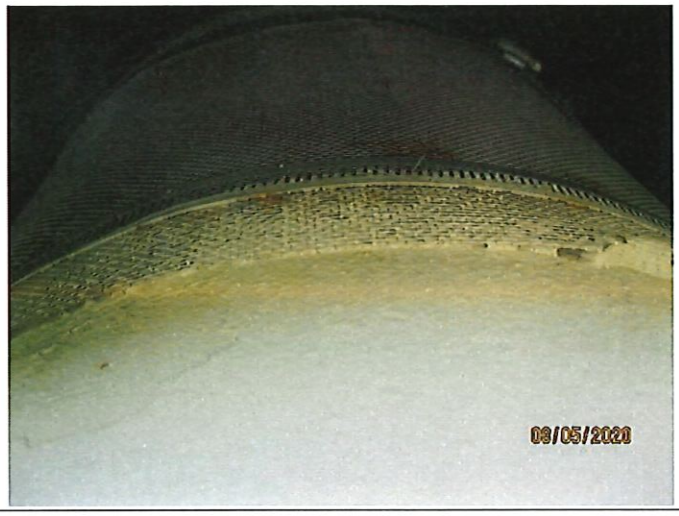


Photo-70: Buried cement tanks – Access hatch
Cover overlaps framed section, gasket in good condition

Photo-71: Buried cement tanks
Landscaped surrounds top of reservoirs – Access hatch

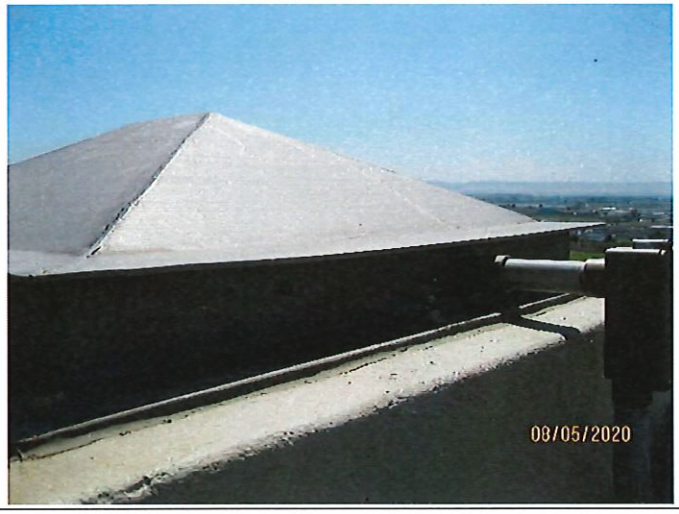


Photo-72: Buried cement tanks
Landscaped surrounds top of reservoirs – Access hatch

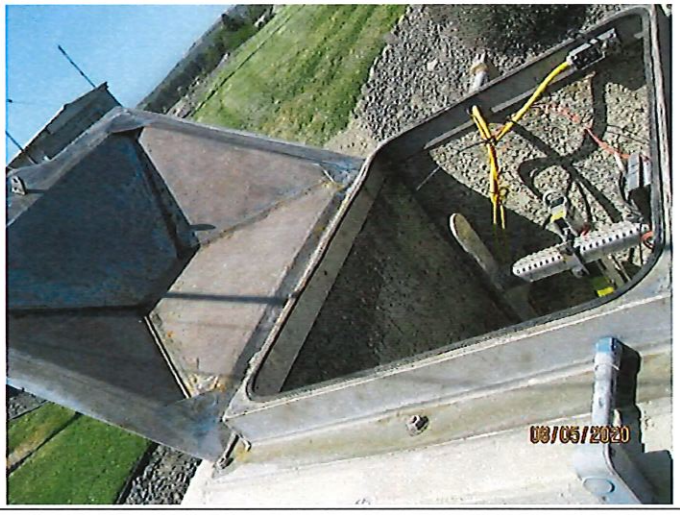


Photo-73: Buried cement tanks – Access hatch
Access ladder, gasket in good condition - Open holes side of frame
Required: Seal open holes watertight

Photo-74: Buried cement tanks – Access hatch
Open holes left from mounting bracket form controls
Required: Seal holes watertight

PART I2: FINISHED WATER STORAGE			
69. Is there a finished water storage tank in use? *If no, skip Part I*	☒ Yes	☐ No	
Reservoir Name and Capacity	**Reservoir 4 (Skyline) 1-MG**		
70. If unable to physically inspect the storage tank hatch, vent, roof, or overflow outlet, select the method you discussed with the purveyor to document their condition:	**YES**	**NO**	**Remarks**
a. Reviewed and discussed maintenance records and recent photos	☐	☐	
b. Photos will be taken and mailed by purveyor; additional follow-up required by DOH	☒	☐	See below
c. Purveyor unable or unwilling to document; additional follow-up required by DOH	☐	☐	
71. Is the storage tank protected from unauthorized entry or vandalism? *	☒	☐	
72. Is the reservoir roof free of any unprotected openings? *	☐	☒	
73. Is the access hatch constructed and sealed to prevent the entry of contaminants? *	☐	☒	
74. If able to open hatch, is the stored water free of visible contaminants? *	☐	☐	
75. Is there a dedicated air vent on the storage tank?	☒	☐	
a. If yes, is the air vent constructed to prevent the entry of contaminants? *	☐	☒	
76. Is the overflow line constructed to prevent contaminants from entering the tank? *	☒	☐	
77. Does the overflow line discharge near ground level?	☒	☐	
78. Is the overflow line discharge area protected from potential erosion?	☒	☐	
79. Does the overflow line discharge into a storm drain or surface water?	☐	☒	
a. If yes, is there an air gap at the discharge of the overflow OR does the overflow drop at least 34' vertical, between where the overflow enters the reservoir and the receiving water body?	☒	☐	
80. Does the overflow line discharge directly into a sanitary sewer without an air gap?	☐	☒	
81. Can the reservoir be isolated from the rest of the water system and be drained through a dedicated drain line?	☒	☐	
82. When was the tank inspected last? *			
83. What is the tank cleaning frequency? *	**Regular Intervals**		
84. Does the tank size, operation, and internal piping configuration provide adequate water turnover (i.e. separate inlet/outlet, baffling or mixing to reduce stagnant water)? *If no, explain below*	☒	☐	
85. Does the tank show any sign of excessive leakage, significant structural cracking, or advanced concrete spalling?	☐	☒	

Describe and evaluate the finished water storage facilities including volume, operational drawdown, configuration of the inlet/outlet piping, any concerns about operations and maintenance, and sanitary and security observations: **(* Explanations / information).**

Q - 70b. Inspect Skyline Reservoir, provide photographs of vent, hatch, and roof.

Photo-75: Skyline Reservoir
Standpipe, Steel welded – Access ladder

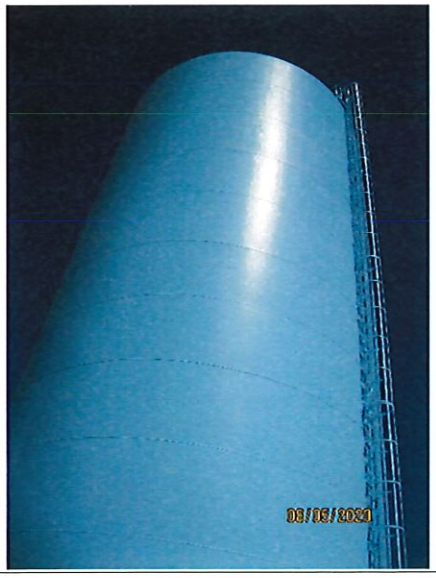


Photo-76: Skyline Reservoir
Access ladder – Locking lower gate

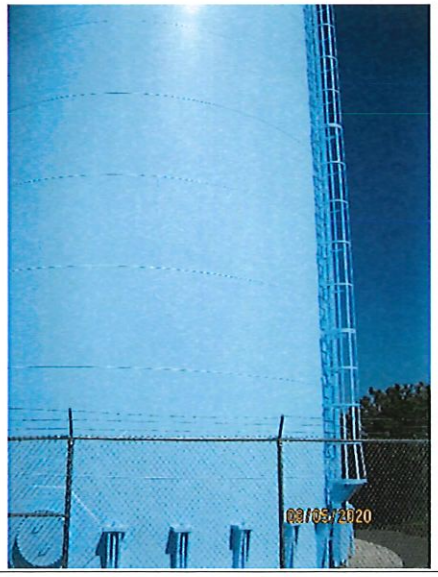


Photo-77: Skyline Reservoir
Overflow pipe – Flap-valve

PART J: DISTRIBUTION SYSTEM	YES	NO
86. Is a complete, up to date and accurate map of the distribution system maintained?	☒	☐
87. Does the system provide adequate pressure throughout the distribution system? If no, explain below	☒	☐
88. Are proper procedures followed for disinfection of new construction or repairs?	☒	☐
89. Are there blow-offs to flush the system?	☒	☐
90. Does the purveyor seasonally or annually flush the distribution system? *If yes, describe below*	☒	☐
91. Does the purveyor exercise its distribution system valves? *If yes, describe below*	☒	☐

Describe and evaluate the distribution system including maintenance, operational, sanitary and security observations:

Regular maintenance by staff.

PART K: CROSS CONNECTION CONTROL (CCC)	YES	NO	Remarks
92. Does the water system serve a single connection? *If yes, refer the purveyor to the Uniform Plumbing Code and skip Part K*	☐	☒	
93. Is the water system known to serve one or more high health hazard premises, such as those listed in Table 9 in WAC 246-290-490? *If yes, describe the premise(s) below.*	☐	☒	
94. Has the purveyor established the legal authority to implement a CCC program (i.e., formally adopted an ordinance, resolution, by-laws, or other document defining the purveyor's CCC program requirements, and empowering the purveyor to enforce them)?	☒	☐	
95. Has the purveyor designated a CCC Specialist (CCS) to be in responsible charge of the CCC program?	☒	☐	
95a. If yes, has the CCS conducted a hazard evaluation to identify high health hazard premises?	☒	☐	
95b. If yes, has the purveyor completed installation of a backflow prevention assembly on the service line to each identified high health hazard premise?	☒	☐	
96. Has each testable backflow prevention assembly installed for premises isolation been tested by a DOH certified backflow assembly tester (BAT) within the past 12 months?	☒	☐	
97. Did you observe the end of a hose connected to the potable water system submerged in a pool, hot tub, watering trough, or other non-potable body of water observed during the survey?	☐	☒	
98. <u>This question only applies to a facility operating a sewage dump station:</u> Is there a sewage dump station without a reduced pressure backflow assembly on the water supply at the dump station?	☐	☒	

Additional cross connection control program comments:

PART L: OPERATOR				
99.	Is the operator of the water system certified?	☒ Yes	☐ No	☐ NR
100.	Describe the operator's certification level (if certified), duration of employment with this water system, relationship with the system (e.g., contract operator, SMA, direct hire employee, volunteer, temporary or owner), and duties and responsibilities. **WTPO 3, WSDM 3**			
101.	Does the operator conduct self-inspections of the water system? If ye, describe frequency and scope of these self inspections below.	☒ Yes	☐ No	☐ NA
102.	Is the operator performing measurements and calibration of water treatment monitoring equipment consistent with manufacturer recommendations? If no describe below.	☒ Yes	☐ No	☐ NA
103.	Is the operator using proper inputs to treatment plant operations reports, such as correct volume, peak flow rate, time, and making the proper calculations? If no, describe below.	☒ Yes	☐ No	☐ NA
104.	Does the operator take compliance water quality samples at the proper location? If no, describe below.	☒ Yes	☐ No	☐ NA

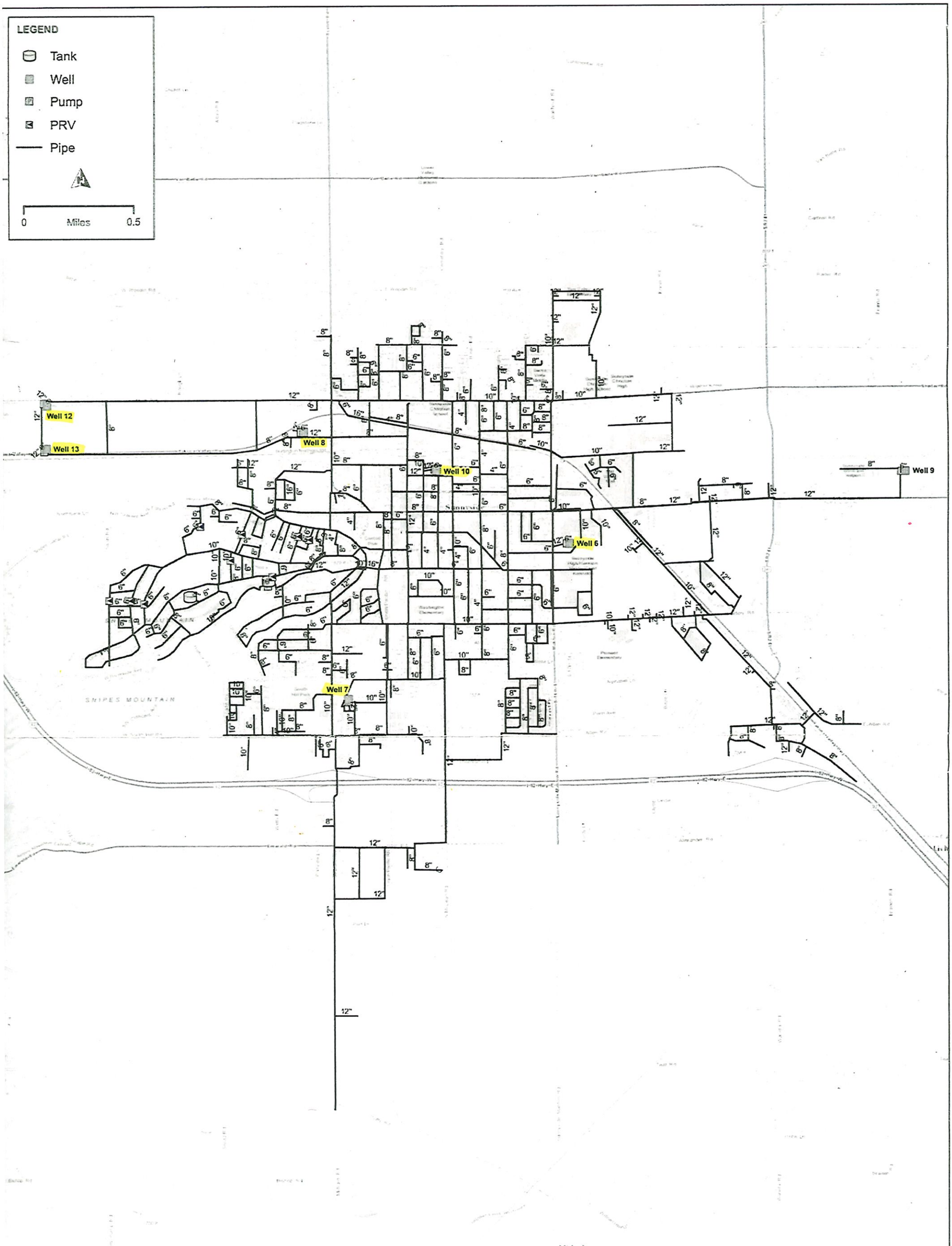
Additional operator comments: **Multiple operators / employees complete operation and maintenance of the water system.**

PART M: FIELD NOTES AND OTHER

Descriptions of any water quality tests, physical measurements, or simple repairs completed during the inspection:
Tested the chlorine residual down at volunteer fire station. Lower than normal residual.

PART N: SUPPLEMENTAL NOTES AND SAFETY CONCERNS

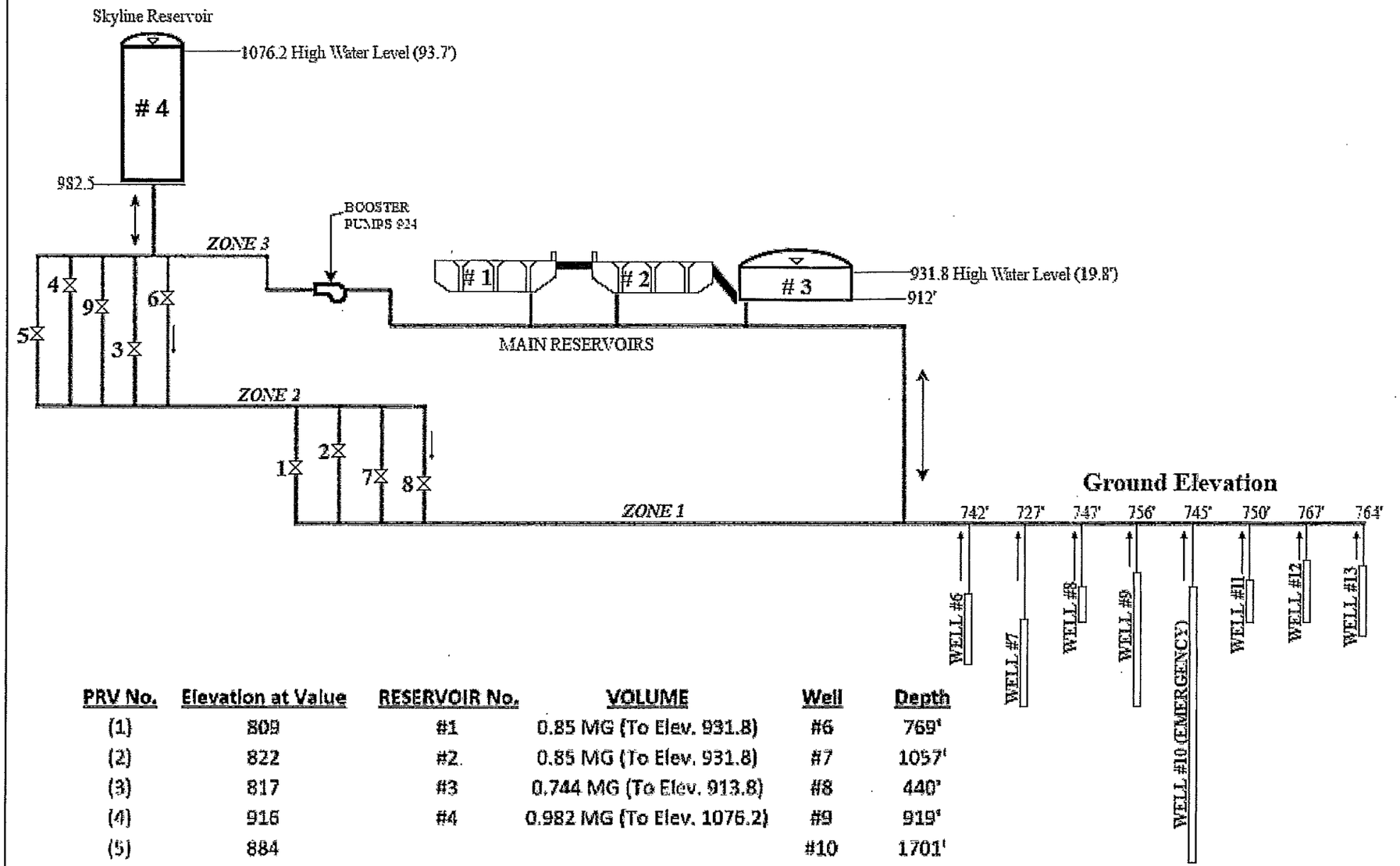
Supplemental comments from other parts of the checklist, and documentation of field safety concerns:



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

CITY OF SUNNYSIDE
WATER DISTRIBUTION SYSTEM (2011)

Figure 3-2 Water System Schematic



PRV No.	Elevation at Value	RESERVOIR No.	VOLUME	Well	Depth
(1)	809	#1	0.85 MG (To Elev. 931.8)	#6	769'
(2)	822	#2	0.85 MG (To Elev. 931.8)	#7	1057'
(3)	817	#3	0.744 MG (To Elev. 913.8)	#8	440'
(4)	916	#4	0.982 MG (To Elev. 1076.2)	#9	919'
(5)	884			#10	1701'
(6)	914			#11	435'
(7)	803			#12	397'
(8)	802			#13	431'
(9)	909				

FIGURE 5.2
Water System Schematic
2016

City of SUNNYSIDE WASHINGTON

10

Well Logs

HLA Engineering and Land Surveying, Inc.

STATE OF WASHINGTO
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT Appli.#6475

WELL LOG No...../.....-.....

Date April 12, 19 63

Record by Driller

Source Driller's Record

Location: State of WASHINGTON

County Yakima

Area

Map

.....¼ .....¼ sec 30 T 10 N., R 23 E. W.

Diagram of Section

Drilling Co. Don E. Gray

Address 228 South 2nd St., Yakima, Washington

Method of Drilling Date Sept. 6, 19 62

Owner City of Sunnyside

Address Sunnyside, Washington

Land surface, datum ..... ft above below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	See detailed log with file		
	Log of Well #3 also ;included		
	[illegible]		
	[illegible]		
	Casing: 24" from 0 to 80'		
	20" from 0 to 233'		
	16" from 0 to 500'		
	16" from 500 to 769'		
	SWL: 600 gpm on April 5, 1963		
	Yields 1570 gpm with 189 DD after 12 hours		
	2 minute recovery		

(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)

Turn up

Sheet ..... of ..... sheets

10/23-30M1
File number

City of Sunnyside, City Source #6

Well Tagging Form

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Unique Well Tag No: AFL 811 ✓

PWS ID # 85400 S06

RECORD VERIFICATION (check ✓ one)

- ☐ Well Report available *(please attach this form to the well report and submit it to the Ecology Regional Office near you)*
- ☐ Verification inconclusive
- ☐ Well Report not available

WELL OWNERSHIP, IF DIFFERENT FROM WELL REPORT

First Name: _____ Last Name: _____

Street Address: _____

City: _____ State: _____

LOCATION OF WELL, IF DIFFERENT FROM WELL REPORT

Well Address: _____

City: _____ County: _____

T. 10 N. R. 22E ☐ W.M. Sec. 30 NW 1/4 of the SW ¼

FOR AGENCY USE ONLY

Latitude _____ ° _____ ' _____ " _____

Longitude _____ ° _____ ' _____ " _____

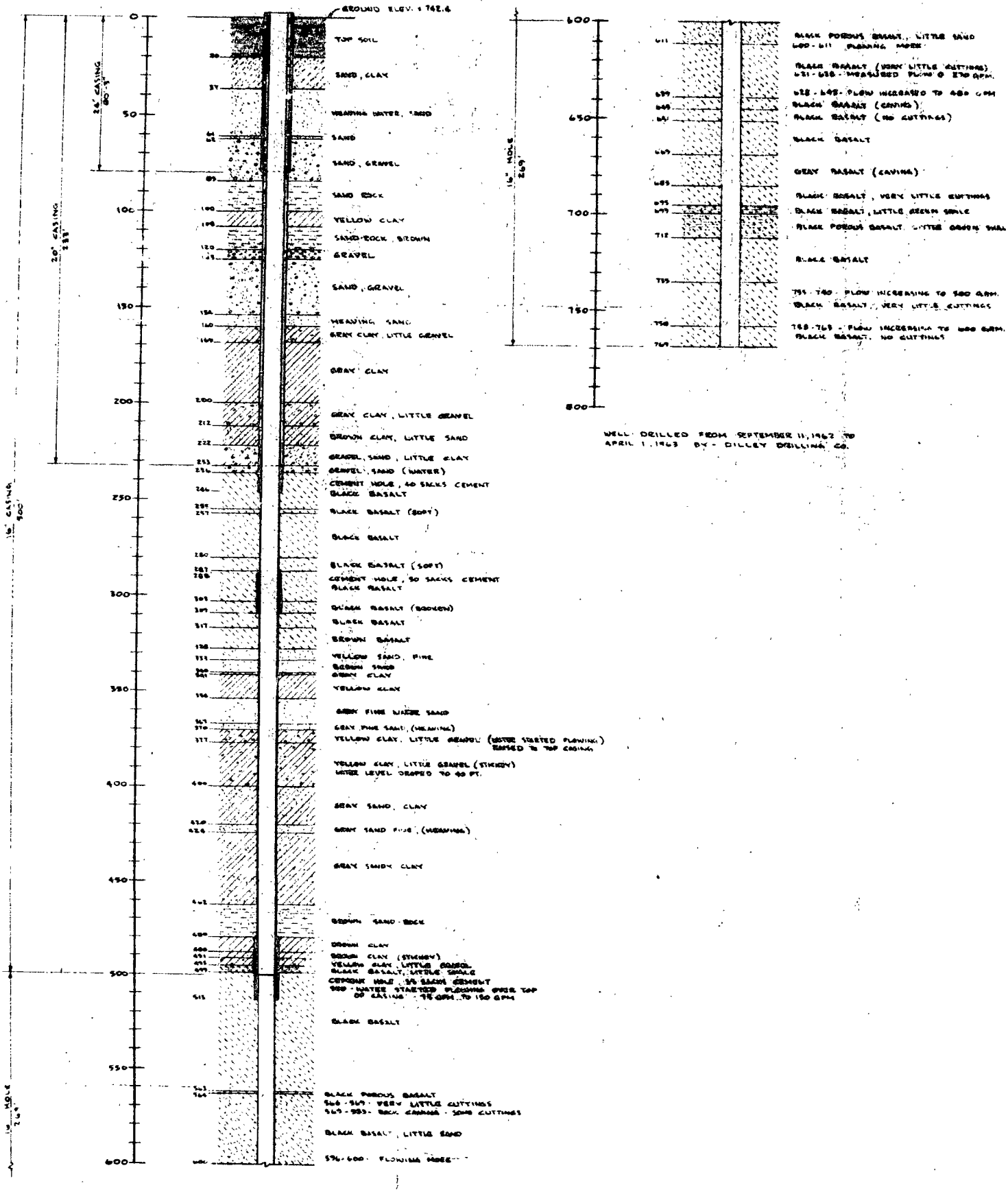
- ☐ GPS
- ☐ Topographic Map
- ☐ Survey
- ☐ Computer generated

Elevation at land surface _____ feet/meters *(circle one)*

- ☐ Digital Altimeter
- ☐ Topographic Map
- ☐ Other _____

Additional information, if available:

- ☐ Location marked on topographic map *(please attach)*
- ☐ Location marked on air photo *(please attach)*



WELL DRILLED FROM SEPTEMBER 11, 1962 TO APRIL 1, 1963 BY - DILLEY DRILLING CO.

G. W. Cook
4795

City of Sunnyside # 4795

835 GRANT
OLYMPIA, WASHINGTON

RECORD BY WELL DRILLER OR OTHER CONSTRUCTOR OF WORKS FOR WITHDRAWAL OF GROUND WATER

Under Permit No. G. W. 6173

("The well driller or other constructor of works for the withdrawal of public ground waters shall be obligated to furnish the permittee a certified record of the factual information necessary to show compliance with the provisions of this section." Sec. 8, Chap. 263, Laws of 1945.)

1. City of Sunnyside, Sunnyside, Washington
(Name and address of owner of well or other works for withdrawal of water)

2. Type; name or number of works where water is taken Well No. 6
(Well, tunnel or infiltration trench)

3. Date on which work on well or other structure was started Sept. 6, 1962

4. Date on which work was completed April 12, 1963

5. If work on well or other structure was abandoned, give date

and reason for abandonment

6. DESCRIPTION OF WORKS:

(a) WELL: Depth 769 ft. Diameter 24x20x16 in. or ft. Dug or drilled drilled

Flowing or pump well Both Water Temp.

IF PUMP WELL: Type and size of pump is 1500 GPM

Type and size of motor or engine is

Depth from ground surface to water level before pumping flowing feet

After continuous operation for 12 (At least four) hours, the measured discharge of the pump is

1570 g.p.m., and the drawdown of water level is 189 feet
(Pumping level minus static water level)

Recovery data (taken after pump has been shut off) (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level
0	189	2 minute record	
1/2 Min.	80		
1-1/2 Min.	30		
2 Min.	Flowing		

Date of test

IF FLOWING WELL: Measured discharge 600 g.p.m. on April 5, 1963 (Date)

Shut-in pressure at ground surface lbs. per sq. in. on (Date)

Water is controlled by Valve (not completed)
(Cap, valve, etc.)

CASING: (Give diameter, commercial specifications and depth below ground surface of each casing size.)

24 in. diameter st. wright from 0 to 80 ft.

20 in. diameter st. wright from 0 to 233 ft.

16 in. diameter st. wright from 0 to 500 ft.

16 in. diameter open hole from 500 to 769 ft.

Describe and show depth of shoe, plug, adapter, liner or other details:

Perforated casing or screens:

_____ (Number per foot and size of perforations, or describe screen) from _____ to _____ ft.

from _____ to _____ ft.

from _____ to _____ ft.

from _____ to _____ ft.

from _____ to _____ ft.

Log of Well or Tunnel: (Describe each stratum or formation clearly, indicate if water bearing, and give thickness and depth as indicated.)

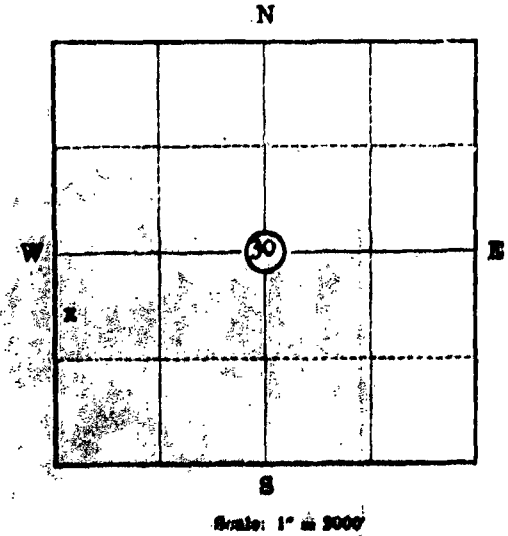
MATERIAL	Thickness (Feet)	Depth to bottom (Feet)
Log attached		
See detailed log with file.		
Log of well #3 also included		

(b) **Infiltration Trench or Tunnel:** Type _____

Dimensions: _____
(Tunnel—length, course, and cross-sectional size) (Trench—minimum and maximum depths)

Bottom width _____ ft. Discharge _____ g.p.m. Date of test _____

Position of water bearing stratum with reference to portal of tunnel _____



Scale: 1" = 2000'

Sec. 30 Twp. 10N Rge. 23 EWM

Show approximate location of well or other works with (X) on section plat at left.

_____
Signature of well driller or other contractor

Don E. Gray

228 South 2nd St., Yakima, Washington
Address

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

DEPARTMENT OF ECOLOGY State of Washington

Construction/Decommission *("x" in circle)*

☒ Construction 465139

☐ Decommission *ORIGINAL INSTALLATION*

Notice of Intent Number _____

PROPOSED USE: ☐ Domestic ☐ Industrial ☒ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK: Owner's number of well (if more than one) 5

☐ New well ☒ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☒ Cable ☐ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 16 inches, drilled _____ ft. Depth of completed well _____ ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded _____" Diam. from _____ ft. to _____ ft.
☒ Liner installed 12" Diam. from 0 ft. to 523 ft.
☐ Threaded _____" Diam. From _____ ft. to _____ ft.

Perforations: ☒ Yes ☐ No

Type of perforator used Torch

SIZE of perfs 3/4 in. by 12 in. and no. of perfs 4 from 6 ft. to 7 ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 245 ft

Material used in seal Existing

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 4 ft. below top of well Date 08/09/2012

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

CURRENT

Notice of Intent No. WE14920

Unique Ecology Well ID Tag No. AFL811

Water Right Permit No. Cert 04795

Property Owner Name City of Sunnyside #6

Well Street Address 16 th Street

City Sunnyside County Yakima

Location NW1/4-1/4 SW1/4 Sec 30 Twn 10 R 23 EWM ☒ Or WWM ☐
(s, t, r Still REQUIRED)

Lat/Long Lat Deg _____ Lat Min/Sec _____
Long Deg _____ Long Min/Sec _____

Tax Parcel No. (Required) 23103032001

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Install 12" x .375 Steel	0	523
12 3/4" Cement Basket	503	504
Grout annulas	10	503
Neat cement		

DEPT OF ECOLOGY Received OCT 15 2012 CENTRAL REGION OFFICE

Start Date 07/24/2012 Completed Date 08/09/2012

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Michael Robinson	Drilling Company Robinson Drilling & Development, Inc.
Driller/Engineer/Trainee Signature	Address 4902 Viewland Drive
Driller or trainee License No. 1544	City, State, Zip Yakima , WA, 98908
IF TRAINEE: Driller's License No:	Contractor's Registration No. ROBINDD938QE Date 08/27/2012
Driller's Signature:	

File Original and First Copy with the Division of Water Management
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

Page 1 of 2 Application No

STATE OF WASHINGTON

Permit No

(1) OWNER: Name Sunnyside Port District Address Box 353; Sunnyside, Washington

(2) LOCATION OF WELL: County Yakima SW ¼ NW ¼ Sec. 36 T. 10 N. R. 22E. W.M.

and distance from section or subdivision corner 750' NNE of W ¼ Corner Sec. 36

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)....
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 24" - 8" inches.
Drilled 1,057 ft. Depth of completed well 1,057 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 24" Diam. from 0 ft. to 98'7" ft.
Threaded ☐ 20" Diam. from 0 ft. to 421'6" ft.
Welded ☒ 16" Diam. from 0 ft. to 541'2" ft.

Perforations: Yes ☒ No ☐
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 541 ft.
Material used in seal Cement
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level.... 720 ft.
Static level ft. below top of well Date
Artesian pressure 4 lbs. per square inch Date 3-13-74
Artesian water is controlled by Cap and Valve (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? driller
Yield: 458 gal./min. with 300 ft. drawdown after 8 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 7 Nov 73
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow 30 g.p.m. Date 7 Nov 73
Temperature of water 75 Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
Soil	0	5
Gray Sand and Silt	5	11
Brown Silt, Trace Fine Sand	11	52
Brown Silt and Coarse Sand	52	69
Brown Silt	69	71
Brown Silt and Coarse Sand	71	88
Red Sand and Silt	88	91
Brown Silt, Sand & Small Gravel	91	118
Light Brown Clay, Sand, and Small Gravel	118	186
Light Brown Sticky Clay and Small Gravel	186	216
Blue Clay	216	249
Brown Clay	249	257
Green Brown Clay and Sand	257	280
Hard Green Brown Sandstone	280	299
Soft Brown Sandstone	299	321
Green Brown Clay	321	354
Blue Clay	354	389
Dark Brown Clay	389	445
Blue Clay	445	534
Gray Basalt Rock	534	540
Hard Gray Basalt Rock	540	678
Hard, Sticky Blue Clay	678	731
White fine Sand (Well started flowing)	731	739
Gray Sticky Clay	739	818
Hard Gray Basalt Rock	818	903
Cracks in Gray Basalt Rock (Well started flowing over 12" Pipe)	903	906
Very Hard Gray Basalt Rock	906	941
Gray-Black Hard Rock and Cinders (Caving Formation)	941	967
Very Hard Gray Basalt Rock	967	1010

Work started 24 Nov 72 Completed 13 Mar 74

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME (Person, firm, or corporation) (Type or print)

Address

[Signed] (Well Driller)

License No. Date

S. F. No. 7356—OS—(Rev. 5-69)—5-69. 1/25/74 (USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy with the Division of Water Management
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT Page 2 of 2

STATE OF WASHINGTON

Application No

Permit No

(1) OWNER: Name Sunnyside Port District Address Box 353 Sunnyside, Washington

LOCATION OF WELL: County . ¼ ¼ Sec T N, R WM

Fig and distance from section or subdivision corner

(2) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)
New well ☐ Method Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well inches
Drilled ft Depth of completed well ft

(6) CONSTRUCTION DETAILS:

Casing installed: 12" Diam from 0 ft to 828 ft.
Threaded ☐ 10" Diam from 767 ft to 967 ft.
Welded ☒ 8" Diam from 926 ft to 1026 ft

Perforations: Yes ☒ No ☐
Type of perforator used Torch
SIZE of perforations ¼ in by ¼ in.
4 per/ft perforations from 887 ft to 927 ft.
6 per/ft perforations from 986 ft to 1026 ft.
perforations from ft to ft.

Screens: Yes ☐ No ☐
Manufacturer's Name
Type Model No
Diam Slot size from ft to ft.
Diam Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☐ Size of gravel
Gravel placed from ft to ft.

Surface seal: Yes ☐ No ☐ To what depth? ft.
Material used in seal
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level ft below top of well Date
Artesian pressure lbs per square inch Date
Artesian water is controlled by (Cap, valve, etc)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? driller
Yield 600 gal/min with 6' 10½" ft drawdown after 10 hrs.
" 800 " 18' 6½" " 18 "
" 1000 " 31' 2½" " & 32 hr. 30 Min

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
0	32' 5"	10 mn.	3' 2"	1 hr.	1' 11"
1 mn.	5' 0"	20 mn.	2' 7"	1 hr 15mn	1' 8 3/4"
1.	4' 4"	30mn	2' 4"	1.	Flowing

Date of test 2 Mar 74
Bailer test gal/min with ft. drawdown after hrs.
Artesian flow 500 g.p.m. Date 13 Mar 74
Temperature of water 75 Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation

MATERIAL	FROM	TO
Soft Black Basalt Cinders	1010	
(Increased from 30 GPM to 500 GPM) Flowing		1022
Porous Black Basalt Rock	1022	1057

Work started 24 Nov, 19 72 Completed 13 Mar, 19 74

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

NAME Chas. Jurgman Drilling Co.
(Person, firm or corporation) (Type or print)

Address 115 Rees - P.O.Box 624 Walla Walla, Wa.

[Signed] (Well Driller)

License No. 428 Date 18 Mar. 19 74

S.F. No 1238—02—(Rev 5-69)—5-69 (USE ADDITIONAL SHEETS IF NECESSARY)

DOH No. 065

WASHINGTON STATE DEPARTMENT OF ECOLOGY

UNIQUE WELL I D. NUMBER ABR059
X Y Z 1 2 3

WELL TAGGING FORM

Date of Field Visit 7-20-94 By R. Handley

ADDITIONAL WELL IDENTIFIERS

Department of Health System ID Number 854003 Source Number SO07

USGS Site Identification _____

RECORD VERIFICATION

- ☑ Well Report available *(please attach)*
- ☐ Well Report not available
- ☐ Verification inconclusive

WELL OWNERSHIP, IF DIFFERENT FROM WELL REPORT

Name CITY OF SUNNYSIDE

Street address 818 E. EDISON AVE. SUNNYSIDE, WA 98944

City _____ State _____

LOCATION OF WELL, IF DIFFERENT FROM WELL REPORT

Well Address 200 50 Hill RD

City Sunnyside County YAKIMA

T. 10 N. R. 22 E WM Sec. 36 SW ¼ of the NW ¼

Latitude _____ ° _____ ' _____ "
Longitude _____ ° _____ ' _____ "

- ☐ GPS (raw data)
- ☐ GPS (corrected)
- ☐ Topographic Map
- ☐ Survey
- ☐ Computer generated
- ☐ Other _____

Elevation at land surface 727. (feet)/meters *(circle one)*

- ☐ Digital Altimeter
- ☐ Topographic Map
- ☐ Other _____

Additional information, if available:

☒ Location marked on ~~topographic~~ CITY map *(please attach)*

☐ Location marked on air photo *(please attach)*

Water Right # _____ Priority Date June 28 1973

Circle one: Application Permit (Certificate) Claim Exempt

WELL CHARACTERISTICS

Physical Description of Well (size of casing, type of well, housing, etc.): SEE ATTACHED

Location of Well Identification Tag: NONE

Was Supplemental Tag needed for ease of identifying well?

☒ NO ☐ YES

If yes, where was tag placed? _____

Scale 1:24,000 (1"=2,000')

D	C	B	A
E	F	G	H
M	L	K	J
N	P	Q	R

SECTION _____

Indicate the location of the well within the Section by drawing a dot at that point.

COMMENTS: _____

Please attach this form to the Well Report and submit it to the Department of Ecology Water Resources Program Headquarters, Well Identification Program, P.O. Box 47600, Olympia, WA 98504-7600

WELL # 7

Note: Carbon paper will not reproduce from pencil writing. Please check that all WRR is automatically reproduced on each underlying copy.

1st Original and First Copy with the Director, Department of Water Resources
2nd Copy — Owner's Copy
3rd Copy — Driller's Copy

WATER WELL REPORT Page 1 of 2

STATE OF WASHINGTON

Application No. _____
Permit No. _____

(1) OWNER Name: Sunnyside Port District Address: Box 353, Sunnyside, Washington

(2) LOCATION OF WELL County: Yakima NW¼ NW¼ Sec. 36 T. 10 N. R. 22E. W.M.
Bearing and distance from section or subdivision corner 750' NW of NW Corner Sec. 36

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (If more than one) _____
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 24" — 8" inches
Drilled 1,057 ft. Depth of completed well 1,057 ft.

(6) CONSTRUCTION DETAILS

Casing installed: 24" Diam. from 0 ft. to 981' 7" ft.
Threaded ☐ 20" Diam. from 0 ft. to 421' 6" ft.
Welded ☒ 16" Diam. from 0 ft. to 541' 2" ft.

Perforations: Yes ☒ No ☐
Type of perforator used _____
SIZE of perforations _____ in by _____ in
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes ☒ No ☐ To what depth? 541 ft.
Material used to seal Cement
Did any strata contain unusable water? Yes ☐ No ☒
Type of water _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type _____ H.P. _____

(8) WATER LEVELS: Land surface elevation above mean sea level 720 ft.
Static level _____ ft. below top of well Date _____
Artesian pressure 4 lbs. per square inch Date 3-13-74
Artesian water is controlled by Cap and Valve (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? driller
Yield 450 gal./min. with 300 ft. drawdown after 8 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 7 Nov 73
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Artesian flow _____ g.p.m. Date 7 Nov 73
Temperature of water 75 Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

FORMATION	FROM	TO
Soil	0	5
Gray Sand and Silt	5	11
Brown Silt, Trace Fine Sand	11	52
Brown Silt and Coarse Sand	52	69
Brown Silt	69	71
Brown Silt and Coarse Sand	71	88
Red Sand and Silt	88	91
Brown Silt, Sand & Small Gravel	91	110
Light Brown Clay, Sand, and Small Gravel	110	186
Light Brown Sticky Clay and Small Gravel	186	216
Blue Clay	216	249
Brown Clay	249	257
Green Brown Clay and Sand	257	280
Hard Green Brown Sandstone	280	299
Soft Brown Sandstone	299	321
Green Brown Clay	321	354
Blue Clay	354	389
Dark Brown Clay	389	445
Blue Clay	445	534
Gray Basalt Rock	534	540
Hard Gray Basalt Rock	540	678
Hard, Sticky Blue Clay	678	731
White fine Sand (Well started flowing)	731	739
Gray Sticky Clay	739	818
Hard Gray Basalt Rock	818	903
Cracks in Gray Basalt Rock (Well started flowing over 12" Pipe)	903	906
Very Hard Clay Basalt Rock	906	941
Gray-Black Hard Rock and Cinders (Caving formation)	941	967
Very Hard Gray Basalt Rock	967	1010

Work started 24 Nov 73 Completed 13 Mar 74

WELL DRILLER'S STATEMENT

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME _____ (Person, firm, or corporation) (Type or print)
Address _____
[Signed] _____ (Well Driller)
License No. _____ Date _____, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-6-05 (Rev 5-69)—5-69

WELL #7

Notice: Carbon paper and other forms are impermeable with chemical which automatically reproduces the written material on each underlying copy

File Original and First Copy with the Division of Water Management
Second Copy - Owner's Copy
Third Copy - Driller's Copy

WATER WELL REPORT Page 2 of 2

STATE OF WASHINGTON

Application No. _____
Permit No. _____

(1) OWNER Name Sunnyside Port District Address Box 353 Sunnyside, Washington

(2) LOCATION OF WELL County _____ ¼ ¼ Sec _____ T _____ N R _____ W M

Location and distance from section or subdivision corner _____

(3) PROPOSED USE: Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (If more than one) _____
If a well [ ] Abandoned [ ] New well [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well _____ inches. Drilled _____ ft. Depth of completed well _____ ft.

(6) CONSTRUCTION DETAILS

Casing installed: 12" Diam from 0 ft to 820 ft
Threaded [ ] 10" Diam from 767 ft to 967 ft
Welded [X] 8" Diam from 926 ft to 1026 ft

Perforations: Yes [X] No [ ]
Type of perforator used Torch
Size of perforations ½ in by 4 in
4 per/ft perforations from 807 ft to 927 ft
6 per/ft perforations from 986 ft to 1026 ft
_____ perforations from _____ ft to _____ ft

Screens: Yes [ ] No [ ]
Manufacturer's Name _____
Type _____ Model No. _____
Diam _____ Slot size _____ from _____ ft to _____ ft
Diam _____ Slot size _____ from _____ ft to _____ ft

Gravel packed: Yes [ ] No [ ] Size of gravel _____
Gravel placed from _____ ft to _____ ft

Surface seal: Yes [ ] No [ ] To what depth? _____ ft
Material used in seal _____
Did any strata contain unusable water? Yes [ ] No [ ]
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____
Type _____ H.P. _____

(8) WATER LEVELS: Land surface elevation above mean sea level _____ ft
Static level _____ ft below top of well Date _____
Artesian pressure _____ lbs per square inch Date _____
Artesian water is controlled by (Cap, valve, etc.) _____

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [X] No [ ] If yes, by whom? Driller
Yield: 600 gal/min with 6' 10" ft drawdown after 10 hrs
830 " 10' 6" " 18 "
1000 " 31' 2" " 24 hrs or less

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
0	32' 5"	10 min.	2' 2"	1 hr	1' 11"
1 min	5' 0"	20 min.	2' 7"	1 hr 15 min	1'03/4"
2 min	4' 4"	30 min	2' 4"	Pleaser	

Date of test Jan 74
Bailer test _____ gal/min with _____ ft drawdown after _____ hrs
Airlift test 500 gpm Date 13 Jan 74
Temperature of water 75 Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

FORMATION	FROM	TO
Soft Black Basalt Cinders	1010	
(Increased from 30 GPM to 500 GPM) Plowing		1022
Porpus Black Basalt Rock	1022	1057

Work started 24 Nov 19 73 Completed 13 Jan 19 74

WELL DRILLER'S STATEMENT

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief

NAME Chas. Junkman Drilling Co.
(Person, firm or corporation) (Type or print)

Address 115 Poe - P O Box 624 Walla Walla, Wa.

[Signed] _____ (Well Driller)

License No 428 Date 18 Jan. 19 74

(USE ADDITIONAL SHEETS IF NECESSARY)

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

☐ Surface Water (Issued in accordance with the provisions of Chapter 117 Laws of Washington for 1917 and amendments thereto and the rules and regulations of the Department of Ecology)

☒ Ground Water (Issued in accordance with the provisions of Chapter 263 Laws of Washington for 1945 and amendments thereto and the rules and regulations of the Department of Ecology)

-2516950

PRIORITY DATE	APPLICATION NUMBER	PERMIT NUMBER	CERTIFICATE NUMBER
June 28, 1973	G3-21323	G3-21323P	G3-21323C

NAME
CITY OF SUNNYSIDE

ADDRESS (STREET)	(CITY)	(STATE)	(ZIP CODE)
719 Edison Avenue	Sunnyside	Washington	98944

This is to certify that the herein named applicant has made proof to the satisfaction of the Department of Ecology of a right to the use of the public waters of the State of Washington as herein defined and under and specifically subject to the provisions contained in the Permit issued by the Department of Ecology and that said right to the use of said waters has been perfected in accordance with the laws of the State of Washington and is hereby confirmed by the Department of Ecology and entered of record as shown

PUBLIC WATER TO BE APPROPRIATED

SOURCE
a well

TRIBUTARY OF (IF SURFACE WATERS)

MAXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER MINUTE	MAXIMUM ACRE FEET PER YEAR
	950	1500

QUANTITY, TYPE OF USE, PERIOD OF USE
950 gallons per minute, 1500 acre feet per year continuously for municipal supply

LOCATION OF DIVERSION/WITHDRAWAL

APPROXIMATE LOCATION OF DIVERSION—WITHDRAWAL
400 feet East and 645 feet North from the West quarter corner of Section 36

LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION)	SECTION	TOWNSHIP N	RANGE (E OR W) W M	W R I A	COUNTY
SE¼NW¼	36	10	22 E	37	Yakima

RECORDED PLATTED PROPERTY

LOT	BLOCK	OF (GIVE NAME OF PLAT OR ADDITION)

LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED

City of Sunnyside, Washington

PROVISIONS

icate holder shall maintain an access port as described in Ground Water
tin No 1

YAK' ITY
FILED
Dept of Ecology
SEP 7 10 28 AM '78
C AUDITOR

The right to the use of the water aforesaid hereby confirmed is restricted to the lands or place of use herein described except as provided in RCW 90 03 380 90 03 390 and 90 44 020

This certificate of water right is specifically subject to relinquishment for nonuse of water as provided in RCW 90 14 180

Given under my hand and the seal of this office at Yakima, *Washington this* 5th *day of* September *19* 78

Department of Ecology

ENGINEERING DATA
OK
le

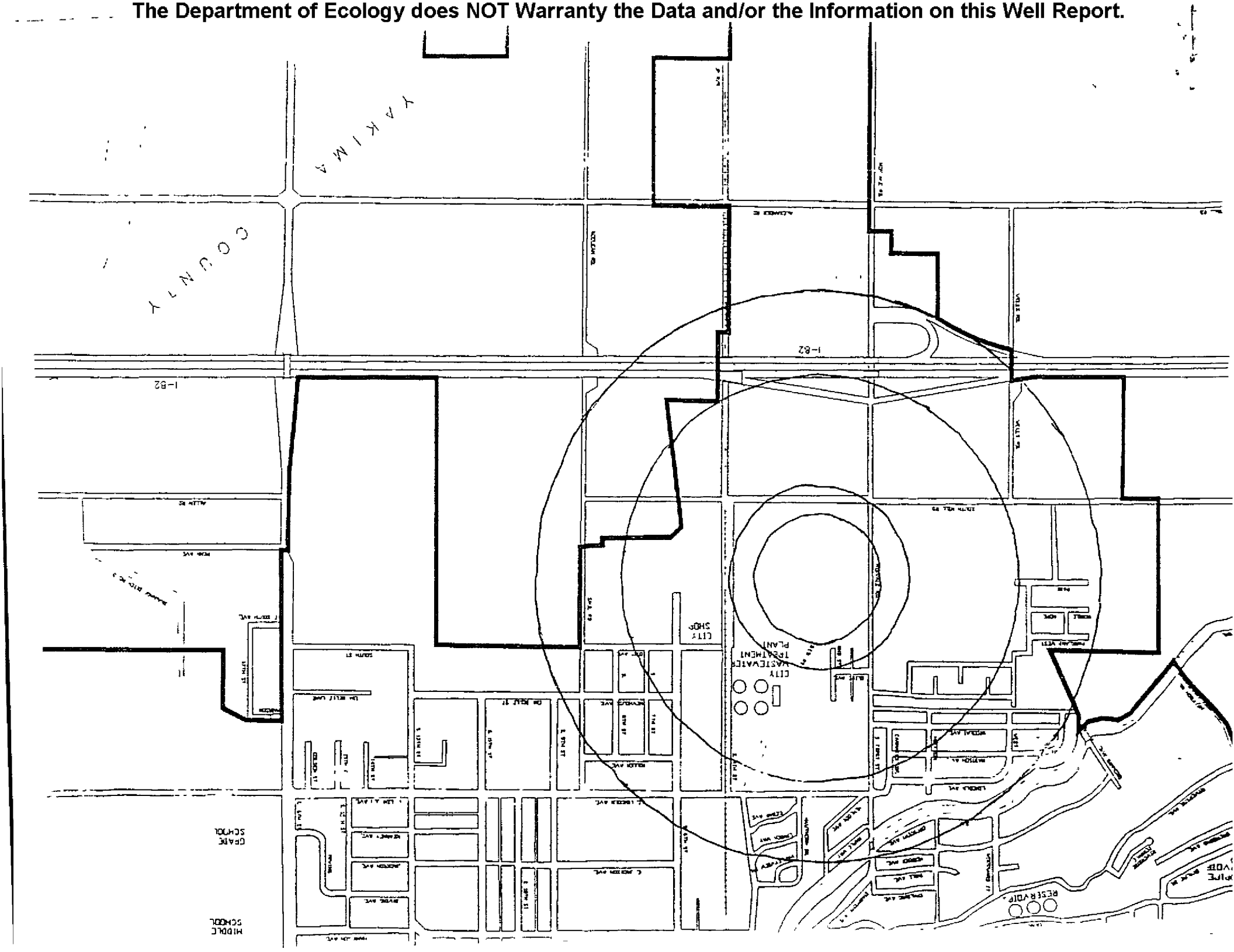
by Russell K Taylor, Regional Manager

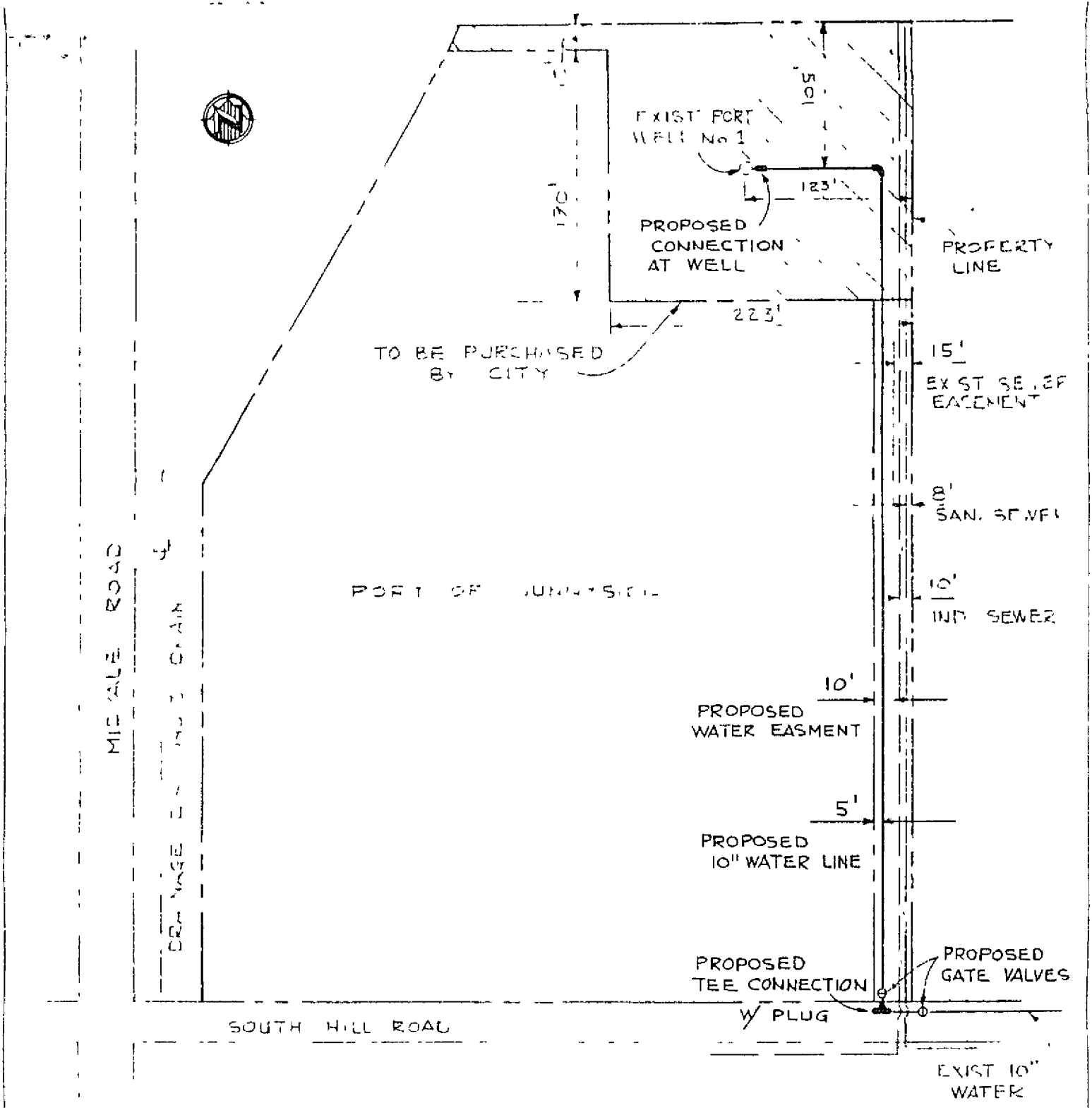
FOR COUNTY USE ONLY

John C Poston
Gray and Osborne
603 West "A" Street
Yakima, WA 98902

VOL 1030 330

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

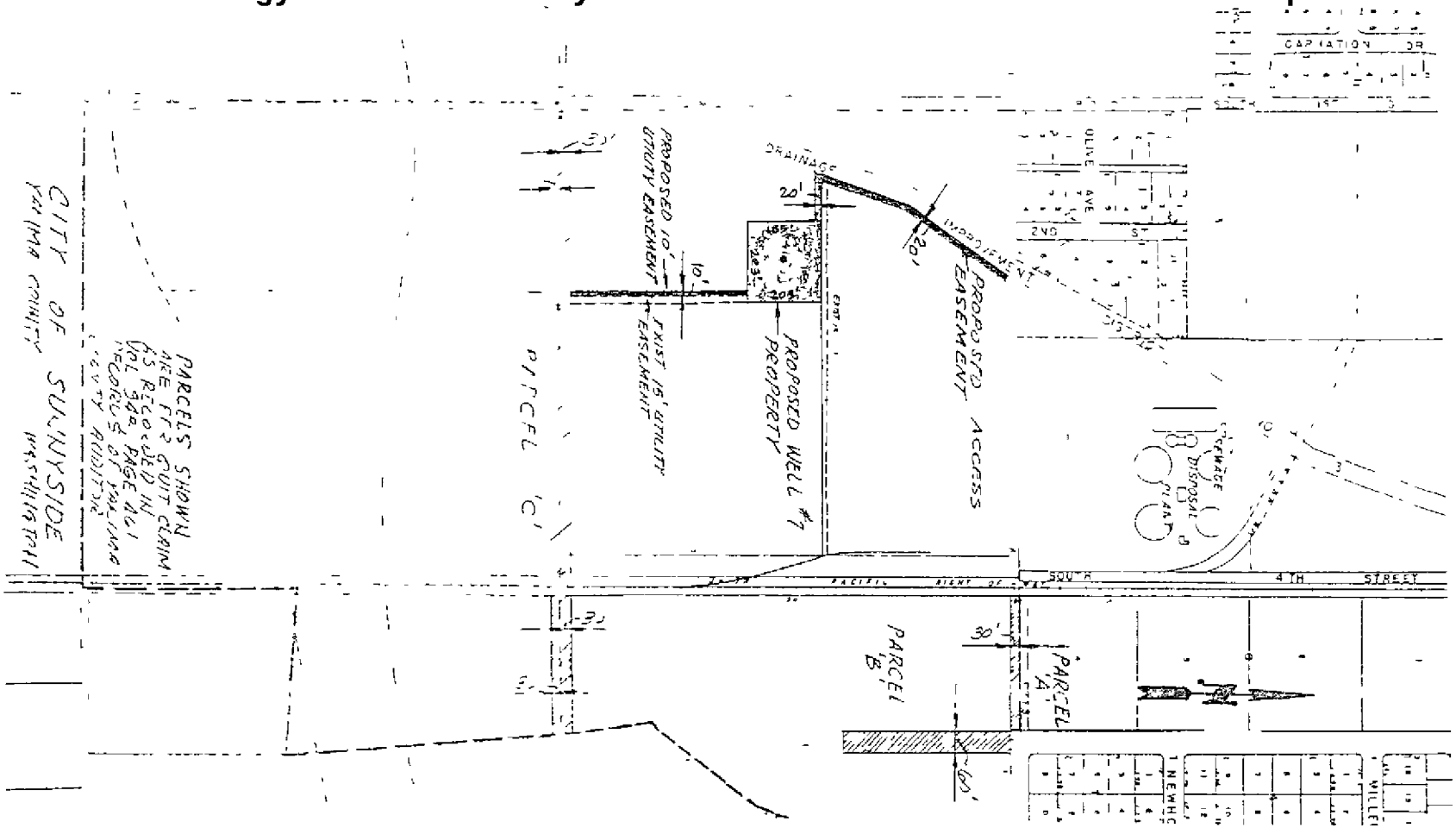




WELL #7

CITY OF SUNNYSIDE		
REF 27 WATERWORKS APPLICATION		
TRANSMISSION LINE PLAN		
DATE 12-74	Gray & Osborne CONSULTING ENGINEERS SEATTLE & YAKIMA WASHINGTON	SCALE 1"=100
DRAWN M O		SHEET 1 OF 1
CHKD R J S		
APPD		

JOB NO 74081



File Original and First Copy with Department of Ecology 460273
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W34671

PAGE 1 of 2

Water Right Permit No. _____

OWNER: Name City of Sunnyside Address 818 E. Edison, Sunnyside, WA 98944

(2) LOCATION OF WELL: County Yakima NE ¼ NE ¼ Sec 26 T. 10 N., R. 22E W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) 340 Homer Street

(3) PROPOSED USE: ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) #8

Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method: Dug ☐ Cable ☐ Rotary ☒ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 20 inches. Drilled 440 feet. Depth of completed well 385 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 20 " Diam. from +2 ft. to 325 ft.
Welded ☒ Liner installed ☐ Threaded ☐ 16 " Diam. from +2 ft. to 300 ft.
_____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes ☐ No ☒
Type of perforator used N/A
SIZE of perforations N/A in. by N/A in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Houston
Type 304 Stainless Steel Model No. 304
Diam. 10 Slot size .30 from 305 ft. to 308 ft.
Diam. 10 Slot size .30 from 325 ft. to 375 ft.

Gravel packed: Yes ☒ No ☐ Size of gravel 10-20 Colorado Sand
Gravel placed from 295 ft. to 385 ft.

Surface seal: Yes ☒ No ☐ To what depth? 325 ft.
Material used in seal Cement
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

☑ **PUMP:** Manufacturer's Name _____
Type: _____ H.P. _____

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 44 ft. below top of well Date 6-18-94
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.))

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Irrigators Inc
Yield: 800 gal./min. with 183 ft. drawdown after 48 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
10:00	227.2	12:00	77.40	10:00pm	62.35
10:00	98.7	2:00	73.8	10:00am	56.8
:00	83.4	4:00	68.6		

Date of test 6-20-94
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water 57° Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Fill Dirt and Concrete .	0	5
Sandy Loam	5	30
Dark Brown Sand Med.	30	50
Sand Grey and Black Fine	50	62
Slitstone Grey with Brown	62	68
Fragments Gravel	68	77
Grey Slitstone With Black Gravel	77	88
Clay Tan and Green With Black	88	
Shale Frags.		98
Clay Light Grey	98	102
Clay Dark Grey Black Gravel Frags.	102	120
Gravel	120	123
Grey Clay With Gravel	123	135
Sand Brown Med. With Mica	135	148
Sand And Gravel With Mica	148	151
Sand Brown Med. to Fine	151	167
Gravel With Sand	167	175
Gravel Larger	175	182
Sand With Gravel	182	190
Sand Brown With Small Gravel	190	195
Sand Med. To Fine with Mica	195	200
Sand And Gravel	200	211
Sand Fine To Med. Grained	211	215
Sand And Gravel	215	222
Gravel Med.	222	224
Sand Fine To Course	224	230
Gravel	230	233
Sand Med Fine	233	237
Gravel Well Rounded	237	239
Gravel	239	241
Sand With Some Gravel	241	250
Gravel	250	255
Silt Sand And Gravel	255	262
Cont. on Next Page		

Work started 3-11-94, 19. Completed 6-7-94, 19

WELL CONSTRUCTOR CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

RECEIVED JUL 12 1994 DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE

NAME STACO WELL SERVICES, INC. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 220 Academy St. Mt. Angel, OR 97362

(Signed) _____ (WELL DRILLER) License No. 1789

Contractor's Registration No. STACOWS13-10H Date 7-8, 1994

(USE ADDITIONAL SHEETS IF NECESSARY)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

460273

WATER WELL REPORT

STATE OF WASHINGTON

PAGE 2 of 2

Start Card No. W 34671

UNIQUE WELL I.D. # 8

Water Right Permit No.

OWNER: Name City of Sunnyside Address 818 E. Edison, Sunnyside, WA 98944

(2) LOCATION OF WELL: County Yakima NE 1/4 NE 1/4 Sec 26 T 10 N, R 22E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 340 Homer Street A

(3) PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) TYPE OF WORK: Owner's number of well (If more than one)

Abandoned ☐ New well ☐ Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well inches. Drilled feet. Depth of completed well ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.
Liner installed ☐ Threaded ☐ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☐
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☐ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☐ No ☐ To what depth? ft.
Material used in seal
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Tuft Bluegreen	262	280
Tuft Greygreen	280	298
Tuft Tan	298	307
Tuft Grey	307	319
Grey Sand Med. Grained	319	327
Sand Dark Brown	327	355
Gravel And Sand	355	360
Sand And Gravel	360	364
Sand Grey Med.	364	366
Sand Very Fine To Course	366	368
Gravel With Small Amounts of Sand	368	374
Gravel With Fine Sand	374	380
Gravel With Very Fine Sand And Mica	380	388
Gravel With Grey Tuft Fine To Med Sand	388	390
Brown Tuft With Gravel	390	392
Multi Colored Tuft	392	428
Basalt Black And Weathered	428	440

Work Started 3-11 19 94 Completed 6-7 19 94

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

RECEIVED
JUL 1994
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

NAME STACO WELL SERVICES, INC. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 220 Academy St. Mt. Angel, OR 97362

(Signed) (WELL DRILLER) License No. 1789

Contractor's Registration No. STACOWS13-101 Date 7-8 19 94

(USE ADDITIONAL SHEETS IF NECESSARY)

ECL 050-1-20 (2/93) * * f

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

28535

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W07379
UNIQUE WELL I.D. # AAR 996
Water Right Permit No. G4-31581P

(1) **OWNER:** Name City of Sunnyside Address 818E. Edison, Sunnyside, WA. 98944

LOCATION OF WELL: County Yakima SW 1/4 NE 1/4 Sec 29 T. 10 N., R 23E W.M.

(2a) **STREET ADDRESS OF WELL** (or nearest address) Edison Road, Sunnyside, WA G

(3) **PROPOSED USE:** ☐ Domestic ☐ Industrial ☐ Municipal XX ☐ Irrigation ☐ Test Well ☐ Other ☐ ☐ DeWater

(4) **TYPE OF WORK:** Owner's number of well (If more than one) 9
Abandoned ☐ New well XX Method: Dug ☐ Bored ☐ Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 30x28x22x15 inches.
Drilled 919 feet. Depth of completed well 919 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 24 " Diam. from 0 ft. to 51 ft.
Welded X 16 " Diam. from +2.5 ft. to 471 ft.
Liner installed X 14 " Diam. from 447 ft. to 453 ft.
Threaded ☐ 12 " Diam. from 453 ft. to 919 ft.
cept@screen

Perforations: Yes X No ☐
Type of perforator used factory mill cut
SIZE of perforations 3/16 in. by 3 in.
3300 perforations from 465 ft. to 535 ft.
13560 perforations from 613 ft. to 904 ft.
perforations from ft. to ft.

Screens: Yes XX No ☐
Manufacturer's Name Johnson
Type V shape wire wrap-XX strong Model No. 304SS
Diam. 12 Slot size .250 from 535 ft. to 613 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No XX Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes X No ☐ To what depth? 471 ft.
Material used in seal cement grout
Did any strata contain unusable water? Yes X No ☐
Type of water? Different aquifer system Depth of strata < 451'
Method of sealing strata off cement grout seal

(7) **PUMP:** Manufacturer's Name
Type: H.P.

(8) **WATER LEVELS:** Land-surface elevation above mean sea level 756± ft.
Static level ft. below top of well Date
Artesian pressure 28 lbs. per square inch Date 10/22/97
Artesian water is controlled by 12" valve, etc., per variance (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes XX No ☐ If yes, by whom? Schneider
Yield: gal./min. with ft. drawdown after hrs.
" SEE ATTACHED GRAPHS OF STEP "
" AND CONSTANT RATE TESTS "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
	See Attached Graph				

Date of test 9/15-17/97(constant rate pumping)
Bailer test gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow 800 g.p.m. Date 10/7-13/97
Temperature of water 78°F Was a chemical analysis made? Yes X No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
SEE ATTACHED LOG		

RECEIVED
NOV 26 1997
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started 3/19/97, 19. Completed 11/21, 19 97

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Schneider Drilling Co. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 21881 River Rd. NE St. Paul, OR. 97137
(Signed) Stephen J. Schneider (WELL DRILLER) License No. 0643
Vice President
Contractor's Registration No. SCHNEI*226LG Date 11/21, 19 97

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.

ECY 050-1-20 (9/93) * * f

SEI 9726

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

City of Sunnyside Well No. 9 Log

By Schneider Drilling Co.

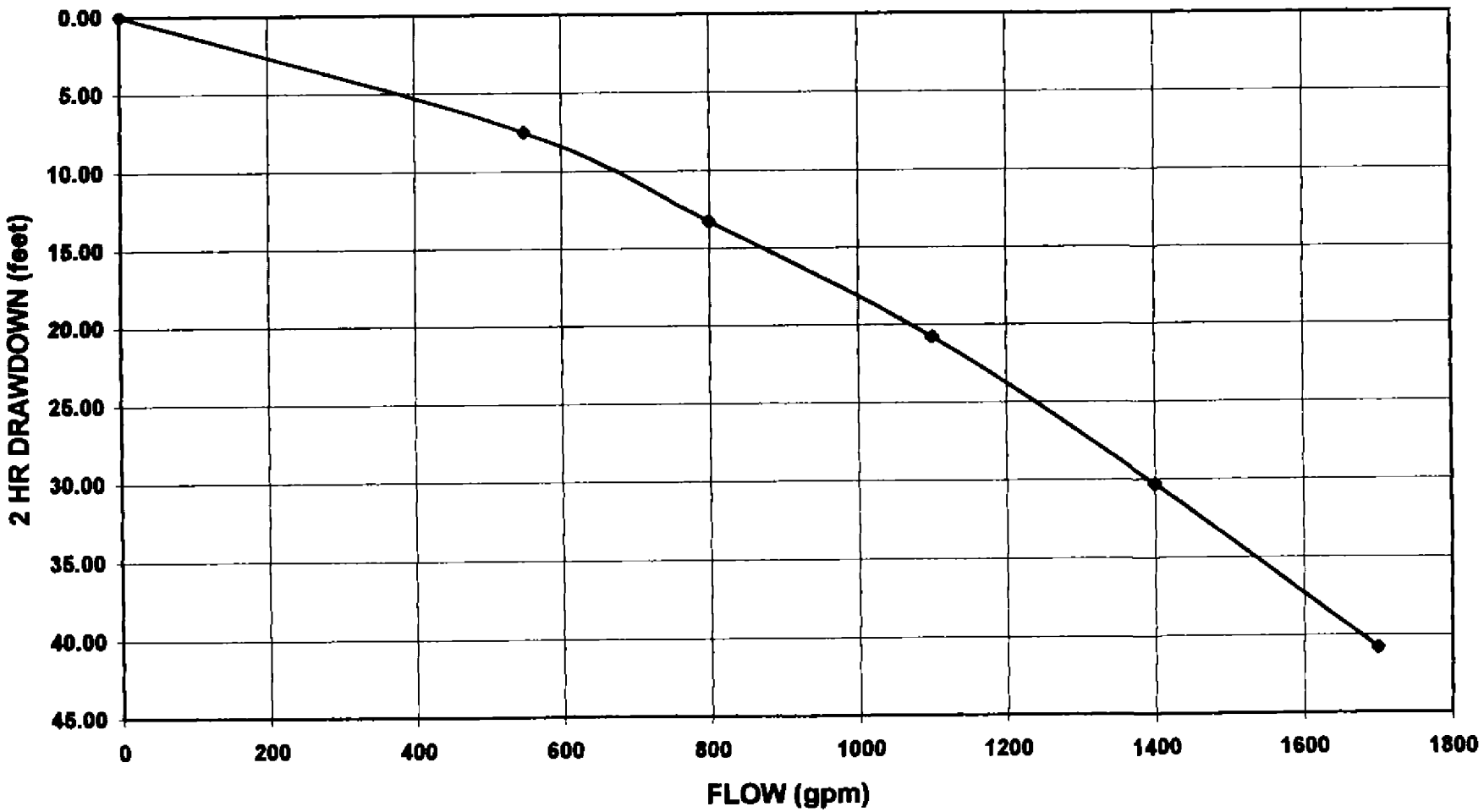
Unique Well I.D. # AAR 996

From	To	Description
0	7	Sandy silt, brown
7	27	Clay, silty, brown, w/some coarse sand
27	30	Sand & gravel
30	37	Clay, silty, brown, w/some coarse sand
37	51	Sand & gravel, cemented, w/clay
51	68	Sand & gravel
68	75	Sand & gravel, w/clay, gray, & sand, coarse, cemented
75	106	Gravel & claystone, brown
106	148	Clay, brown, soft
148	160	Clay, brown & blue-gray
160	165	Claystone, blue, med-soft
165	187	Clay, blue
187	201	Claystone, white, & clay, blue
201	248	Basalt, blue, hard
248	250	Basalt, blue & claystone, brown
250	282	Basalt, blue, hard
282	286	Basalt, blue, hard, slightly fractured
286	293	Basalt, blue, hard, fractured
293	297	Basalt, blue & sandstone, brown
297	298	Basalt, weathered, sandstone, brown & some clay, gray
298	302	Sandstone & clay, gray
302	310	Sand, coarse & clay
310	317	Sand, fine & clay
317	319	Sand, med-fine & clay, gray
319	326	Clay, white-gray
326	337	Clay, white
337	339	Sand, coarse & clay
339	343	Clay, white-gray
343	347	Sand, coarse
347	348	Sand, coarse, & sandstone
348	375	Clay & some sand, coarse, sticky
375	383	Clay, white-gray, & sand
383	393	Claystone, gray
393	400	Clay, brown & sand, coarse
400	422	Sand, coarse, & clay
422	426	Claystone, gray, & sandstone, brown
426	427	Sand, coarse, & clay, brown
427	434	Clay, brown, sandstone, brown & claystone, brown
434	436	Sandstone, brown, claystone, gray & basalt, weathered
436	440	Basalt, weathered, broken

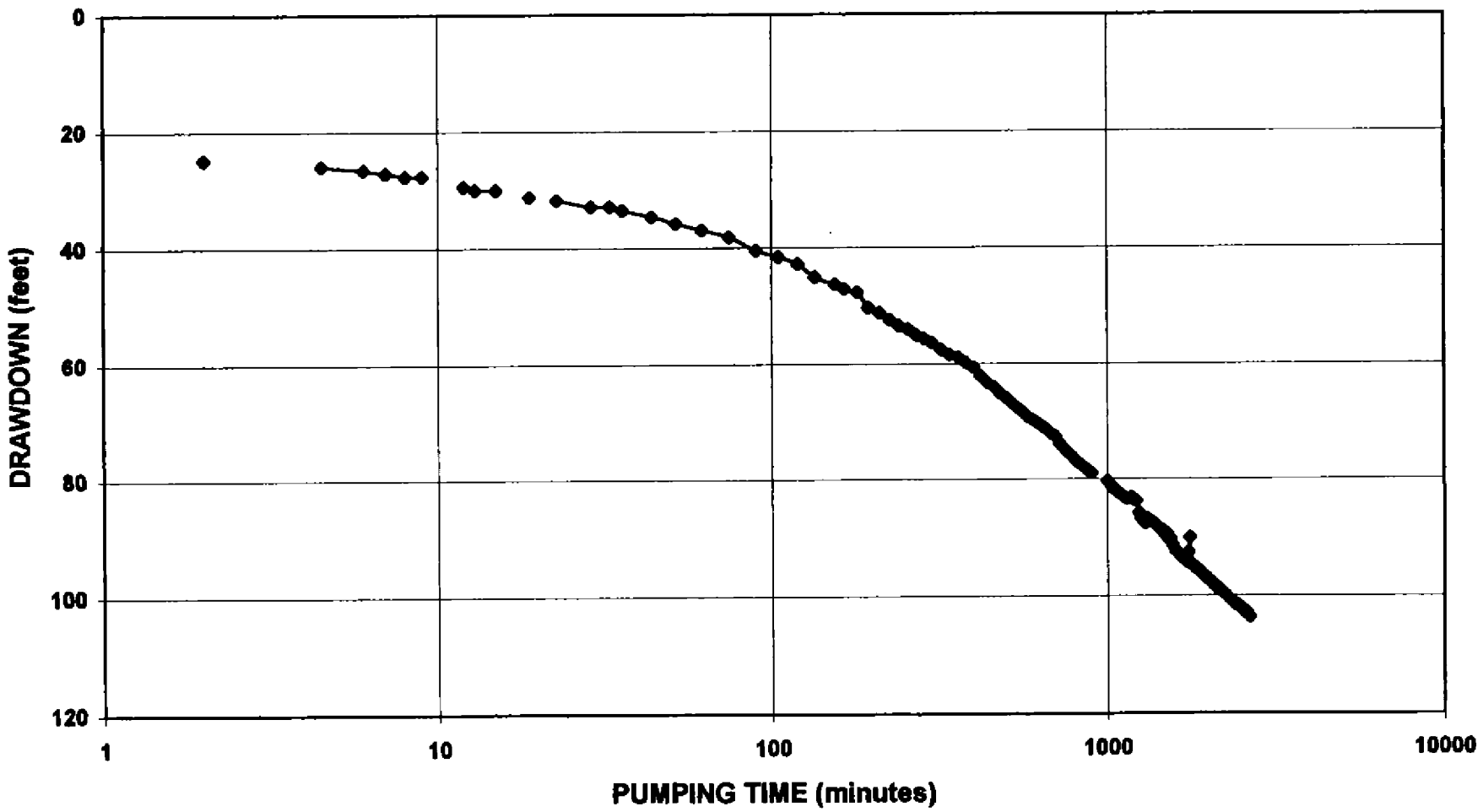
440	451	Basalt, fractured, & claystone, blue-green
451	474	Basalt, black, hard
474	476	Basalt, fractured, w/some vesicular, gray, med
476	490	Basalt, fractured, w/claystone, blue
490	495	Basalt, some fractures, gray, med-hard
495	515	Basalt, fractured, w/claystone, blue, med-hard
515	530	Basalt, fractured, gray, med-hard
530	535	Basalt, fractured, light gray, med-hard
535	539	Basalt, gray, hard
539	546	Basalt, weathered, brown, vesicular
546	547	Basalt, gray, vesicular, w/some basalt, weathered, brown, & quartz, multi-colored
547	549	Basalt, vesicular, gray, medium, fractured
549	550	Basalt, fractured, medium
550	555	Basalt, fractured, gray, w/claystone, blue, medium
555	562	Basalt, weathered, multi-colored, w/quartz, medium
562	574	Basalt, broken, vesicular, gray, w/basalt, weathered, multi-colored, medium
574	584	Basalt, fractured, gray, vesicular, medium, some quartz
584	585	Basalt, broken, gray, vesicular, some weathered
585	591	Basalt, broken, vesicular, multi-colored, med-soft
591	598	Basalt, broken, weathered, vesicular, multi-colored, medium
598	602	Basalt, fractured, gray, some vesicular, & quartz, medium
602	607	Basalt, weathered, vesicular, brown, w/claystone, brown, medium
607	609	Basalt, fractured, vesicular, green-gray, w/some claystone, brown, medium
609	613	Clay, green, w/basalt, fractured, medium
613	618	Basalt, fractured, gray, w/weathered, basalt, brown, medium
618	620	Basalt, gray, hard
620	623	Basalt, fractured, w/siltstone, gray, & shale, blue, medium
623	624	Siltstone, blue, w/basalt, fractured, gray, medium
624	626	Basalt, fractured, gray, med-hard
626	666	Basalt, gray, hard
666	668	Basalt, fractured, gray, med-hard
668	696	Basalt, gray, very hard
696	697	Siltstone, blue, w/basalt imbedded
697	705	Basalt, gray, very hard
705	730	Basalt, slightly fractured, gray, med-hard
730	736	Basalt, fractured, gray, med-hard
736	760	Basalt, gray, hard
760	761	Basalt, gray, fractured, w/quartz, med-hard
761	790	Basalt, fractured, gray, med-hard
790	798	Basalt, gray, hard
798	806	Basalt, gray, very hard
806	807	Basalt, gray, medium
807	811	Basalt, gray, hard
811	815	Basalt, frac, gray, ves, w/obsidian, black, medium
815	817	Basalt, weathered, brown & gray, medium
817	820	Basalt, vesicular, gray-brown, medium

820	823	Basalt, weathered, red-brown-gray, w/silty clay, brown, soft
823	832	Basalt, weathered, brown, w/silty clay, brown & blue, & claystone, soft
832	833	Basalt, weathered, vesicular, brown-green, soft
833	842	Clay, silty, gray, w/claystone, gray, soft
842	846	Clay, silty, green, w/claystone, blue, soft
846	853	Sand, coarse, w/claystone, red, medium
853	856	Clay, sticky, green, w/claystone, green, soft
856	863	Clay, sticky, gray, w/claystone, green, soft
863	869	Clay, sticky, green, w/claystone, green, some basalt, soft, red
869	875	Clay, sticky, gray, w/siltstone, flaky, green, soft
875	885	Siltstone, flaky, green, w/clay, sticky, gray, some cinders
885	890	Cinders, brown & gray, medium-soft
890	893	Cinders, vesicular, brown, medium-soft
893	895	Basalt, brown, vesicular, w/siltstone, green, med
895	896	Claystone, green, soft
896	900	Basalt, vesicular, brown, w/claystone, gray, med
900	901	Shale, green, soft
901	903	Basalt, broken, brown, med
903	919	Basalt, gray, hard

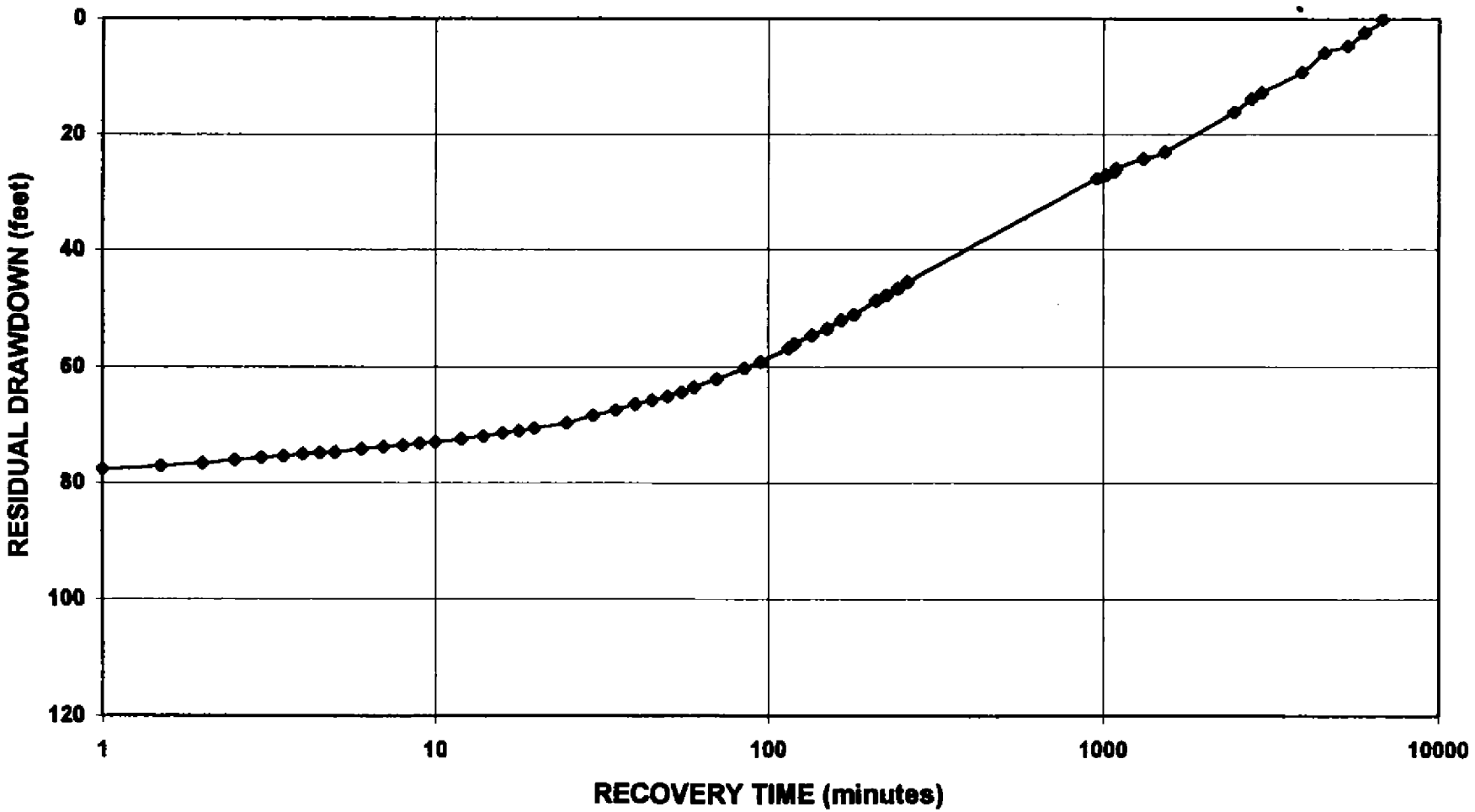
SUNNYSIDE WELL NO. 9 STEP TEST
FLOW vs DRAWDOWN



SUNNYSIDE WELL NO. 9
2000 GPM Constant Rate Pump Test



SUNNYSIDE WELL NO.9
Recovery from 2000 GPM Pump Test



File Original and First Copy with Department of Ecology
Second Copy — Owner s Copy
Third Copy — Driller s Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No W07383
UNIQUE WELL I D # AAS285
Water Right Permit No GWC 49-A

(1) **OWNER** Name City of Sunnyside Address 818 E Edison, Sunnyside, WA 98944

(2) **LOCATION OF WELL** County Yakima SE 1/4 NW 1/4 Sec 25 T 10 N R 22E WM

(2a) **STREET ADDRESS OF WELL** (or nearest address) 200-220 S 7th St Sunnyside, WA 98944

(3) **PROPOSED USE** ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal XX Other ☐

(4) **TYPE OF WORK** Owner s number of well (If more than one) 4A
Abandoned ☐ New well XX Deepened ☐ Reconditioned ☐ Method Dug ☐ Cable ☐ Rotary XX Bored ☐ Driven ☐ Jetted ☐

(5) **DIMENSIONS** Diameter of well 16 X 12 cased/lined inches
Drilled 1701 feet Depth of completed well 1701 ft

(6) **CONSTRUCTION DETAILS**
Casing Installed 16 Diam from +2 ft to 1202 ft
Welded XX 24 Diam from 0 ft to 50 ft
Liner installed ☐ 12 Diam from see (10) to ft
Threaded ☐

Perforations Yes XX No ☐
Type of perforator used factory mill cut
SIZE of perforations 3/16 in by 3 in
48/ft perforations from see (10) ft to ft
perforations from ft to ft
perforations from ft to ft

Screens Yes XX No ☐
Manufacturer s Name Houston
Type V shape wire wrap Model No 304SS
Diam 12 Slot size 200 from see (10) ft to ft
Diam Slot size from ft to ft

Gravel packed Yes ☐ No XX Size of gravel
Gravel placed from ft to ft

Surface seal Yes XX No ☐ To what depth? 50' o/s 24" csg
Material used in seal cement grout 0-1202' o/s 16" csg
Did any strata contain unusable water? Yes ☐ No XX
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP** Manufacturer s Name
Type HP

(8) **WATER LEVELS** Land surface elevation above mean sea level 745± ft
Static level 136 bgs ft below top of well Date 12/21/98
Artesian pressure lbs per square inch Date
Artesian water is controlled by (Cap valve etc)

(9) **WELL TESTS** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes XX No ☐ If yes by whom? Schneider
Yield gal /min with ft drawdown after hrs

See attached graph

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
see attached graph					

Date of test 12/8/98
Bailer test gal /min with ft drawdown after hrs
Airtest gal /min with stem set at ft for hrs
Artesian flow g p m Date
Temperature of water 78°F Was a chemical analysis made? Yes XX No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation Describe by color character size of material and structure and show thickness of aquifers and the kind and nature of the material in each stratum penetrated with at least one entry for each change of information

MATERIAL	FROM	TO
see attached		
Top of 24" has plate welded between itself and 16" casing		
24" is cement grout sealed	0	50
16" is cement grout sealed	0	1202
12" liner assembly		
J receptor & K packer	1182	1187
blank	1187	1283
perforated	1283	1325
blank	1325	1359
screen	1359	1402
blank	1402	1423
screen	1423	1435
perforated	1435	1448
blank	1448	1490
perforated	1490	1541
blank	1541	1552
perforated	1552	1615
blank	1615	1655
screen	1655	1676
blank	1676	1701

CENTRAL REGION OFFICE DEPT OF ECOLOGY Received JAN 21 1999

Work Started 7/22/98 19 Completed 12/23 19 98

WELL CONSTRUCTOR CERTIFICATION

I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief

NAME Schneider Equipment, Inc. (PERSON FIRM OR CORPORATION) (TYPE OR PRINT)
Address 21881 River Rd NE, St Paul, OR 97137
(Signed) (WELL DRILLER) License No 643
Contractor s Registration No SCHNEI 226LG Date 1/15 19 99

(USE ADDITIONAL SHEETS IF NECESSARY)

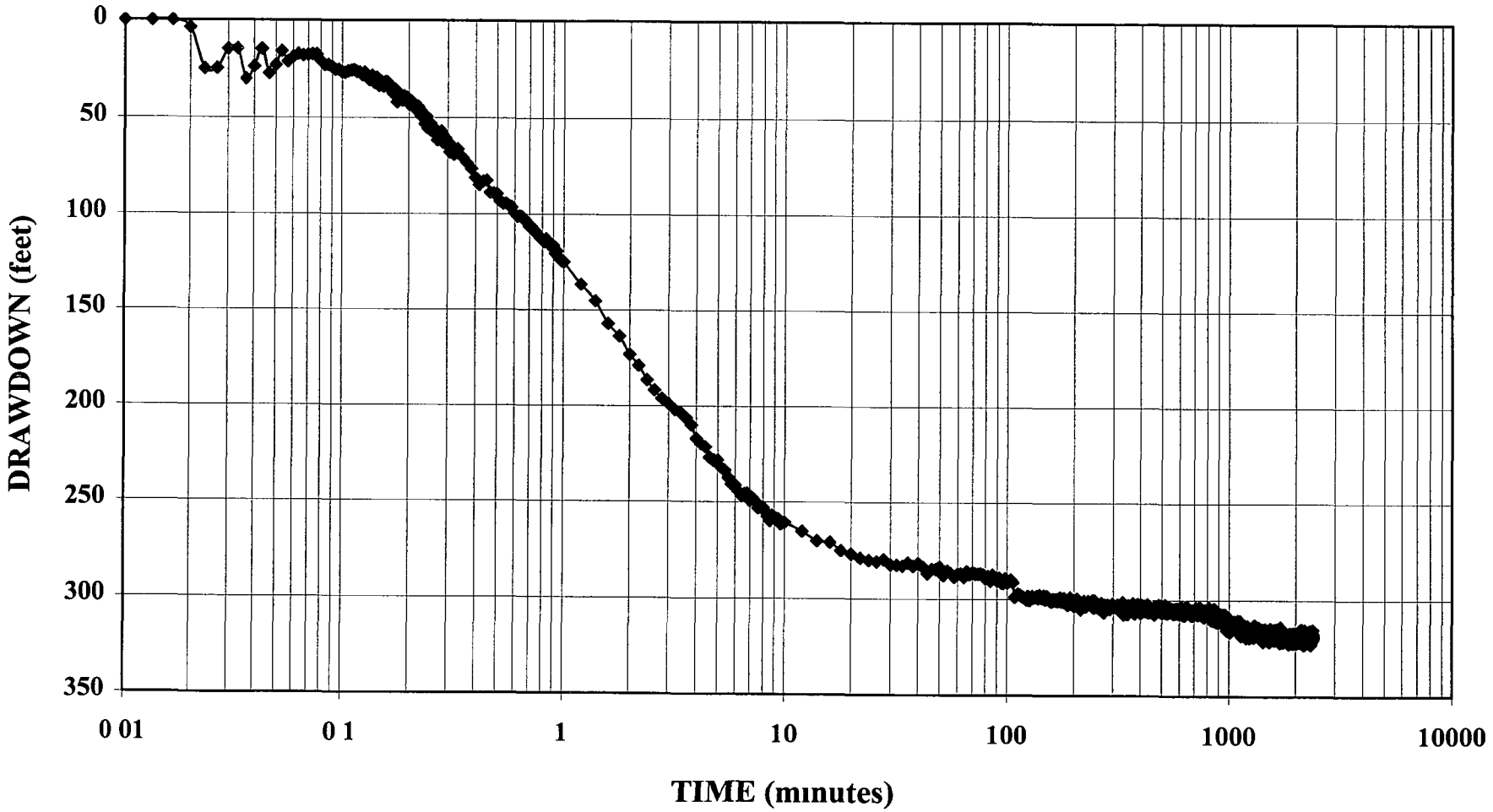
Ecology is an Equal Opportunity and Affirmative Action employer For special accommodation needs contact the Water Resources Program at (206) 407 6600 The TDD number is (206) 407 6006

ECY 050 1 20 (9/93) f

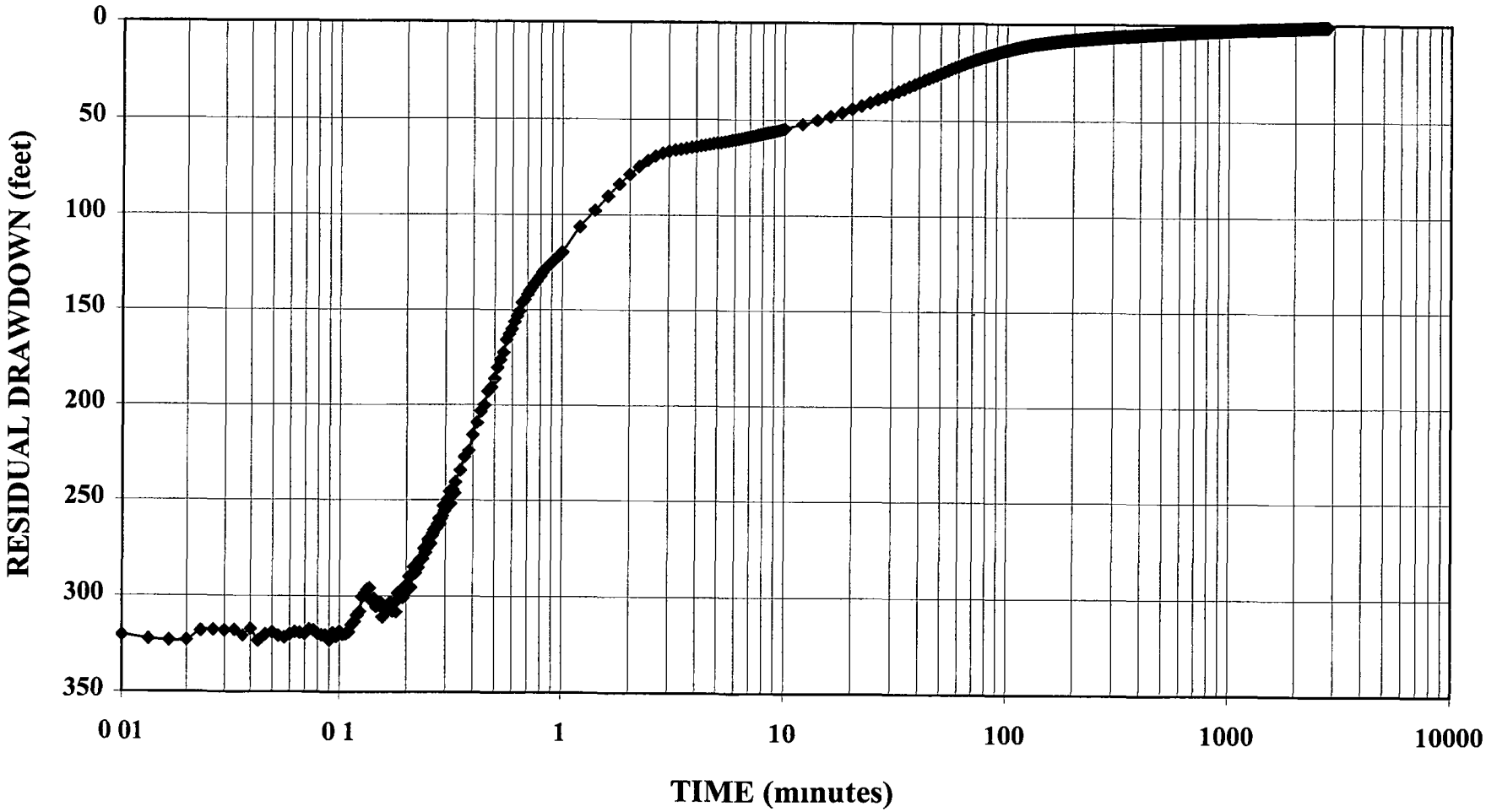
by owner

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

SUNNYSIDE WELL 4A
Pump Test @ 1200 GPM Beginning 12/7/98 (SWL 136' bgs)



SUNNYSIDE WELL 4A
Recovery Beginning 12/9/98



City of Sunnyside Well No. 4A Log

By Schneider Drilling Co

Unique Well I D # AAS 285

Depth From	Depth To	Description
0	12	Sandy loam, brn, sft
12	22	Clay brn, w/ course sand
22	27	Clay brn, w/some gravel sm
27	46	Clay brn
46	62	Gravels to sand
62	72	Gravel, pea w/sand brn
72	109	Gravels, cemented w/sand brn
109	140	Clay, silty, tan, sft
140	142	Clay, Hy, tan w/gravel
142	162	Clay, silty, brn w/some sandstone brn
162	169	Sitty, clay, brn w/claystone, tan sft
169	182	Clay, silty w/claystone, tan
182	212	Clay, silty, brn
212	232	Clay, sandy, tan
232	237	Clay, tan w/claystone, gray
237	242	Gravels, cemented
242	281	Gravels, cemented, mult-colored w/white shale stone
281	296	Clay, tan, med, sitty
296	326	Clay, tan, sandy, w/green tint
326	377	Clay, sandy, brn
377	387	Gravels, cemented
387	408	Gravel, w/sand
408	427	Gravel, multi-colored w/sand
427	432	Clay, tan, med, sand, med
432	446	Clay, green, med, sturdy
446	456	Basalt, dark gray, some vescular
456	502	Basalt, gray, hrd
502	512	Basalt, gray w/green, Claystone & red sinder
512	519	Basalt, gray, hrd w/some blue claystone
519	521	Basalt, black, fractured, med/hd
521	529	Basalt, gray w/blue quartz interbeded, frac
529	538	Basalt, gray w/blue quartz, frac, hd
538	549	Basalt, gray, frac, hd
549	566	Clay, brown and yellow
566	569	Clay, brn & tan, sticky, med

569	603	Clay, gray, sticky, med
603	612	Clay, gray & yellow, sticky, med sft
612	630	Claystone, brn & tan, w/brn claystone, sft
630	637	Sand, with brn & tan claystone, sft
637	641	Clay, tan, sticky, med-sft
641	648	Clay, blue, claystone, med-sft
648	655	Clay, gray - tan, sticky, w/claystone, brn
655	660	Clay, gray-yellow & brn, silt stone, med
660	685	Sand, brn sandstone, sft
685	710	Clay, sandy, sft
710	713	Basalt, multi-colored, ves, w/claystone, tan sft/med
713	718	Basalt, gray, slightly ves, w/claystone blue, frac, med
718	721	Basalt, brn/gray, ves, frac
721	733	Basalt, w/clay, dark brn, ves, frac
733	752	Basalt, gray/brn, ves, frac, w/some claystone grn, hd
752	761	Basalt, gray, frac, med/hd
761	762	Basalt, gray, frac, med/hd
762	772	Basalt, blk & gray, frac, med/hd
772	777	Basalt, gray, frac, hrd/med
777	779	Basalt, gray & blk, frac, hd
779	822	Basalt, gray, frac, hd/med
822	838	Basalt, gray, less frac, hd, w/blue quartz interbed
838	842	Basalt, gray, some frac, little blue/grn claystone interbeded
842	855	Basalt, gray, some frac, little blue/grn claystone interbeded
855	868	Basalt, gray w/quartzise blue, frac, hrd
868	871	Basalt, gray w/some quartioxte, blue, frac, hd
871	901	Basalt, gray,ves
901	906	Basalt, gray, ves, w/quartz, little mud
906	912	Basalt, gray w/brn, some frac, hd
912	927	Basalt, gray w/brn streak, frac, med/hd
927	949	Basalt, gray, frac, med/hd
949	953	Basalt, gray w/inbeded blue quartz, frac, hrd/med
953	959	Basalt, gray, frac, med/hd
959	1024	Basalt, gray, hd, some frac
1024	1026	Basalt, gray & blk w/grn quartz inbeded, med/hd
1026	1032	Basalt, gray & some brn w/grn quartz, frac, med/hd
1032	1037	Basalt, gray, frac, hrd/med
1037	1055	Basalt, gray, frac, hd
1055	1111	Basalt, gray, hd
1111	1112	No returns
1112	1125	Basalt, blk w/blue claystone, ves
1125	1167	Claystone, grn

1167	1180	Basalt, blk, frac
1180	1182	Basalt, gray, frac, med/hd
1182	1201	Basalt, gray w/brn tint, med/hd
1201	1233	Basalt, gray, med/hd
1233	1239	Basalt, gray w/inbeded blue quartz, frac, hrd/med
1239	1243	Basalt, gray, med/hd
1243	1253	Basalt, gray w/quartz inbeded, frac, med/hd
1253	1285	Basalt, gray, frac, med/hrd
1285	1290	Basalt, w/clay & grn claystone, ves, sft
1290	1294	Basalt, blk w/wood & grn claystone, ves, sft
1294	1295	Clay, grn, silty w/wood, sft
1295	1297	Basalt, blk, ves, med
1297	1301	Basalt, gray/grn, slightly ves, med
1301	1305	Basalt, gray/brn, frac, med
1305	1308	Basalt, gray/brn, frac, w/some ves, med
1308	1313	Basalt, gray, frac, ves, med
1313	1361	Basalt, gray, frac, med/hrd
1361	1367	Basalt, gray w/brn, frac, ves, med
1367	1371	Basalt, w/grn quartzite, frac, ves
1371	1376	Basalt, w/grn quartz inbeded, frac, med/hrd
1376	1380	Basalt, brn w/blue quartz, frac, ves, med
1380	1384	Basalt, gray w/veg brn quartz, frac, ves, med
1384	1388	Basalt, gray, frac, some porns, med/hrd
1388	1394	Basalt, w/quartz veg Brn, frac, ves, soft/hrd
1394	1401	Basalt, gray, frac, ves, med
1401	1418	Basalt, gray, frac, med/hrd
1418	1424	Basalt, gray, slightly frac, med/hrd
1424	1433	Basalt w/quartz blue, broken ves, med
1433	1435	Basalt, brn/gray w/pet wood, ves, sft/med
1435	1437	Basalt, brn w/brn clay, ves, sft/med
1437	1442	Basalt, brn, frac, med
1442	1448	Basalt, brn/gray, frac, med
1448	1453	Basalt, gray/redish, frac, med/hrd
1453	1493	Basalt, gray, hrd
1493	1494	Basalt, brn w/gray clay, sft
1494	1495	Basalt, gray w/grn claystone, ves, sft
1495	1497	Basalt, brn w/cinders red, ves, sft
1497	1503	Basalt, brn, frac, ves, sft/med
1503	1504	Basalt, brn/gray, ves, frac, med
1504	1518	Basalt, gray, frac, ves, med
1518	1538	Basalt, gray, frac, med/hrd
1538	1559	Basalt, gray, frac, hrd

1559	1562	Basalt, gray w/ves brn claystone, ves, med
1562	1564	Basalt, gray, frac, med/hrd
1564	1568	Basalt, gray, frac w/weatherd basalt, brn, ves, med
1568	1578	Basalt, gray w/gray clay, frac, sft
1578	1583	Basalt, gray, ves, frac, w/silt stone, gray, ves, sft
1583	1584	Basalt, multi-color, frac, ves, w/clay, gray, sft
1584	1586	Basalt, multi-color, frac, ves, sft/med
1586	1593	Basalt, gray, frac, ves, med
1593	1599	Basalt, gray, frac, med/hrd
1599	1609	Basalt, gray, hrd
1609	1611	Basalt, gray, gray, med/hrd
1611	1655	Basalt, gray, v hrd
1655	1656	Basalt, gray, frac, hrd
1656	1663	Basalt, gray, frac, w/weathered basalt, brn, ves, med
1663	1669	Basalt, gray, frac, ves, med
1669	1673	Basalt, gray, frac, slightly ves, med
1673	1675	Basalt, gray, frac, med/hrd
1675	1687	Basalt, gray, frac, w/brn speckles, med/hrd
1687	1692	Basalt, gray, frac, med/hrd
1692	1701	Basalt, gray, hard

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

☒ Construction 309978

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT

Notice of Intent No. WE07912

Unique Ecology Well ID Tag No. AKN517

Water Right Permit No. CG4-GWC2553-A

Property Owner Name City of Sunnyside

Well Street Address 210 S 7th St

City Sunnyside County Yakima

Location SE 1/4-1/4 NW 1/4 Sec 25 Twn 10 R 22 EWM ☒ or WWM ☐ circle one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg 46 Lat Min/Sec 19/40 Long Deg -120 Long Min/Sec 0/34

Tax Parcel No. 22102524544

PROPOSED USE: ☐ Domestic ☐ Industrial ☒ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other

TYPE OF WORK: Owner's number of well (if more than one) 11

☐ New well ☒ Reconditioned ☐ Deepened *Method:* ☐ Dug ☐ Bored ☐ Driven ☒ Cable ☐ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 16 inches, drilled 435 ft.

Depth of completed well 419.5 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 16 " Diam. from +1 ft. to 380.4 ft.

☐ Liner installed " Diam. from ft. to ft.

☐ Threaded " Diam. from ft. to ft.

Perforations: ☐ Yes ☐ No

Type of perforator used

SIZE of perfs in. by in. and no. of perfs from ft. to ft.

Screens: ☒ Yes ☐ No ☐ K-Pac Location

Manufacturer's Name

Type stainless steel V-wire Model No.

Diam. 8 Slot size 0.040 from 377 ft. to 417 ft.

Diam. 14 Slot size 0.080 from 377 ft. to 417 ft.

Gravel/Filter packed: ☒ Yes ☐ No ☒ Size of gravel/sand 10/20

Materials placed from 360 ft. to 420 ft.

Surface Seal: ☒ Yes ☐ No To what depth? 300 ft.

Material used in seal neat cement 0-18, bentonite grout 18-300

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? Depth of strata

Method of sealing strata off

PUMP: Manufacturer's Name

Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level 750 ft.

Static level 13.2 ft. below top of well Date 1/7/08

Artesian pressure lbs. per square inch Date

Artesian water is controlled by (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? Foremost Pmp

Yield: 700 gal./min. with 100 ft. drawdown after 1 hrs.

Yield: 700 gal./min. with 108.5 ft. drawdown after 2 hrs.

Yield: 700 gal./min. with 116.3 ft. drawdown after 3 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test gal./min. with ft. drawdown after hrs.

Airtest gal./min. with stem set at ft. for hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
This reconditioning consisted of lowering a 63' x 8"		
screen assembly inside the existing 14" screen.		
The annular space between the screens was then		
filled with 10/20 sand.		
8" stainless steel riser	357	360
8" x 0.040" slot relief screen	360	363
8" stailess steel blank	363	377
8' x 0.40" screen	377	417
8" x stailess steel sump	417	420
A diaghram of the screen installation is attached.		
Job #07-1519-03		

Start Date 1/7/08 Completed Date 1/10/08

DEPT OF ECOLOGY Received FEB 13 2008 CENTRAL REGION OFFICE

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☐ Trainee Name (Print) James Vignali

Driller/Engineer/Trainee Signature James Vignali

Driller or trainee License No. 0987

If TRAINEE,

Driller's Licensed No.

Driller's Signature

Drilling Company Tacoma Pump & Drilling Co., Inc.

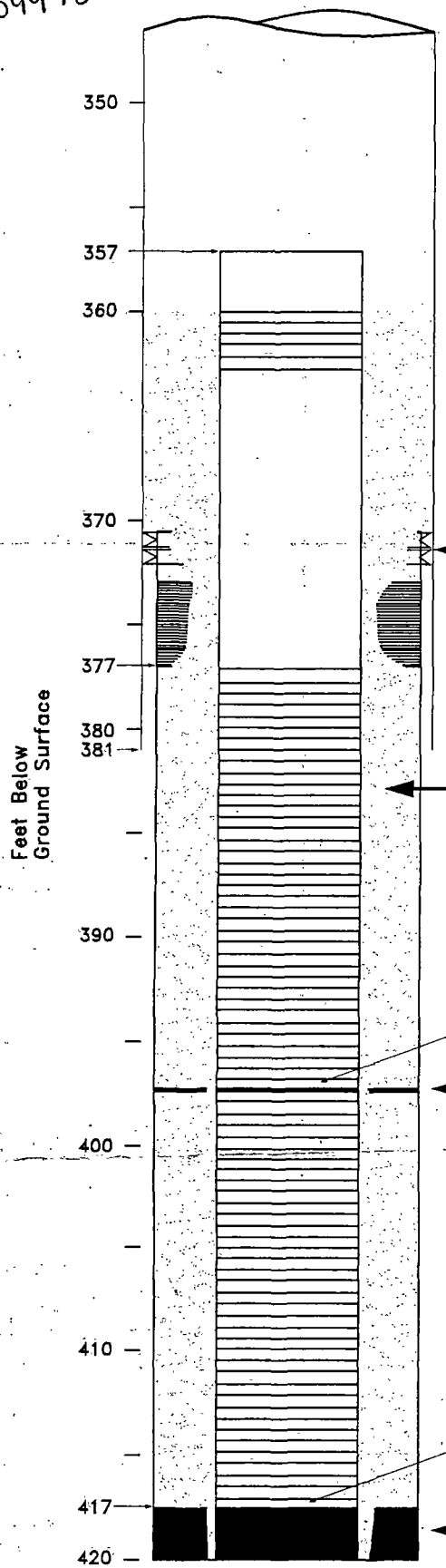
Address 30316 Mountain Highway

City, State, Zip Graham, WA 98338

Contractor's Registration No. TACOMPD203PF Date 2/11/08

Ecology is an Equal Opportunity Employer.

309978



8-inch Screen To Be Built

8-inch Pipe Size 30-slot Pressure Relief Screen

8-inch Stainless Steel Riser Pipe

Centralizer (See Detail)

Filter Pack Colorado Silica Sand #10-20

8-inch Pipe Size 40-slot Screen

Double Weld Ring

Centralizer (See Detail)

Weld Ring and 8-inch Stainless Steel Tail Pipe

Centralizer (See Detail)

Existing 14-inch Screen

Double K-packer

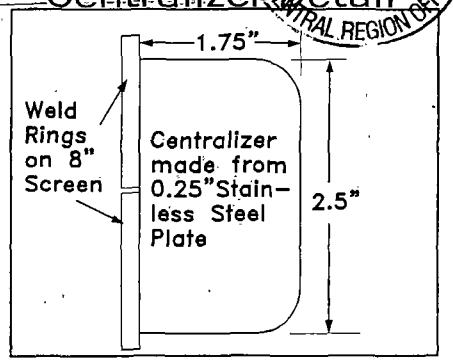
Tight-wind Screen

End of 16-inch Casing

14-inch Pipe Size 80-slot Screen

Double Weld Ring

Centralizer Detail



Weld Ring 14-inch Stainless Steel Tail Pipe

Russ 206-979-3230

SUNNYSIDE WELL 11
PROPOSED SCREEN DESIGN

CORRECTED COPY

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

☒ Construction 324538

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT
Notice of Intent No. WE09456

Unique Ecology Well ID Tag No. ALM-337

Water Right Permit No. _____

Property Owner Name City of Sunnyside

Well Street Address 2330 Outlook Road

City Sunnyside County Yakima

Location NE 1/4-1/4 NW 1/4 Sec 27 Twn 10 R 22 EWM ☑ or WWM ☐ circle one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec C

Tax Parcel No. 22102712004

PROPOSED USE: ☐ Domestic ☐ Industrial ☑ Municipal ☐ DeWater ☐ Irrigation ☑ Test Well ☐ Other TW-3

TYPE OF WORK: Owner's number of well (if more than one) _____

☑ New well ☐ Reconditioned ☐ Deepened *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Cable ☑ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 397 ft.
Depth of completed well 399.5 ft

CONSTRUCTION DETAILS

Casing Installed: ☑ Welded 6 " Diam. from +2.5 ft. to 382.5 ft.
☐ Liner installed _____ " Diam. from _____ ft. to _____ ft.
☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☑ No
Type of perforator used _____
SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☑ Yes ☐ No ☑ K-Pac Location 378.5
Manufacturer's Name Johnson
Type S.S. Telescopic Model No. _____
Diam. 5 Slot size 40 from 383.5 ft. to 399.5 ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☑ No ☐ Size of gravel/sand _____
Materials placed from _____ ft. to _____ ft.

Surface Seal: ☑ Yes ☐ No To what depth? 135 ft.
Material used in seal Neat Cement
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

PUMP: Manufacturer's Name _____
Type. _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level +23 ft. below top of well Date _____
Artesian pressure 10 lbs. per square inch Date 9/20/07
Artesian water is controlled by 8 Bolt Flange, Valve, Gauge (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☑ No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 200+ gal./min. with stem set at 378 ft. for 2+ hrs.
Artesian flow 110 g.p.m. Date 09/20/2007
Temperature of water _____ Was a chemical analysis made? ☐ Yes ☑ No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Brown silty fine sand.	0	2
Grayish-brown clayey silt.	2	10
Moist brown silty sand	10	33
Slightly dense brown sandy silt.	33	52
Lightly cemented course brown sand, water bearing	52	95
60+ gpm		
Looser brown clayey sand & gravel, medium	95	104
Brown silty clay with fine gravel.	104	110
Light brown silty clay.	110	123
Blue clay.	123	133
Gray clay.	133	167
Brown coarse silty cemented sand, water bearing,	167	203
flowing.		
Brown silty sand with medium gravels.	203	223
Brownish-gray clay.	223	226
Brown silty sand & gravel, water bearing.	226	232
Light brown silty clay.	232	234
Brown silty coarse sand & gravel.	234	266
Light brown silty clay	266	276
Brown fine to medium silty sand & medium gravel,	276	397
water bearing.		

RECEIVED
DEC 01 2008
DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Job 07-1533-07

Start Date 09/12/2007 Completed Date 09/20/2007

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

■ Driller ☐ Engineer ☐ Trainee Name (Print) Matt Call

Driller/Engineer/Trainee Signature _____

Driller or trainee License No 2571

If TRAINEE,
Driller's Licensed No. _____
Driller's Signature _____

Drilling Company Tacoma Pump & Drilling Co., Inc

Address 30316 Mountain Highway

City, State, Zip Graham, WA 98338

Contractor's Registration No. TACOMPD203PF Date 11/25/2008

Ecology is an Equal Opportunity Employer.

CORRECTED COPY

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

- [x] Construction
- [ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 415594

CURRENT
Notice of Intent No. WE11330

Unique Ecology Well ID Tag No. BAL 875

Water Right Permit No. CG4-GWC2553-A@1;YAKI-07-21

Property Owner Name City of Sunnyside

Well Street Address 2320 Outlook Road

City Sunnyside County Yakima

Location NW 1/4-1/4 NE 1/4 Sec 27 Twn 10 R 22 EWM [x] or WWM [ ] circle one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg 46 Lat Min/Sec 19/53 Long Deg 120 Long Min/Sec 1/20

Tax Parcel No.

PROPOSED USE: [ ] Domestic [ ] Industrial [x] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other Well #13

TYPE OF WORK: Owner's number of well (if more than one)
[x] New well [ ] Reconditioned *Method:* [ ] Dug [ ] Bored [ ] Driven [ ] Deepened [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 12 inches, drilled 450 ft.
Depth of completed well 430.5 ft.

CONSTRUCTION DETAILS
Casing Installed: [x] Welded 16" Diam. from +2 ft. to 265.5 ft.
[ ] Liner installed 12" Diam. from +2.5 ft. to 350.9 ft.
[ ] Threaded " Diam. from ft. to ft.

Perforations: [ ] Yes [x] No
Type of perforator used
SIZE of perfs in. by in. and no. of perfs from ft. to ft.

Screens: [x] Yes [ ] No [x] K-Pac Location See attached drawing
Manufacturer's Name Alloy Machine Works
Type Stainless Steel Model No.
Diam. 10 Slot size Mult from 351 ft. to 430.5 ft.
Diam. 6 Slot size 30 from 346 ft. to 430.5 ft.

Gravel/Filter packed: [x] Yes [ ] No Size of gravel/sand 10-20
Materials placed from 320.4 ft. to 430.5 ft.

Surface Seal: [x] Yes [ ] No To what depth? 267.5 ft.
Material used in seal Neat Cement
Did any strata contain unusable water? [ ] Yes [x] No
Type of water? Depth of strata
Method of sealing strata off

PUMP: Manufacturer's Name
Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level 760 ft.
Static level Flowing ft. below top of well Date
Artesian pressure 9 lbs. per square inch Date 8/25/2010
Artesian water is controlled by Flange, valves (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [x] Yes [ ] No If yes, by whom? TP&D
Yield: 850 gal./min. with 100 ft. drawdown after 1 hrs.
Yield: 850 gal./min. with 120 ft. drawdown after 12 hrs.
Yield: 850 gal./min. with 122 ft. drawdown after 24 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 08/25/2010
Bailer test gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water 64 Was a chemical analysis made? [ ] Yes [x] No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Damp brown silty fine sand	0	3
Damp brown clayey silt	3	52
Lightly cemented coarse brown sand (60 gpm)	52	95
Brown clayey medium sand and gravel	95	105
Brown silty clay with fine gravels	105	110
Light brown silty clay	110	125
Blue clay	125	167
Brown silty sandstone, water bearing	167	203
Brown silty medium sand and gravel	203	234
Tan fine sandy clay	234	239
Brown silty coarse sand and gravel	239	263
Tan clay	263	270
Blue clay	270	278
Tan sandy clay	278	285
Brown silty fine to medium sand and gravel	285	314
Brown sandy silt	314	317
Brown silty medium sand and gravel with cementation bands. Water bearing.	317	397
Tan silty sandy clay with trace medium gravel	397	407
Blue clay	407	418
Medium to coarse sand, gravel with cemented layers	418	450
Water bearing		

RECEIVED
JUN 15 2011
DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Job #10-1599-03

Start Date 04/28/2010 Completed Date 11/04/2010

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[x] Driller [ ] Engineer [ ] Trainee Name (Print) Matt Call FOR MC 0193

Driller/Engineer/Trainee Signature

Driller or trainee License No. 2467-2571

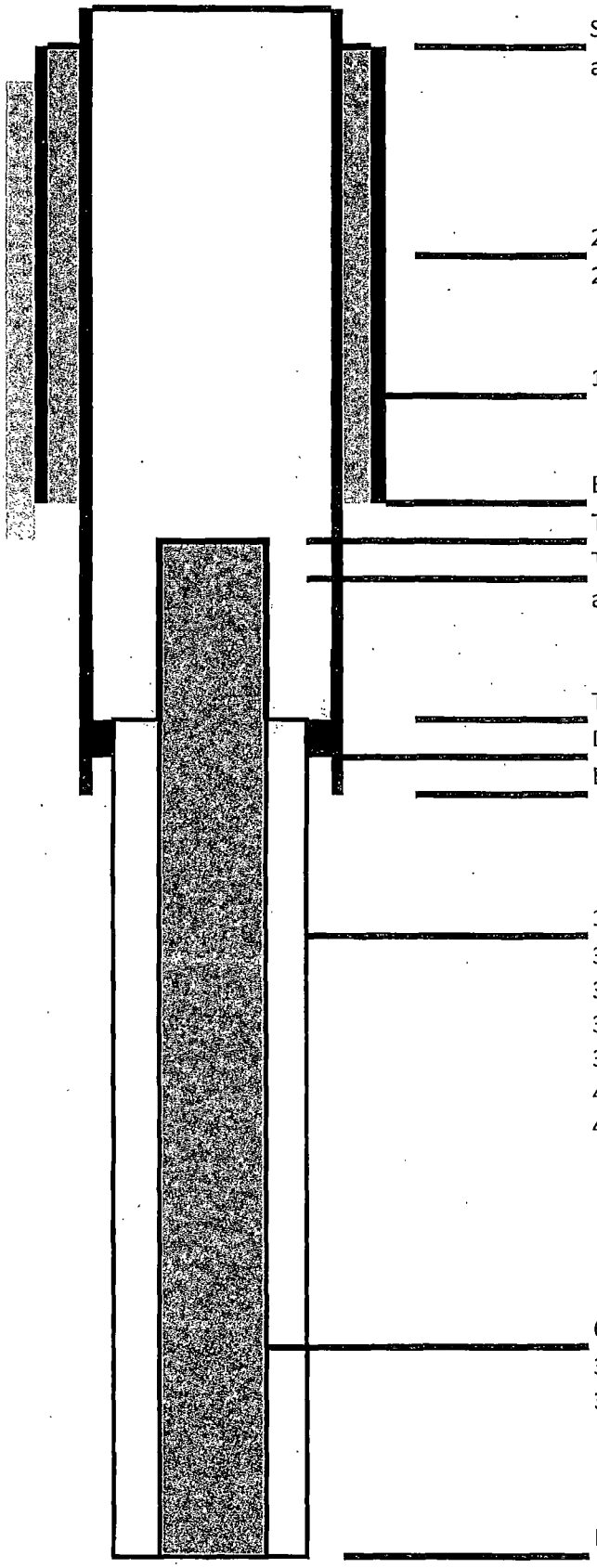
If TRAINEE,
Driller's Licensed No.
Driller's Signature

Drilling Company Tacoma Pump & Drilling Co. Inc.
Address 30316 Mountain Highway
City, State, Zip Graham, WA 98338
Contractor's Registration No. TACOMPD203PF Date 12/03/2010

Ecology is an Equal Opportunity Employer.

415594

Sunnyside Well #13 drawing.xlsx



Split pipe flange welded to 12" and 16" casings, sealing annulus

20" X 16" cement well seal
267.5' to surface

16" X .375 casing

Bottom of 16" @ 265.5'
Top of 6" riser @ 318'
Top Of 10-20 Colorado Silica Sand at 320.4 Ft.

Top of 10" riser @ 345.9'
Double K-Packer 10" x 12"
Bottom of 12" casing @ 350.9'

10" pipe size riser & screen
345.9'-350.9' K-packer & riser
350.9'-377.4' @ .040 slot
377.4' - 397.4' @ .015 slot
397.4' - 405.4' @ .030 slot
405.4' - 420.4' @ .000 titewind
420.4' - 430.5' @ .040 slot

6" pipe size riser & screen
318' - 345.9' casing blank riser
345.9' - 430.5' @ .030 slot

Bottom @ 430.5 feet, no sumps

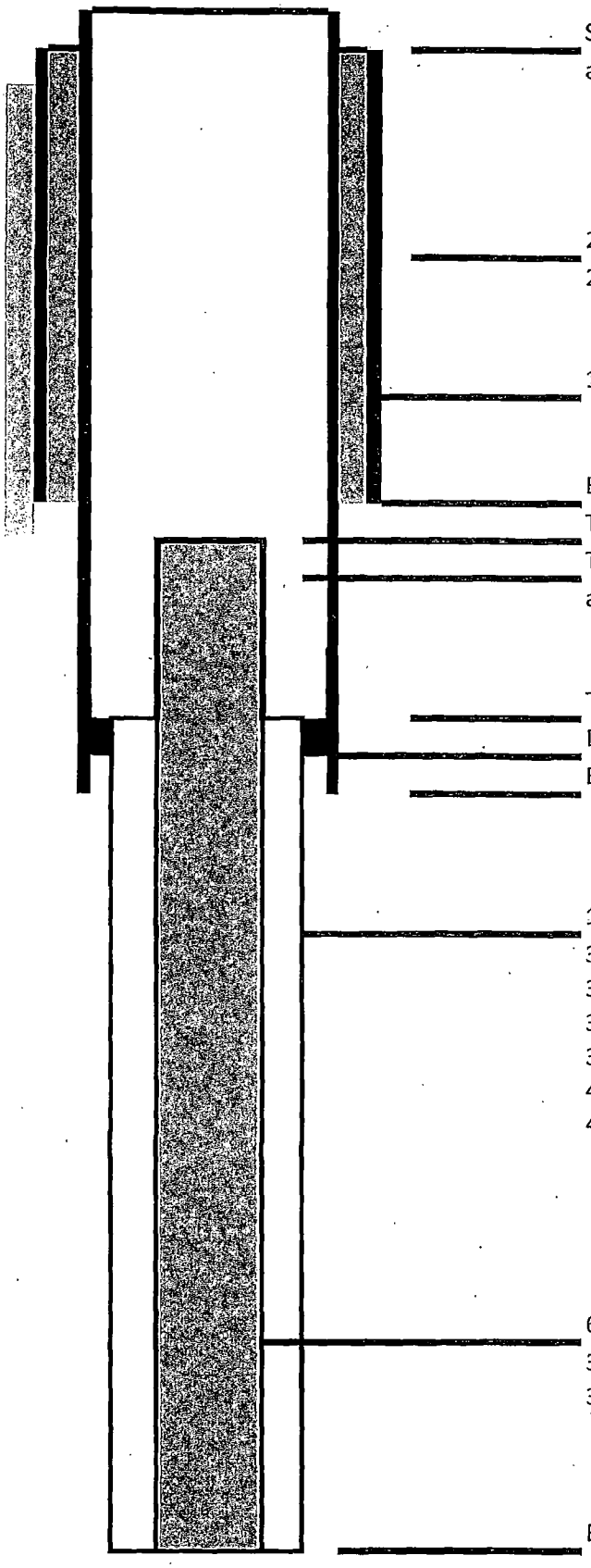
No Scale

All screen sections are pipe size

12/6/2010

415594

Sunnyside Well #13 drawing.xlsx



Split pipe flange welded to 12" and 16" casings, sealing annulus

20" X 16" cement well seal
267.5' to surface

16" X .375 casing

Bottom of 16" @ 265.5'
Top of 6" riser @ 318'
Top Of 10-20 Colorado Silica Sand at 320.4 Ft.

Top of 10" riser @ 345.9'
Double K-Packer 10" x 12"
Bottom of 12" casing @ 350.9'

10" pipe size riser & screen
345.9'-350.9' K-packer & riser
350.9'-377.4' @ .040 slot
377.4' - 397.4' @ .015 slot
397.4' - 405.4' @ .030 slot
405.4' - 420.4' @ .000 titewind
420.4' - 430.5' @ .040 slot

6" pipe size riser & screen
318' - 345.9' casing blank riser
345.9' - 430.5' @ .030 slot

Bottom @ 430.5 feet, no sumps

No Scale

All screen sections are pipe size

12/3/2010

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

- [x] Construction
- [ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 415594

CURRENT
Notice of Intent No. WE11330

Unique Ecology Well ID Tag No. BAL875

Water Right Permit No. _____

Property Owner Name City of Sunnyside

Well Street Address 2320 Outlook Rd.

City sunnyside County Yakima

Location NW/4-1/4 NE 1/4 Sec 27 Twn 10 R 22 EWM [x] or WWM [ ] circle one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg 46 Lat Min/Sec 19/53 Long Deg 120 Long Min/Sec 1/20

Tax Parcel No. 22102712004

PROPOSED USE: [ ] Domestic [ ] Industrial [x] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other Well #13

TYPE OF WORK: Owner's number of well (if more than one) _____
[x] New well [ ] Reconditioned [ ] Deepened
Method: [ ] Dug [ ] Bored [ ] Driven [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 12 inches, drilled 450 ft.
Depth of completed well 430.5 ft.

CONSTRUCTION DETAILS
Casing Installed: [x] Welded 12" Diam. from 0 ft. to 350.9 ft.
[ ] Liner installed _____" Diam. from _____ ft. to _____ ft.
[ ] Threaded _____" Diam. from _____ ft. to _____ ft.

Perforations: [ ] Yes [x] No
Type of perforator used _____
SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: [x] Yes [ ] No [x] K-Pac Location 345.9
Manufacturer's Name Alloy Machine Works
Type Stainless Steel Model No. _____
Diam. 10 Slot size Mult from 351 ft. to 430.5 ft.
Diam. 6 Slot size 30 from 346 ft. to 430.5 ft.

Gravel/Filter packed: [x] Yes [ ] No Size of gravel/sand 10-20
Materials placed from 320.4 ft. to 430.5 ft.

Surface Seal: [x] Yes [ ] No To what depth? 265 ft.
Material used in seal Neat Cement
Did any strata contain unusable water? [ ] Yes [ ] No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level 760 ft.
Static level _____ ft. below top of well Date _____
Artesian pressure 9 lbs. per square inch Date 8/25/2010
Artesian water is controlled by Flange, valves (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [x] Yes [ ] No If yes, by whom? TP&D
Yield: 850 gal./min. with 100 ft. drawdown after 1 hrs.
Yield: 850 gal./min. with 120 ft. drawdown after 12 hrs.
Yield: 850 gal./min. with 122 ft. drawdown after 24 hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 8/25/2010
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water 64 Was a chemical analysis made? [ ] Yes [x] No

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Damp brown silty fine sand.	0	3
Damp brown clayey silt.	3	52
Lightly cemented coarse brown san. (60 gpm)	52	95
Brown clayey medium sand and gravel.	95	105
Brown silty clay with fine gravels.	105	110
Light brown silty clay.	110	125
Blue clay	125	167
Brown silty sandstone, water bearing.	167	203
Brown silty medium sand and gravel.	203	234
Tan fine sandy clay.	234	239
Brown silty coarse sand and gravel.	239	263
Tan clay.	263	270
Blue clay	270	278
Tan sandy clay.	278	285
Brown silty fine to medium sand and gravel.	285	314
Brown sandy silt.	314	317
Brown silty medium sand and gravel with cementation bands. Water bearing.	317	397
Tan silty sandy clay with trace medium gravel.	397	407
Blue clay.	407	418
Medium to coarse sand, gravel with cemented layers. Water bearing.	418	

RECEIVED
NOV 24 2010
DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Job #10-1599-03

Start Date 4/28/2010 Completed Date 6/17/2010

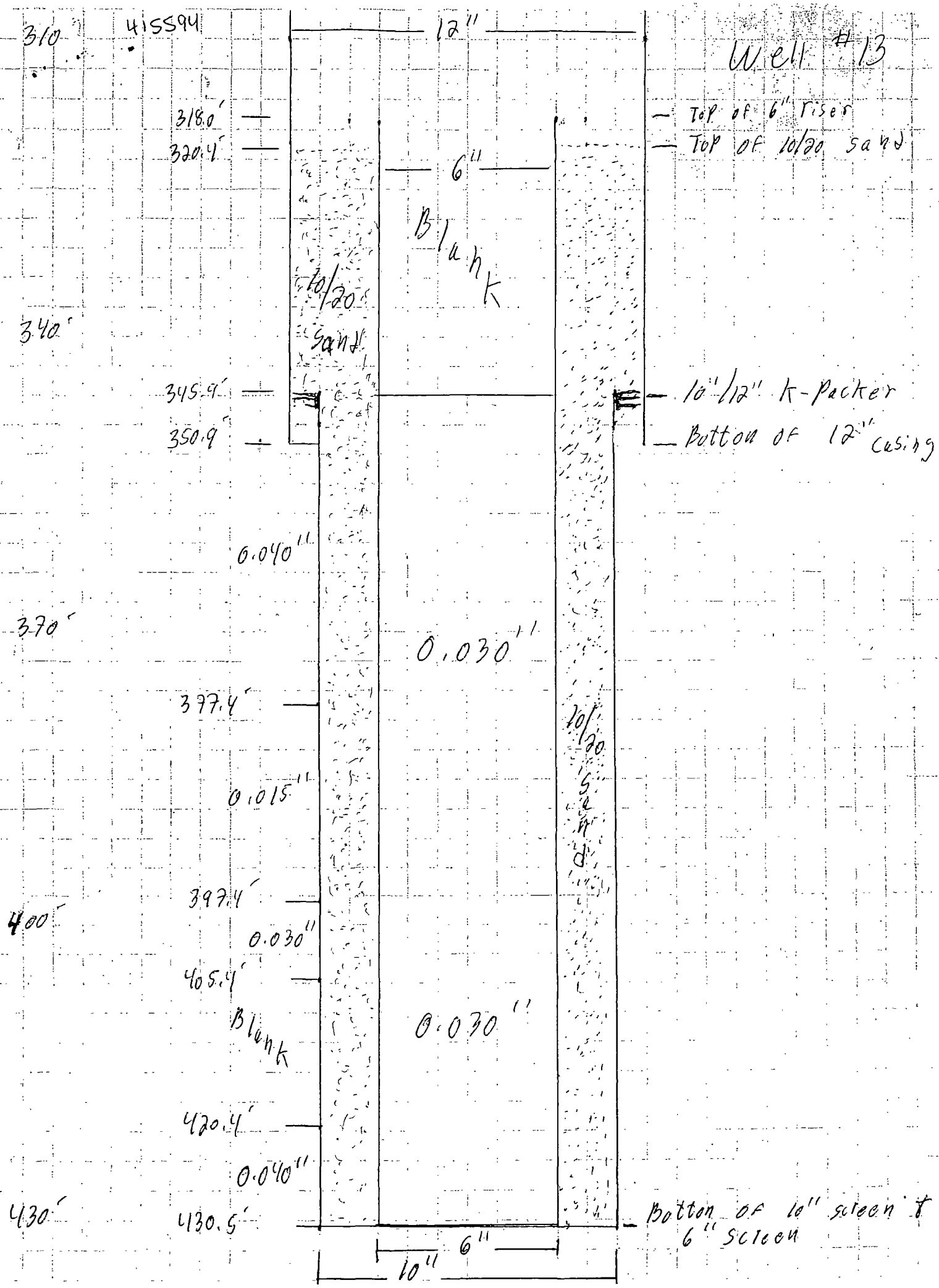
WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

[x] Driller [ ] Engineer [ ] Trainee Name (Print) Matt Call
Driller/Engineer/Trainee Signature Matt Call
Driller or trainee License No. 2467-2571

If TRAINEE,
Driller's Licensed No. _____
Driller's Signature _____

Drilling Company Tacoma Pump & Drilling Co., Inc.
Address 30316 Mountain Highway
City, State, Zip Graham, WA 98338
Contractor's Registration No. TACOMPD203PF Date 11/15/2010

Ecology is an Equal Opportunity Employer.



City of SUNNYSIDE WASHINGTON

11

Wellhead Protection Plan Excerpts

HLA Engineering and Land Surveying, Inc.

Report Prepared for

City of Sunnyside

Wellhead Protection Plan

January 2005

Contents

6 Spill Response Plan

7 Contingency Planning

8 Recommended Management Practices

References

Appendices

Tables and Exhibits

Tables

Exhibits

References

Blandford, T.N. and P.S. Huyakorn. 1993. Well head protection area delineation code, version 2.11: U.S. Environmental Protection Agency Office of Groundwater Protection.

Driscoll, F.G. 1986. Groundwater and Wells, 2nd ed.: St. Paul, Minn., Johnson Division, 1089 p.

Drost, B.W., and K.J Whiteman. 1986. Surficial geology, structure, and thickness of selected geohydrologic units in the Columbia Plateau, Washington: U.S. Geological Survey Water Resources Investigations Report 84-4326.

Drost, B.W., K.J.Whiteman, and J.B. Gonthier. 1990. Geologic framework of the Columbia Plateau aquifer system, Washington, Oregon, and Idaho: U.S. Geological Survey Water-Resources Investigations Report 87-4238.

Economic & Engineering Services (EES). 2001. Wellhead Protection Plan for the City of Richland.

EES. 2002. Wellhead Protection Plan for the City of West Richland. September.

Freeze, R.A., and J.A. Cherry. 1979. Groundwater: Englewood Cliffs, New Jersey, Prentice-Hall, 604 p.

Jim Hill, Yakima Co. Office of Emergency Management, September 19, 2003

Lane, R.C. and K.J. Whiteman. 1989. Ground-water levels, spring 1985, and ground-water level changes, spring 1983 to spring 1985, in three basalt units underlying the Columbia Plateau, Washington and Oregon: U.S. Geological Survey Water-Resources Investigations Report 88-4018.

Rockwell International. 1979. Hydrologic studies within the Columbia Plateau, Washington, an integration of current knowledge: Richland, Wash., Rockwell Hanford Operations, RHO-BWI-ST-5.

Sublette, W.R. 1986. Rock mechanics data package, Rev. 1: Richland, Wash., Rockwell Hanford Operations Report SD-BWI-DP-041, 78 p.

Todd, D.K. 1980. Groundwater hydrology, 2nd ed.: New York, Wiley.

USGS. (http://wa.water.usgs.gov/yakimagw/Data.html)

U.S. Nuclear Regulatory Commission. 1983. Draft site characterization analysis of the site characterization report for the basalt waste isolation project, Hanford, Washington site, main report and appendices A through D: Washington, D.C., NUREG-0960, v. 1, March.

Vaccaro, J.J. 1999. Summary of the Columbia Plateau Regional Aquifer System Analysis, Washington, Oregon, and Idaho. U.S. Geological Survey Professional Paper 1413-A.

Washington State Department of Health. 1995. Wellhead Protection Program Guidance Document. Publication #331-018.

Washington State Department of Health. 1995. Source Water Assessment Program.

Whiteman, K.J., JJ. Vaccarro, J.B. Gonthier, and H.H. Bauer. 1994. The Hydrogeologic Framework and Geochemistry of the Columbia Plateau Aquifer System, Washington, Oregon, and Idaho. U.S. Geological Survey Paper 1413-B.

Section 1
Introduction

1.1 Purpose of Plan

All Group A Public Water Systems with ground water production sources are required to develop and implement a Wellhead Protection Program (WHPP) in accordance with Washington Administrative Code (WAC) 246-290-135(3). The purpose of a Wellhead Protection Plan (Plan) is to document and summarize the WHPP and to create a Plan for appropriate improvements to wellhead protection. Each Group A public water system must submit a complete and appropriate Plan to the Washington Department of Health (DOH) as a required component of a Water System Plan (WSP) or Small Water System Management Program. This plan was prepared to meet the requirements set forth in the DOH Wellhead Protection Program Guidance Document (1995).

The goal of a WHPP is to maintain existing source water quality by protecting existing ground water supplies from potential sources of contamination. This Plan aims to document and summarize how the City of Sunnyside's (City) WHPP is achieving these goals and objectives, and recommends management projects to improve wellhead protection. The City of Sunnyside is located approximately 30 miles southeast of the City of Yakima and lies between the Rattlesnake Hills and Horse Heaven Hills in Yakima County (refer to Exhibit 1-1).

The state requires, as a minimum, the following elements with an approved WHPP:

- A completed susceptibility assessment
- A delineated wellhead protection area
- An inventory of potential contamination threats
- Distribution of findings to required entities
- Appropriate spill/incident response measures
- Contingency plans for alternative sources of drinking water

Within wellhead protection areas, potential contaminant sources are to be identified and managed to eliminate or reduce their risk of contaminating public water supplies. Washington's Wellhead Protection Program advocates a progressive management concept, wherein pollution prevention is the preferred approach to ground water protection. Moreover, education and use of Best Management Practices (BMPs) are important measures, which may reduce or eliminate the need for restrictive regulatory protection plans.

In some settings, the adoption of zoning ordinances or codes, which limit activities around the water supply may be desirable. Moreover, the controlling entity may elect to set design and/or operational standards for facilities located within the wellhead protection area, as needed. Local public water systems have the primary responsibility for developing and implementing local wellhead protection programs. Local departments of community development or similar local planning agencies have a key role in assuring that wellhead protection programs are integrated into the overall community planning. Due to the limited jurisdictional and regulatory authority

afforded most purveyors, it is essential that they work with other local, state, and federal agencies to ensure the successful implementation and enforcement of the wellhead protection plan.

1.2 Scope of Plan

The planning area for this effort includes the entire municipal boundary, as well as the estimated areas thought to contribute to the City of Sunnyside's present ground water supply. This Plan was prepared through the review and synthesis of available source water protection data, including data and information from City and government agency files, previous planning efforts, and published scientific studies, as appropriate. No additional field data was collected in conjunction with this Plan. This Plan focuses on water quality issues that potentially threaten the City's wells. Local and regional ground water quality issues with no relation to the City's wells (e.g., salt water intrusion) are not explored.

The City has not previously submitted a wellhead protection plan to DOH. However, the City submitted Susceptibility Assessment Survey Forms to DOH for Wells No. 4A, 5, 6, 7, 8, and 9. All of these wells with the exception of Well No. 4A are being used by the City A copy of the susceptibility assessment survey forms are included in Appendix A.

1.3 Plan Preparation

This Plan has been prepared in accordance with an agreement between the City and Economic and Engineering Services, Inc. (EES). The Plan was developed solely by EES with information, input, and review from the City.

1.4 Coordination with Other Plans

There are several other Federal, State and local programs that complement the City's wellhead protection planning effort. A partial list of those programs include:

- State Environmental Policy Act
- Growth Management Act
- Water System Coordination Act
- Special Protection Areas
- Comprehensive Water System Planning

Brief descriptions for each program are outlined below:

1.4.1 State Environmental Policy Act

Environmentally Sensitive Areas (ESAs) can be designated by a local government under authorities provided by the State Environmental Policy Act (SEPA, Chapter 197-11 WAC and related local authorities). This designation can provide additional protection to specific areas such as vulnerable wellhead protection areas than would be accomplished under standard SEPA guidelines. This additional protection occurs because categorical exemptions can be modified.

The ESA designation can impact underground storage tanks, facilities affecting stormwater, and other potential sources of ground water contamination.

1.4.2 Growth Management Act

Local jurisdictions planning under the Growth Management Act (GMA) are required to identify Critical Aquifer Recharge Areas (CARAs). The GMA requires all counties/cities to classify, designate, and regulate to protect "areas with a critical recharging effect on aquifers used for potable waters." The areas delineated under the wellhead protection plan are often used to define the limits of the CARAs.

1.4.3 Water System Coordination Act

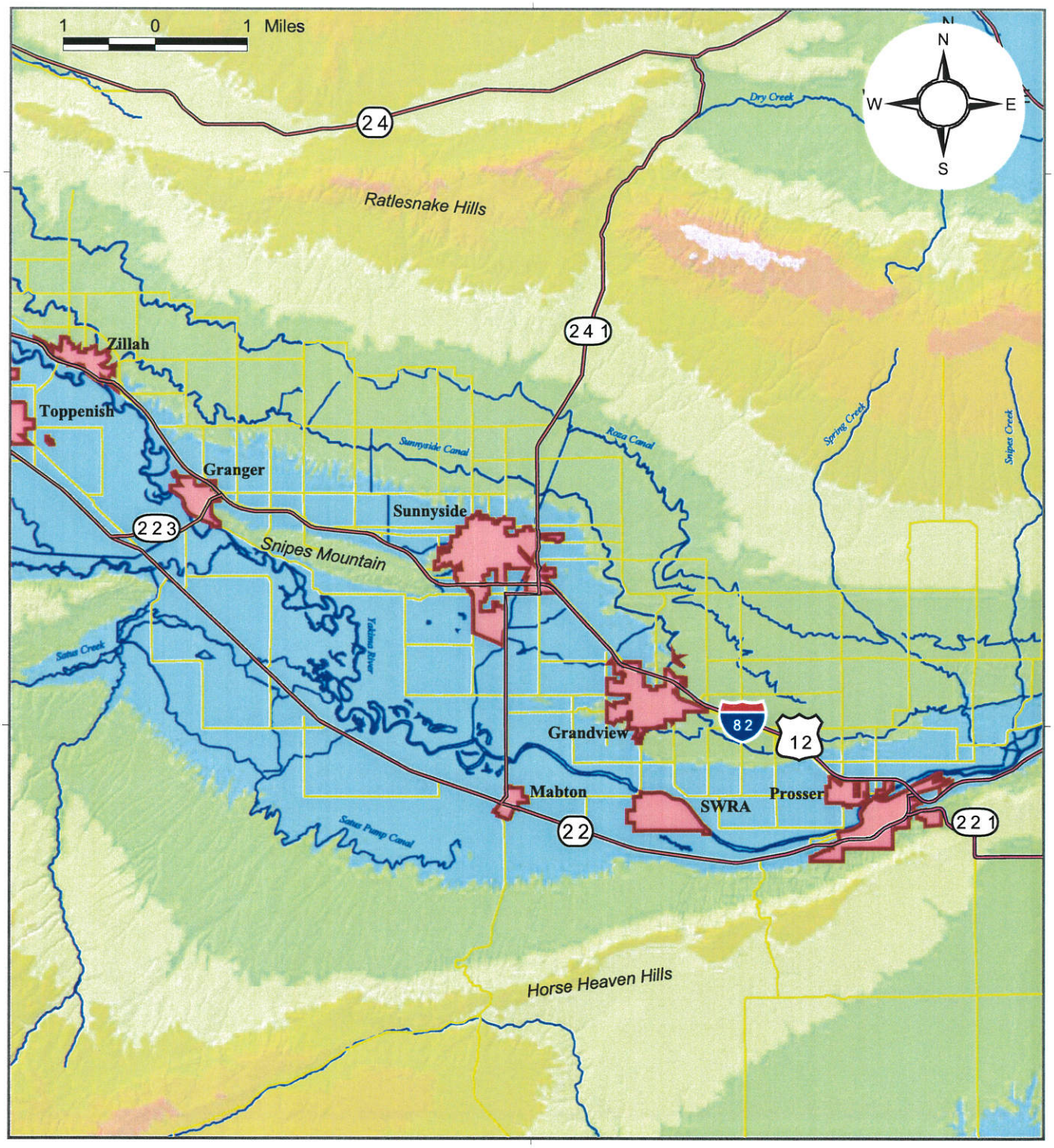
The Water System Coordination Act (Chapter 246-293 WAC) provides a process to assure coordinated regional planning for public water systems within defined Critical Water Supply Service Areas. A primary objective of the law is to integrate water system development with land use planning in a given area so as to minimize conflicts between land use and water system plans. An early activity in this regional planning process is establishment of a Water Utility Coordinating Committee. The committee's purpose is to organize a local partnership between county legislative authority, county planning agency, county health agency, water purveyors, and DOH to develop and implement workable solutions to water system problems. Other interested agencies, organizations or individuals may also participate in the Committee.

1.4.4 Special Protection Areas

Chapter 173-20 WAC, Water Quality Standards for Ground Waters, provides for the designation of Special Protection Areas that require special consideration or protection due to unique or vulnerable characteristics. These characteristics include critical recharge areas and wellhead protection areas. Designation of a vulnerable wellhead protection area as a Special Protection Area may result in stricter discharge limits placed on state waste discharge permits, and/or increased outreach, regulatory inspections and enforcement actions.

1.4.5 Comprehensive Water System Planning

This plan is prepared in accordance with guidelines established under WAC 246-290-100 regarding Water System Plans and is an integral part of the City's current Comprehensive Water System Plan (WSP).



LEGEND

- City Limits
- State Roads
- Local Roads
- Rivers, Streams, Canals

Elevation

- 260 - 800 ft
- 800 - 1300 ft
- 1300 - 1800 ft
- 1800 - 2300 ft
- 2300 - 2800 ft
- 2800 - 3300 ft
- 3300 - 3800 ft
- 3800 - 4300 ft
- No Data

EXHIBIT 1-1
City of Sunnyside
Regional Map

October 2003

ees
Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities

M:\ArcView\Sunnyside_WHPP\Project

10/3/2003 2 PM

Section 2
System Background Information

2.1 Municipal System Overview

The City of Sunnyside (City) produces its entire potable water supply from ground water aquifers beneath the City. The City currently has six municipal wells in operation (Wells No. 4A, 5, 6, 7, 8, and 9), all located within the city limits. The locations of the six sources are displayed in Exhibit 4-1. Well completion information for each source is presented in Table 2-1 for the wells still in operation. Associated well logs and well completion reports are included in Appendix B.

Historically, the City's Wells No. 1 and No. 2 were officially abandoned and closed in 1995. Their use was discontinued due to VOC (volatile organic compounds) detections and determination of poor water quality and aquifer contamination. Wells No. 3 and 4 were abandoned in 1998. The well casings in these wells were found to be leaking, resulting in "cross-contamination" between the alluvial and basalt aquifers. The City chose to abandon these wells rather than put in new casing. The water rights for each of these wells were transferred to Wells No 8, 9, and 4A. To replace these wells, the City drilled Well No. 8 in 1994, and Well No. 9 and No. 4A in 1998. Well No. 9 is located at the City's airport and Well No. 4A is located approximately 100 feet from Well No. 4. However, hydrogen sulfide ("rotten egg" smell) was detected in Well 4A shortly after it was put on-line. This poses no health problems, but causes taste and odor problems, and as a result the City does not currently use Well No. 4A.

As noted in Table 2-2, the municipal water wells (No. 4A – 9) at present have a combined instantaneous pumping capacity of 6,100 gpm. However, wells No. 6 and No. 7 influence each other and both cannot be run together for extended periods. Prior to 1995, Wells No. 5, No. 6, and No. 7 historically supplied over 95 percent of the total production. Table 2-2 also summarizes the historical production of the wells from 1997 to 2002. Currently, Well No. 4A and 5 are considered emergency wells. Pumping records since 1997 show that use of Wells No. 5 and No. 6 have steadily decreased and are currently used for emergency and peak use purposes only. Well No. 7 is currently used as the main supplement for meeting higher demands during the irrigation periods. Wells No. 8 and 9 are currently used as the primary water supply for the City. Exhibit 2-1 shows the annual production of Wells No. 4A through No. 9 since 1997.

Table 2-1
Well Construction Details

Well Number	Location	Date Constructed	Surface Elevation	Total Depth	Seal Interval	Seal Material	Perforated Intervals	Uncased Intervals	Total Uncased and Perforated Length Total	Geologic Material of Productive Zones Geologic	Aquifer Name	Borehole Diameter in Productive Zones Borehole
4A	SE 1/4, NW 1/4, Sec. 25, T10N, R22E	12/23/1998	745	1,700	*0-1,202*	Cement	1283-1325 1359-1402 1423-1435 1435-1448 1490-1541 1552-1615 *1655-1676*	N/A	245	Basalt Basalt Basalt Basalt Basalt Basalt Basalt	Wanapum Wanapum Wanapum Wanapum Wanapum Wanapum Wanapum	
5	SW 1/4, NW 1/4, Sec. 25, T10N, R22E	12/12/1953	740	453	Unknown	Concrete	388-450	N/A	62	Sand, Gravel	Alluvium	16
6	NW 1/4, SW 1/4, Sec. 30, T10N, R22E	6/??/1963	742	769	*217-269*	*Cement*	*N/A*	*N/A*	*260*	*Basalt*	Saddle Mountains	*8*
7	SW 1/4, NW 1/4, Sec. 36, T10N, R22E	3/18/1974	727	1,057	0-541	Cement	887-927 986-1026	N/A	80	Basalt Basalt	Saddle Mountains	4
8	NE 1/4, NE 1/4, Sec. 26, T10N, R22E	6/9/1994	749	440	0-325	Cement	305-308 325-375	N/A	*53*	Sand, Gravel Sand, Gravel	Alluvium Alluvium	10 10
9	SW 1/4, NE 1/4, Sec. 29, T10N, R23E	11/21/1997	756	1000	0-471	Cement	465-535 535-613 613-904	N/A	439	Basalt Basalt Basalt	Saddle Mountains Saddle Mountains Saddle Mountains	3 3 12

Table 2-2
Summary of Pumping Capacity and Historical Production

Well No.	Aquifer Unit	Instantaneous Water Right	Pumping Capacity	Historical Production Rates (1997-2002) (gpm)		
				Max. Week	Max. Week in 2002	Annual Average in 2002
4a	Wanapum Basalt	1,000	950	N/A	N/A	N/A
5	Alluvium Overburden	1,500	850	906	14	0.27
6	Saddle Mountain Basalt	1,570	850	810	523	36.2
7	Saddle Mountain Basalt	950	1,150	2,535	1,181	646
8	Alluvium Overburden	800	800	1,141	717	614
9	Saddle Mountain Basalt	2,000*	1,500	1,512	1,161	645

**2,000 gpm is based on permit G4-31581P for developing Wells No. 9, 10, and 11.*

2.2 Water Rights

The City's existing ground water rights are documented by seven certificates of ground water rights and one permit. Department of Ecology and the City differ in their legal interpretation of the annual quantities of water rights certified for Wells No. 5, 6 and 7. The City's position is that the total annual quantity total 5,576 afy for all existing water rights, while Ecology's position is that the annual quantity limit is 1,756 afy for all water rights. This issue is based on the wording in the Report of Examination and subsequent Ground Water Permit No. G4-31581P. The wording in this Report and Permit is the latest written documentation by the Department of Ecology (Ecology) related to the City's water rights. The issue is whether or not the annual quantity (QA) in afy, that is shown on the ground water rights that have been issued for Well Nos. 5, 6, and 7, is primary or supplemental. The wording in the Report of Examination and subsequent Permit No. G4-31581P does not resolve this conflict in interpretation, but instead shows both interpretations, and leaves the decision to be made at a later date, prior to issuance of the certificate.

2.3 Source Water Quality

The City of Sunnyside collects water quality samples on a regular basis to satisfy EPA and DOH requirements. The source of supply wells must be tested for both inorganic and volatile organic compounds (VOC) on an ongoing basis. Ground water wells must be sampled once every three years for inorganic chemicals. Table 2-3 summarizes the water quality data collected between 1998 and 2002 for the wells that are currently in operation by the City. Table 2-3 lists those constituents that had at least one detection during that sampling period. Constituents that had a

detection above EPA's maximum contaminant level (MCL) are indicated in Table 2-3. Note that hundreds of other compounds were tested but were not detected. Giardia, cryptosporidum, E. coli, and coliform were not present or detected in any of the samples from any of the wells during this period. Additional water quality monitoring information for the wells are included in Appendix C.

Historically, the City's wells have generally had good quality water. The exceptions were Wells No. 1 and 2, which were abandoned due to VOC detections and determination of poor water quality and aquifer contamination. The 1995 Water System Plan included a review of water quality test results on the City's well waters. Data since the 1960's revealed good results for Wells No. 3, 4, 5, 6, and 7. However as mentioned earlier, Wells No. 3 and 4 were abandoned. Both had high iron and turbidity and also had leaks in their casing.

As indicated in the monitoring results in Table 2-3, Wells No. 5, 6 and 7 have had historical concentrations of iron and manganese above drinking water standards. Well No. 9 has also had some historical exceedances for manganese and sodium. The concentrations of the constituents are typical of concentrations in ground water resulting from the natural geology in the area. Elevated levels of iron and manganese are often found in ground waters in Eastern Washington. The presence of iron and manganese in water supplies is objectionable because they cause discoloration of water and can stain plumbing fixtures ad laundry. They are also associated with the accumulations of microbial growth which can result in taste and odor complaints. Sunnyside has experienced water discoloration and has to frequently flush many of its pipelines to minimize the problems.

Other water quality issues are related with Wells No. 4A and 5. As noted above, Well No. 4A has not been used regularly since its construction because hydrogen sulfide was detected. Although it poses no health risk, it may cause taste and odor discomfort for customers, and is the reason why the City does not currently use the well on a regular basis. Finally, recent testing for arsenic in well waters indicates that arsenic levels in Well No. 5 exceeded the EPA MCL in 2002. Well No. 5 is currently used as a back-up supply and is seldom in service. The average after blending with other waters from source wells is well under the MCL. Arsenic is also found naturally in the geology of the region. The City is conducting on-going testing and will examine treatment needs for arsenic.

Table 2-3
Water Quality Analysis Results for 1998-2002

Compounds	Year	Well No. 5	Well No. 6	Well No. 7	Well No. 8	Well No. 9
Iron	1998	ND	0.23	0.14	ND	ND
	1999	ND	0.16	0.14	ND	ND
(MCL = 0.3 mg/L)	2000	**1.35**	0.16	ND	ND	ND
	2001	**2.7**	0.16	ND	ND	ND
	2002	ND	0.16	ND	ND	ND
Manganese	1998	ND	**0.056**	0.042	ND	0.049
	1999	ND	**0.06**	0.045	ND	0.048
(MCL = 0.05 mg/L)	2000	0.045	**0.064**	0.045	ND	0.044
	2001	**0.091**	**0.06**	**0.054**	ND	0.044
	2002	0.016	**0.06**	**0.054**	ND	**0.053**
Sodium	1998	**20**	14	**22**	17	**25**
	1999	**20**	14	**21**	17	**20**
(MCL = 20 mg/L)	2000	19	14	ND	17	18.5
	2001	19	14	ND	17	17
	2002	18	14	ND	17	15
Fluoride	1998	0.5	ND	0.5	0.5	0.4
	1999	0.4	0.03	0.3	0.4	0.03
(MCL = 2 mg/L)	2000	0.4	0.3	0.3	0.4	0.33
	2001	ND	0.3	0.3	0.4	0.35
	2002	0.5	0.3	0.3	0.4	0.4
Nitrate	1998	1.3	ND	ND	1.5	ND
	1999	3.9	1.2	1.3	3.3	1.3
(MCL = 10 mg/L)	2000	2.7	0.6	1.3	3.3	0.65
	2001	1.4	ND	ND	3.3	ND
	2002	2	ND	ND	1.8	ND
Sulfate	1998	33	35	ND	31	19
	1999	30	32	ND	31	23
(MCL = 250 mg/L)	2000	34	32	ND	31	24
	2001	38	32	ND	31	25
	2002	36	32	ND	31	27
Turbidity	1998	0.5	0.3	0.3	0.2	0.35
	1999	0.14	0.51	0.18	0.16	0.21
(MCL = 1.0 NTU)	2000	0.14	0.51	0.18	0.16	0.21
	2001	14	0.51	0.18	0.16	ND
	2002	1.7	0.51	0.18	0.16	ND
Hardness	1998	160	130	99	140	91
	1999	160	140	110	150	110
(Not regulated)	2000	160	140	110	150	96
	2001	160	140	110	150	82
	2002	160	140	110	150	120
Magnesium	1998	NA	NA	NA	NA	10
	1999	15	15	10	13	12
(Not regulated)	2000	15	15	10	13	10.8
	2001	15	15	10	13	10.85
	2002	15	15	10	13	13
Calcium	1998	NA	NA	NA	NA	20
	1999	40	33	27	38	23
(Not regulated)	2000	40	33	27	38	20
	2001	41	33	27	38	20
	2002	41	33	27	38	26
Arsenic	2002	**0.011**	**0.01**	ND	0.003	0.0063
(MCL = 0.010 ug/L)						

Notes:
Data taken from City of Sunnyside Annual Water Quality Report from 1998 to 2002
Units are the same as that listed for the compounds' MCL
MCL - maximum contaminant level
ND - Not detected

2.4 Susceptibility Assessment

The susceptibility assessment is required of all Group A water systems having a ground water source, as part of the Wellhead Protection Program. The method provides an assessment of the source water's physical susceptibility to contamination in the absence of direct measurements of contaminant use and exposure. The method relies on surrogate indicators such as the physical setting of the source and surrounding land use. Susceptibility is estimated by evaluating the conditions that affect the movement of contaminants from the land surface to a water supply. These conditions include:

- Well depth and construction
- Well pumping rate
- Depth to water
- Local hydrogeology
- Sources of groundwater recharge, including groundwater-surface water interaction

The general procedure used for evaluating well susceptibility involves a qualitative evaluation of these factors. DOH has listed "source susceptibility assessment criteria" as described in the Source Water Assessment Program (DOH 1995). In general, a well's susceptibility increases when it is poorly constructed (e.g., improperly sealed or cased) or when it is located in a hydrogeologic setting where no confining layer or layer of low permeability (aquitard) exists between the aquifer and the ground surface. Wells that allow for interconnection of shallow and deep aquifers are also considered to be more susceptible to contamination. Interconnection of aquifers will allow mixing of groundwater from different aquifer zones. This will occur in: (1) a well constructed using an uncased borehole or perforated intervals in the well casing in multiple aquifers, and/or (2) a well constructed with no seal, which allows vertical percolation along the outside of unsealed casing.

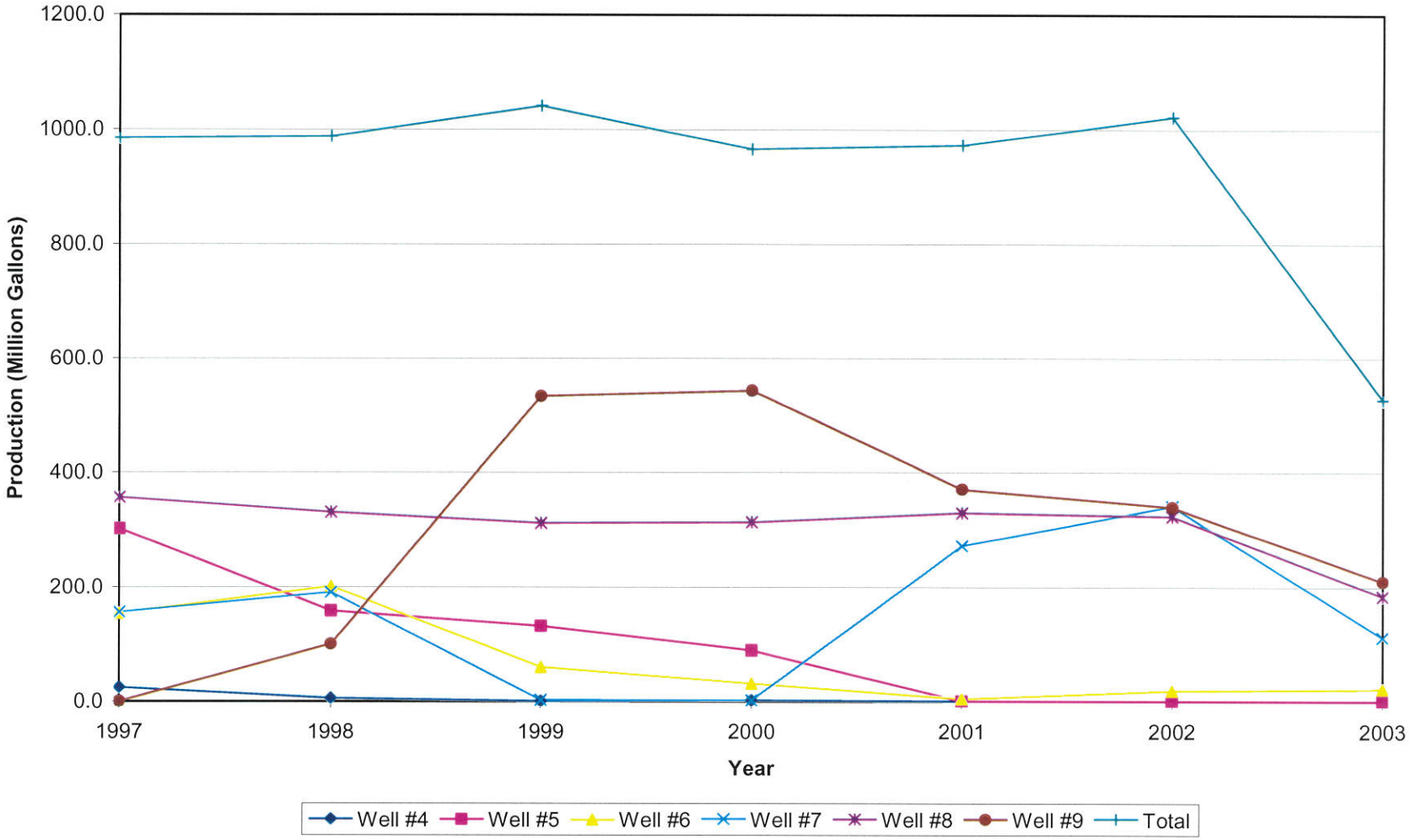
Susceptibility assessment survey forms have been submitted to DOH for all of the City's wells. Table 2-4 presents the current susceptibility rating for each of the sources based on current records at DOH. The survey forms are included in Appendix A with the ratings shown in Table 2-4. These ratings focus on well construction and the local water quality and hydrogeologic character of the aquifer and do not consider degradation of groundwater quality on a regional scale. Regional groundwater quality degradation (e.g., the increase of nitrate concentrations potentially related to widespread agricultural practices) is beyond the local control of wellhead protection planning. This evaluation is conducted at this stage of the Plan to assess the most appropriate type of wellhead protection area delineation method to use (refer to Section 4).

The susceptibility ratings for Wells No. 5, 8, and 9 are low primarily because of the depths of the wells and the thickness of the surface seals associated with the well construction. Wells No. 6 and 7 were given susceptibility ratings of "high" because of the historical VOC detections in the wells. The high rating affects the level of monitoring required of the City and any potential waivers for monitoring that may be granted. At this time, Wells No. 6 and 7 have not had VOC detections since 1998. Well No. 4A does not have a susceptibility rating from DOH because it is considered inactive.

Table 2-4
Summary of Susceptibility Ratings

Well Number	Current DOH Susceptibility Rating	Comments
4A	N/A	Not approved
5	Low	Draws water from alluvium; moderately significant surface seal
6	High	Historical VOC detect; draws water from deep aquifer zone with a confining layer; moderately significant surface seal
7	High	Historical VOC detect; draws water from deep aquifer zone with a confining layer; significant surface seal
8	Low	Draws water from alluvium; significant surface seal
9	Low	Draws water from deep aquifer zone with a confining layer; significant surface seal

Exhibit 2-1
Total Annual Production by Well (1997 - 2002)



Section 3
Hydrogeologic Characterization

The City of Sunnyside is in the Lower Yakima River Valley directly east of the confluence of Status Creek and the Yakima River. The City is located in the Columbia Plateau region between the major geologic features known as the Rattlesnake Mountains to the north and Horse Heaven Hills to the south. Land surface elevations range from 720 feet near the center of the City to 1020 feet on the heights located on the west side of town. The climate is arid to semi-arid. The average annual precipitation for Sunnyside is 6 to 7 inches, with approximately 40 percent of the rainfall occurring in the winter months. Over the past 50 years, the majority of the area surrounding the City has been converted from rangeland and dryland farming to irrigated agriculture. A minority of the study area is subjected to dryland farming and industrial, residential, and commercial uses. Land use within the City is discussed in Section 5.

3.1 Regional Hydrogeologic Framework

Descriptions of basalt formation elevations and thicknesses provided in this section are based primarily on research performed by Drost and Whiteman (1986) and Drost et al. (1990). The Columbia Plateau is underlain by a series of basalt flows and sedimentary interbeds commonly referred to as the Columbia River Basalt Group. These Miocene-age flows erupted between about 17 and 6 million years ago (Whiteman et al. 1994). The flows have formed a generally horizontal, layered sequence, which has an estimated maximum thickness of 14,000 feet at the plateau's low point near Pasco, Washington. In order of decreasing age, the upper three major formations of the Columbia River Basalt Group, which are of relevance to this study, include the Grande Ronde, Wanapum, and Saddle Mountains Basalts (Exhibits 3-1 and 3-2). These three formations form the Yakima Basalt Subgroup. The Vantage sedimentary interbed is typically found between the Wanapum and the Grande Ronde Basalts, and the Mabton sedimentary interbed generally separates the Saddle Mountains and the Wanapum Basalts. Additional sedimentary interbeds are common within each of the three basalt units. Holocene- to Miocene-age sedimentary overburden overlies the Yakima Subgroup over much of the study area, particularly in lowlands of the Columbia Plateau.

The overburden of the Columbia Plateau includes consolidated to unconsolidated deposits of fluvial, lacustrine, and volcanic origin, for the purposes of this report the overburden will be referred to as alluvium. These sediments and sedimentary rocks are lithologically diverse, ranging from clay to gravel and shale to conglomerate. The alluvium overburden transmits water readily in many of these areas and constitutes a water table aquifer where it is saturated. Estimates of lateral hydraulic conductivities of the alluvium overburden aquifer range from 0.02 to 150,000 feet/day, with a median value of about 240 feet/day (Whiteman et al. 1994).

The movement of groundwater through the basalt flows is governed by numerous factors dependent upon the nature of individual flows. Flow characteristics are influenced by the topography over which the basalts flowed; the erosional processes that occurred before, during,

and after extrusion; the deposition of sedimentary interbeds; tectonic activity; and diagenetic processes. A basalt flow typically forms a highly heterogeneous aquifer unit that transmits water most readily through the broken vesicular and scoriaceous flow tops (interflow zones) that commonly constitute 5 to 10 percent of the thickness of an intact individual flow. The interflow zones are separated by the less transmissive and more massive entablature and colonnade. The colonnade generally makes up the bottom 20 to 25 percent of the flow unit. It has the lowest hydraulic conductivity of the three portions of a flow and is typically made up of 3- to 8-sided columns bounded by cooling joints. The colonnade fractures are more or less vertical, so hydraulic conductivity is greatest in this direction, which allows for some movement of water between interflow zones. The entablature, which generally makes up 70 percent of a flow thickness, is composed of smaller columns arranged in fan-shaped patterns, which arise from flow of the basalt. Jagged joints are common, and the upper portion of the entablature is often vesicular. Lateral water movement in the entablature and colonnade is probably negligible in comparison to the volume of water that moves laterally through the interflow zones. This is because the movement of water in the entablature and colonnade is controlled by cooling fractures and joint systems, whereas movement of water in the interflow zones is controlled by primary features such as flow breccia, clinkers, and vesicles. Where there are no intervening sediments, the interflow zone consists of both the flow top and the vesicular lower portion of the succeeding flow unit (Whiteman et al. 1994). Exhibit 3-1 shows the generalized stratigraphy described above.

The majority of groundwater flow in the basalt units is derived from interflow zones. Estimates of lateral hydraulic conductivities for the Saddle Mountains, Wanapum, and Grande Ronde Basalts range from 0.005 to 6,100 feet/day and have a median of about 5 feet/day. Median lateral hydraulic conductivity values for these basalts are estimated to be 2.4, 5.2, and 4.9 feet/day, respectively, with the lower value for the Saddle Mountains being attributed to the presence of thicker and more numerous sedimentary interbeds in this unit (Whiteman et al. 1994).

The groundwater surface in the Saddle Mountains Basalt appears to roughly parallel the land surface where there is little or no alluvium overburden. The lateral groundwater flow in this unit is generally toward major surface-drainage features, but there are numerous local variations where smaller streams abstract base flow from the basalt. Groundwater flow in the Wanapum and Grande Ronde Basalts is predominantly controlled by major rivers, streams, and coulees. The dominant pattern of groundwater movement is downward from the anticlinal axes toward the streams and rivers lying within the intervening synclines (Bauer et al. 1985; Lane and Whiteman 1989). Exhibit 3-2 shows the general ground water flow patterns in the basalt formations. In the case of flows in the Sunnyside region, the Yakima River is the primary drainage feature and the direction toward which ground water generally flows. This is discussed further in Section 3.3.

Vertical water movement occurring in the central and lower portions of a basalt flow unit is generally slow because of the low hydraulic conductivity of the entablature and colonnade zones. Additionally, some of the sedimentary interbeds, which vary in lithology from shale and clay to sand and gravel, are of low transmissivity, further impeding the vertical movement of water. In general, the interbeds act as semiconfining to locally confining layers that transmit small

amounts of water laterally. Large (more than 100 feet in some areas) head differences between aquifers in the Columbia Plateau reflect the large head losses that result from downward flow of water through thick zones of low hydraulic conductivity. Net flow is downward over most of the Columbia Plateau and upward in the vicinity of topographic lows, such as major river valleys. In most areas, water table conditions exist in the uppermost basalt flows, while the deeper aquifers are generally confined. Where a confined aquifer exists, the static (non-pumping) groundwater level (piezometric surface) can be many feet above the aquifer.

The alluvium overburden in the study area is generally in direct hydraulic connection with the immediately underlying basalts. Where overburden materials are thick enough, a water table aquifer may be present, commonly providing sufficient groundwater for domestic and stock use, and in some places, for irrigation.

3.2 Local Hydrogeologic Framework

Exhibit 3-3 shows the surficial geology and major surface features in the vicinity of Sunnyside. Using the City's well logs for its water supply wells and additional regional wells gathered from the Department of Ecology's database, a geologic cross-section was developed along the transect shown in Exhibit 3-3. A north-south transect was selected because the direction of regional ground water flow in the Sunnyside area is in a southerly direction toward the Yakima River. The geologic cross-section is depicted in as shown in Exhibits 3-4a and 3-4b at different scales.

As Exhibit 3-4 shows, the City of Sunnyside lies upon alluvium, which is underlain by flows of the Saddle Mountains Basalt. The alluvium in the Yakima River valley varies from occasionally cemented sand, gravel, and boulders in the upper deposits to clay. The thickness of these unconsolidated deposits at the city wells is on the order of 400 feet beneath most of the City. Based on Well No. 4A log, the Saddle Mountain Basalt layer is also on the order of 400 feet thick. The Wanapum Basalt starts at depths of approximately 1,000 feet below ground surface. Based on well logs further north and south of the City's wells, the thicknesses of the alluvium and basalt layers are generally uniform in the immediate vicinity of the City. The regional geology, however, indicates that the alluvium thins much further north where the Saddle Mountain Basalt eventually rises to the ground surface along much of the Rattlesnake Hills. The thickness and depth of the Wanapum and Grand Ronde basalt immediately below the City are not known based on the depths of wells in the area.

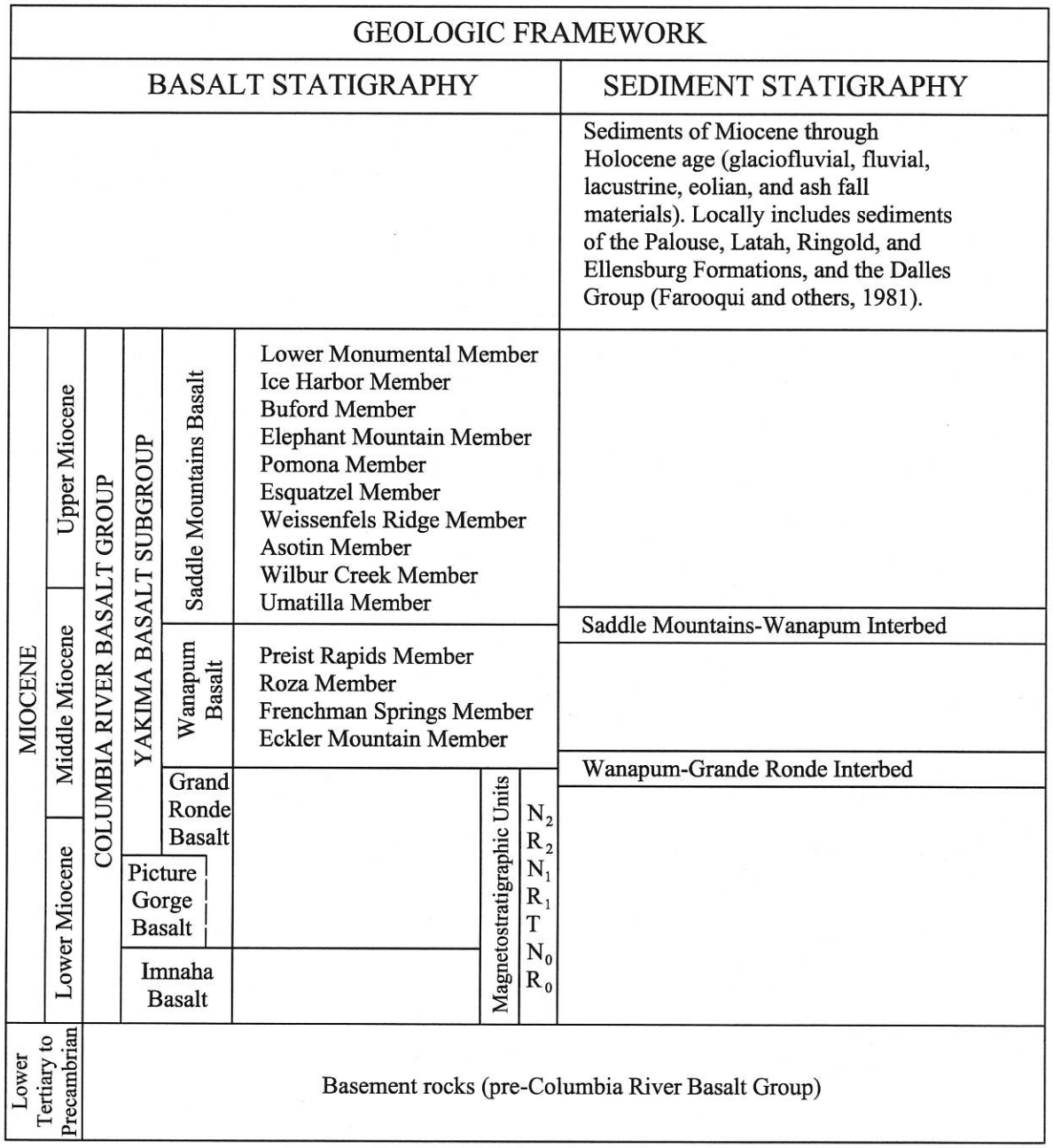
The aquifers supplying the shallower city wells (No. 5 and 8) consist of coarse-grained zones in the alluvium and fractured, porous zones within the Saddle Mountain Basalts. The deeper wells (No. 6, 7, and 8) yield water from the Saddle Mountain Basalts. Well No. 4A is the only well to tap the Wanapum Basalt. None of the wells are in the Grande Ronde Basalt.

3.3 Ground Water Flow

Natural recharge to the local ground water system occurs in the Rattlesnake Hills to the north, and to some extent in the Snipes Mountain to the west. Precipitation, although sparse, infiltrates and travels downgradient into the Sunnyside area. Recharge to the local ground water system may also be occurring from the deeper basaltic aquifers. Furthermore, artificially induced

infiltration from irrigation canals and laterals is also a possible source of local ground water system recharge. For example, the Roza and Sunnyside canals are located to the north toward the Rattlesnake Hills, while the Snipes Mountain lateral flows through the southwest corner of town and is within a quarter-mile of town. The Yakima River is the primary discharge area for the ground water flow system.

Groundwater level data at the City's wells are not available because the wells operate regularly. Therefore, groundwater elevations in the vicinity of the City are based on information presented by Lane and Whiteman (1989), Whiteman et al. (1994), and from a regional ground water study by Vaccaro (1999). Groundwater level data was also taken from data collected as part of the Yakima River basin groundwater study being conducted by USGS (http://wa.water.usgs.gov/yakimagw/Data.html). Data from obtained from the USGS hydrogeologic study in the Yakima Valley does confirm that lateral flow appears to be in a north-to-south general direction from the Rattlesnake Hills toward the Yakima River. Based on regional flow patterns and water levels during installation of the City's wells, there appears to be an upward vertical gradient in the basalt units. The flow directions are shown in Exhibits 3-5a and 3-5b for different depth intervals. The two depth intervals represent flow direction in the alluvium overburden (less than 400 feet below ground surface) and generally in the basalt aquifer (greater than 400 feet below ground surface). The water level data shown in Exhibit 3-5 was based on the USGS study for the Yakima Valley.



NOTE

Figure taken from "The Hydrogeologic Framework and Geochemistry of the Columbia Plateau Aquifer System," by K.J. Whiteman et al., 1994.

EXHIBIT 3-1

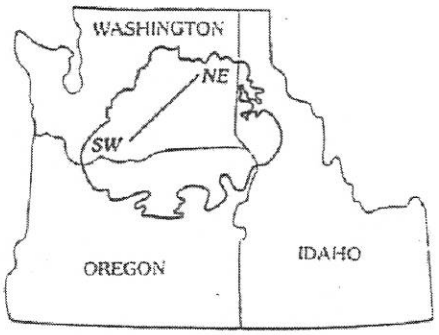
City of Sunnyside

Wellhead Protection Plan

General Stratigraphy

October 2003

Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities



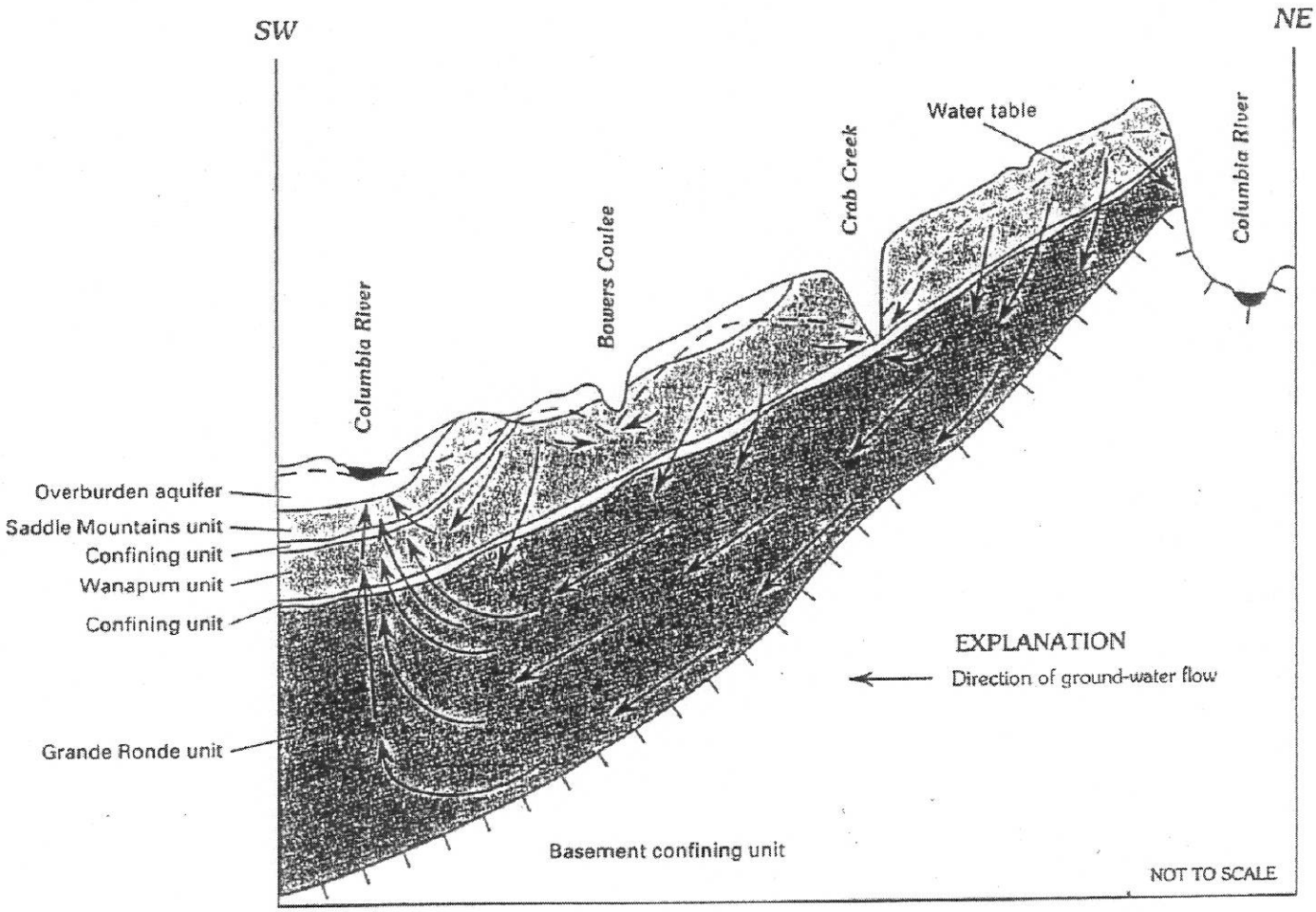


EXHIBIT 3-2

City of Sunnyside

Wellhead Protection Plan

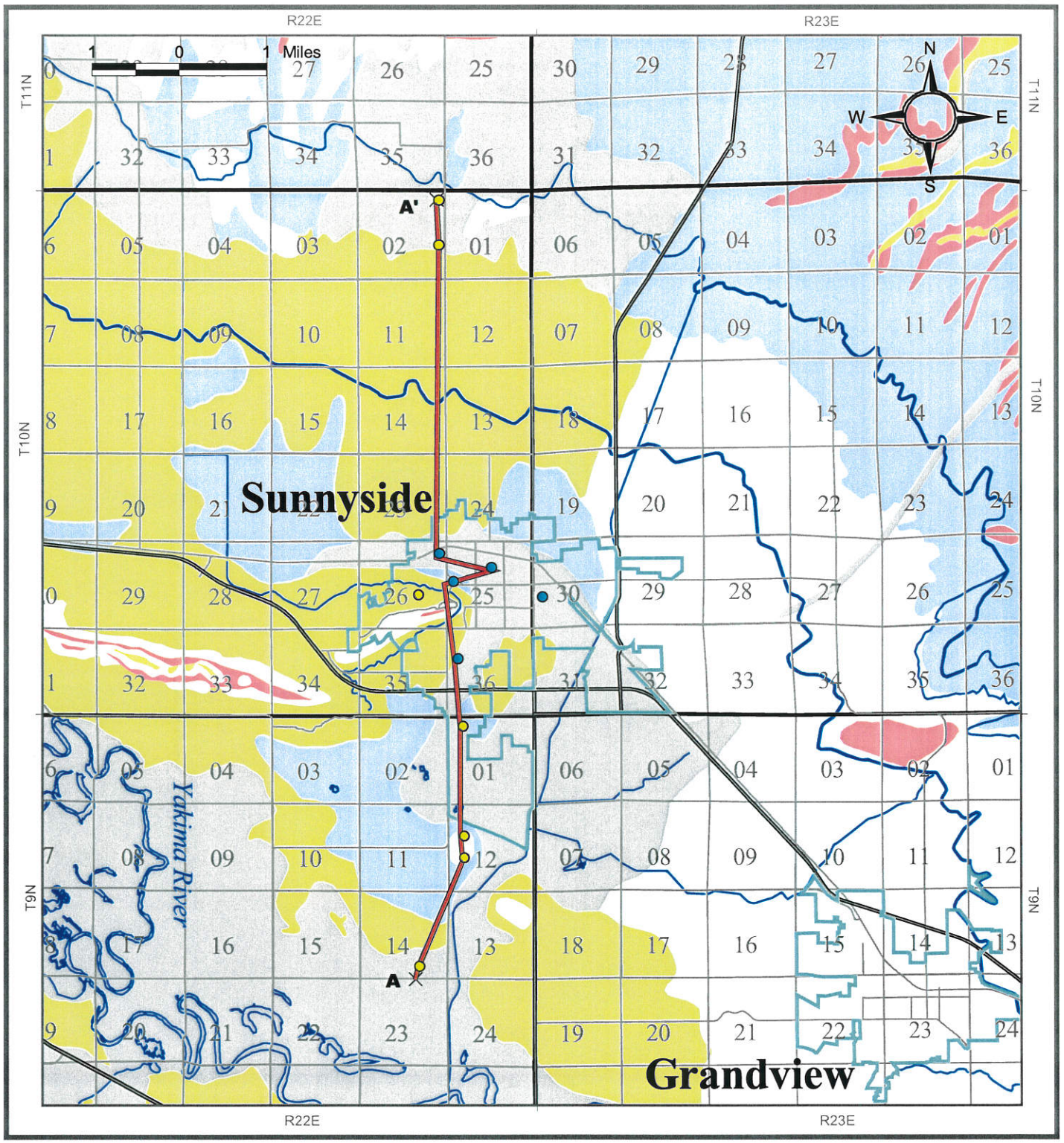
General Ground Water Flow Patterns

NOTE

Figure taken from "The Hydrogeologic Framework and Geochemistry of the Columbia Plateau Aquifer System," by K.J. Whiteman et al., 1994.

October 2003

Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities



LEGEND

- Cross Section Wells
- City of Sunnyside Wells
- N-S Transect
- N-S Transect Line
- Township and Range
- Section Boundaries
- State Roads
- Local Roads
- Rivers, Streams, Canals
- City Limits

Surficial Geology

- Unnamed Unit (Overburden)
- Elephant Mountain Member, Saddle Mountains Basalt
- Ellensburg Formation
- Grande Ronde Basalt, N2 (CRB)
- Missoula, glacial Lake, deposits of
- Palouse Formation
- Pomona Member, Saddle Mountains Basalt
- Saddle Mountains Basalt, Columbia River Basalt Group
- Touchet Beds, glacial Lake Missoula

EXHIBIT 3-3
City of Sunnyside
Surficial Geology

October 2003

ees
Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities

M:\ArcView\Sunnyside_WHPP\Project

10/2/2003 8 AM

<EES_PDX>: PLOT DATE: 10/03/03 TIME: 09:35 <EES_PDX>M:\CAD\Sunnyside, City of\1-03-151 Water System Plan Update\ExhibitA1.dwg

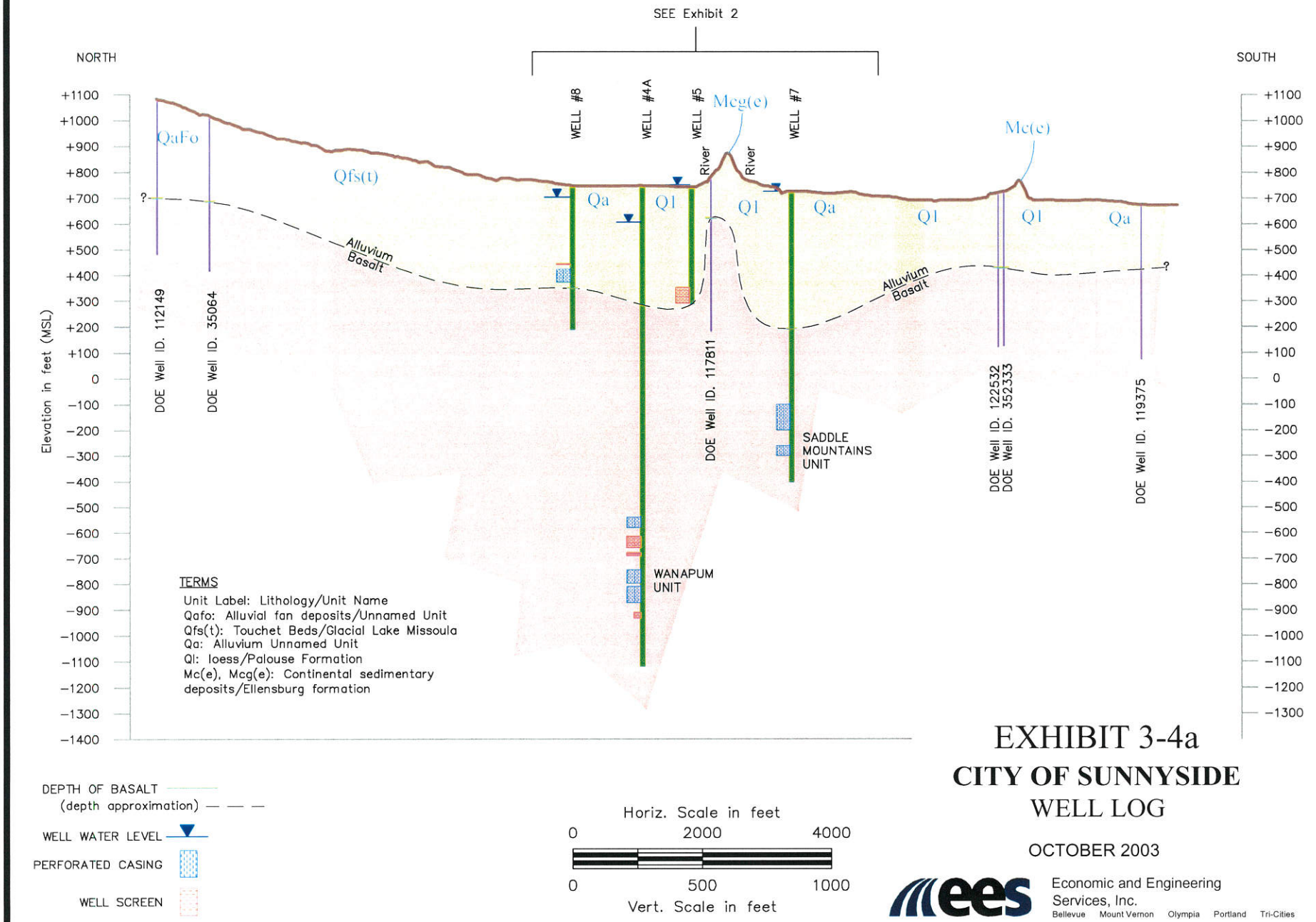


EXHIBIT 3-4a

CITY OF SUNNYSIDE

WELL LOG

OCTOBER 2003

Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities

<EES_PDX>: PLOT DATE: 10/03/03 TIME: 09:40 <EES_PDX>M:\CAD\Sunnyside, City of\1-03-151 Water System Plan Update\ExhibitA1.dwg

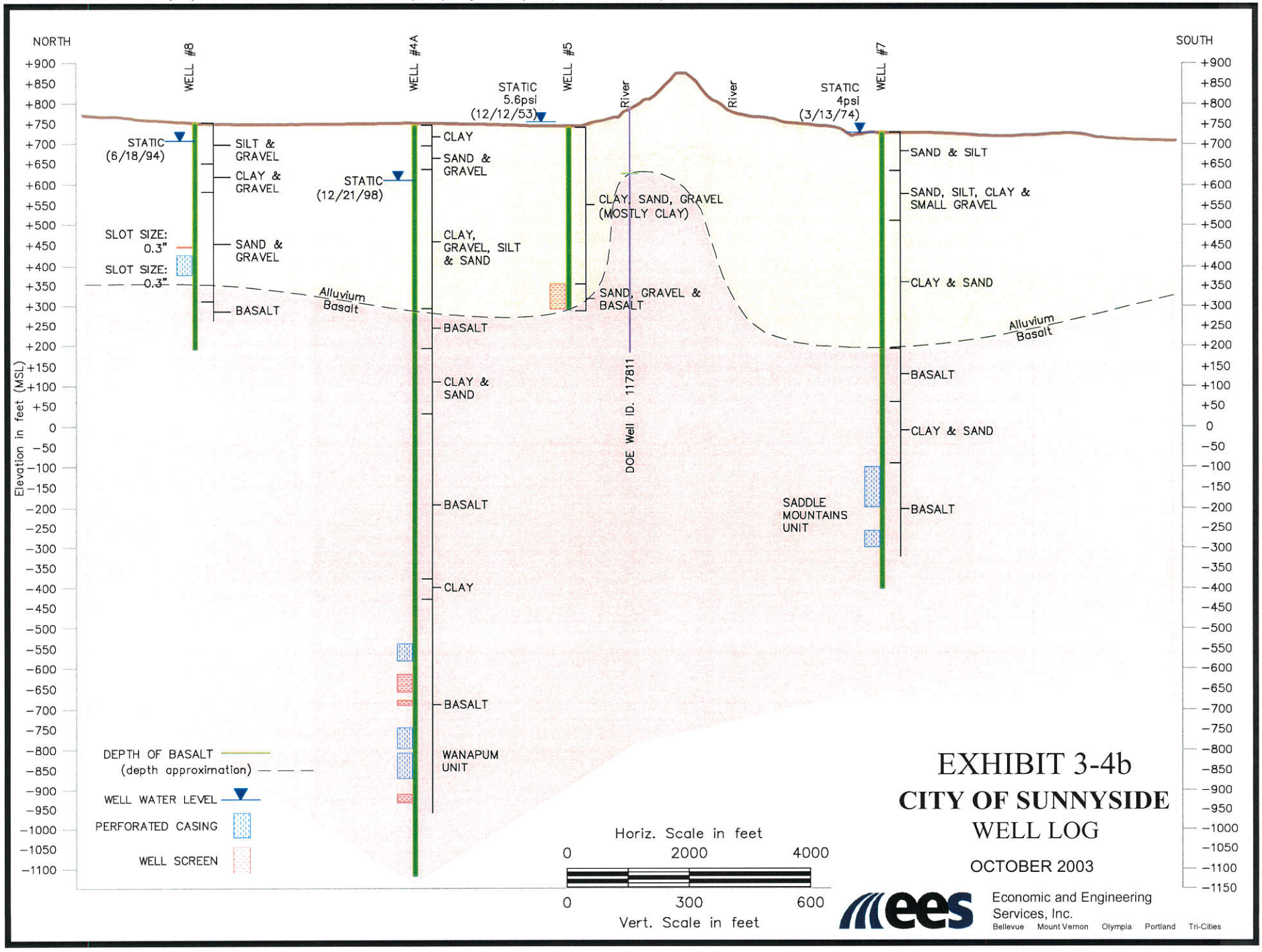


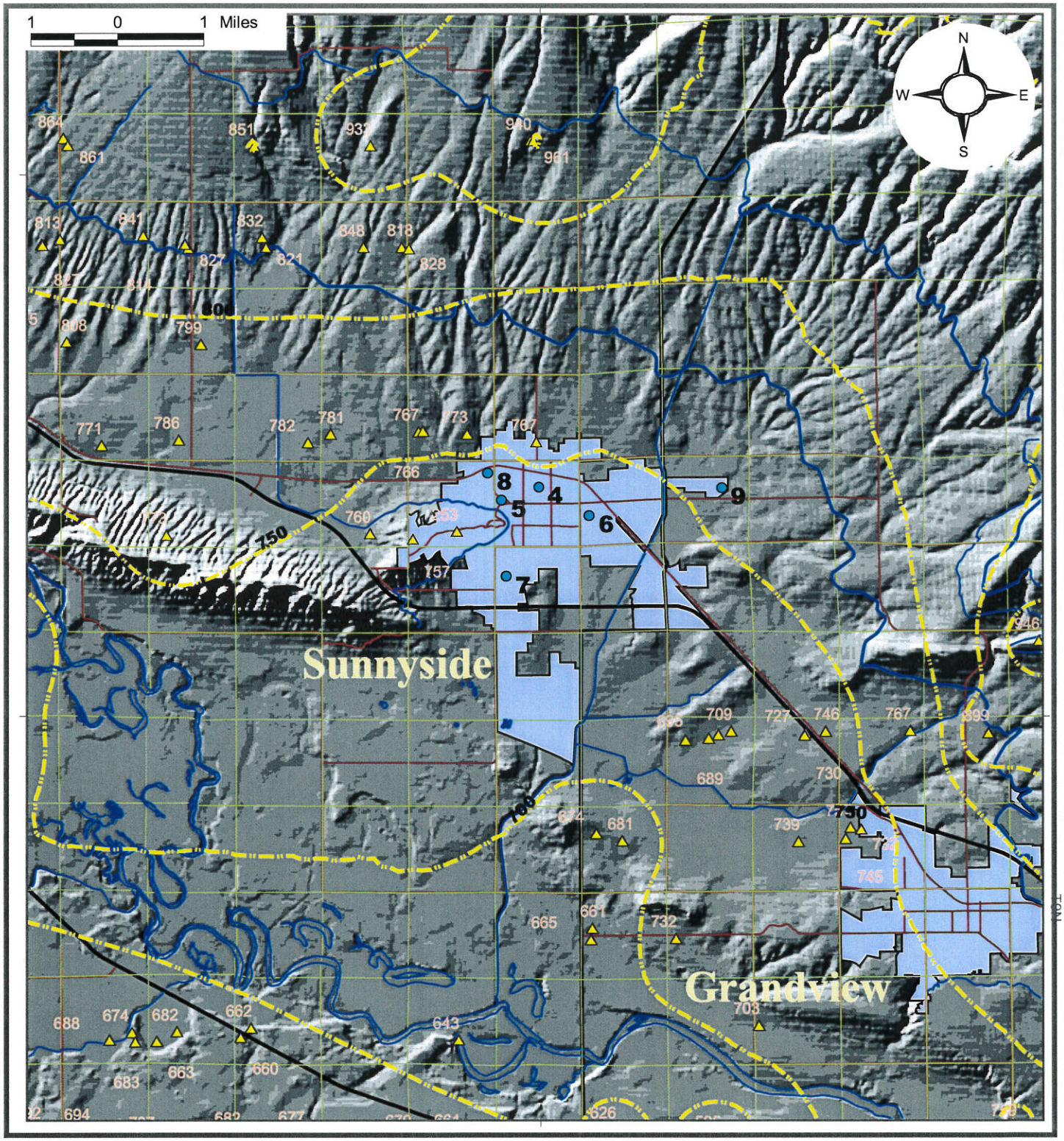
EXHIBIT 3-4b

CITY OF SUNNYSIDE

WELL LOG

OCTOBER 2003

ees Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities



Note: Water levels are shown in feet.

Overburdon - Hydraulic Gradient

- Water Level Contour (MSL)
- Yakima Study Wells Depth < 400ft
- Rivers
- City Wells
- Sections
- Major Roads
- Local Roads
- City Boundary

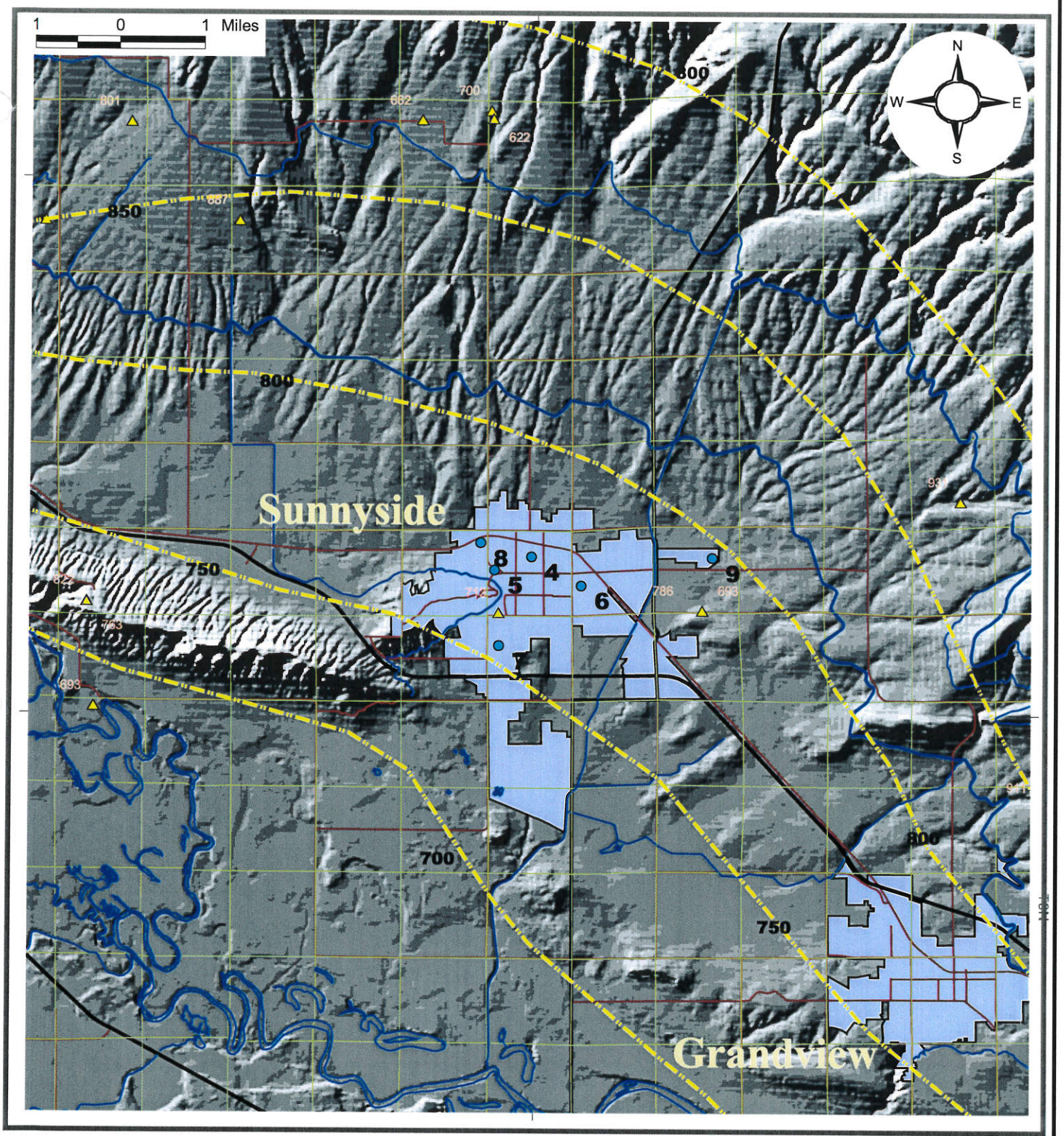
EXHIBIT 3-5a
City of Sunnyside
Overburden

October 2003

ees
Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities

M:\ArcView\Sunnyside_WHPP\Project

10/2/2003 8 AM



Note: Water levels are shown in feet.

Basalt Units - Hydraulic Gradient

- Water Level Contour (MSL)
- Yakima Study Wells Depth < 400ft
- Rivers
- City Wells
- Sections
- Major Roads
- Local Roads
- City Boundary

EXHIBIT 3-5b
Groundwater - Hydraulic Gradient

October 2003

Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities

M:\ArcView\Sunnyside_WHPP\Project

10/2/2003 9 AM

Section 4
Delineation of Wellhead Protection Areas

4.1 Introduction

A key element of the wellhead protection program is the definition (or delineation) of the area requiring management. A wellhead protection area (WHPA) is defined as the surface and subsurface area surrounding a well, wellfield or spring through which contaminants are likely to pass and eventually be drawn into the supply system. As a well is pumped, water is being captured from the surrounding aquifer(s) in all directions. If contamination occurs within the "zone of contribution" or "capture zone" for a well, it is then only a matter of time before the water being delivered to that well also becomes contaminated.

In establishing wellhead protection area boundaries, criteria must be selected before delineation can occur. In Washington, wellhead protection areas are defined by ground water time of travel (TOT). For example, a boundary defined by the one-year TOT establishes the theoretical area from which a well could draw water within one year. The size and shape of the resulting capture zones are a function of the physical properties of the aquifer, the rate of pumping withdrawal, and the rate of water (e.g. recharge) entering the system.

It should be noted that these aquifer travel time zones do not consider vertical movement of a water particle or contaminant from the land surface down to the aquifer. The rate of vertical movement or infiltration rate for an aquifer can be highly variable. Within any given aquifer setting, the infiltration rate will depend on topography, soils, geology, and the nature of land surface activities (relative percent impervious surfaces vs. open space). It may vary significantly over a region and even within an individual wellhead protection zone. Because it may be difficult to estimate and predict infiltration rates for all settings the wellhead protection area delineation methods recommended for the State program do not include vertical movement as a part of the base models. This creates a conservative (protective) estimate of travel time. Where infiltration characteristics are known, wellhead protection area zone management plans can and should consider the implication of vertical movement to the aquifer.

A typical wellhead protection area in Washington will consist of five zones:

- The sanitary control area;
- Three primary zones based on the 1-, 5-, and 10-year TOT; and
- A buffer zone as required - buffer zones were not included in the delineation for the City of Sunnyside wells, because there are no major contaminant sources of concern upgradient of the City

Brief descriptions for each zone are outlined below. In reviewing these descriptions, it is important to note that there is a level of relative risk connoted for each zone. In simple terms,

the closer you are to a well the greater potential threat for contamination. This fact is owed to the lower travel time and, hence, the increased likelihood that any contaminant released into the supplying aquifer system would in fact reach the well in a relatively shorter period of time.

4.1.1 Sanitary Control Area

This first component of a WHPA as defined by WAC 246-290-135, is the immediate protective area surrounding a wellhead under established tight control for the prevention of any direct well contamination. As part of its 2006 Comprehensive Plan, the City of Sunnyside has adopted a 100 feet radius sanitary control area around each well. Sufficient management is established to reduce the possibility of surface flows from entering the well and traveling down the casing. A well house and fence is required to be in place around the wellhead to prevent any direct introduction of contaminants.

4.1.2 Zone 1: One-year Time-of-Travel

Zone 1 is established to prevent viral, microbial, and direct chemical contamination. The zone is based on a one-year time of horizontal travel and includes the surface area above the aquifer contributing to the well within that time period.

Biological contaminants (e.g. septic fields) should be strictly managed within this zone. A one-year time period is considered necessary to allow for the expiration of microbial and viral contaminants. Existing research indicates that less than the one ear travel time may not provide adequate protection.

The one-year time of travel also provides a boundary for strict management of potential contaminant sources. Chemicals with the potential for contamination should not be stored or used within this zone, or at least have sufficient precautions to protect the groundwater. A spill within the boundary would not allow much time for a community and purveyors to respond. An aggressive response, including contaminant identification and implementation of remedial actions will take six months. The typical response time is more on the order of one to two years. The short response time requires thorough contaminant inventory and risk management planning within the zone boundary.

4.1.3 Zone 2: Five-year Time-of-Travel

Zone 2 includes the area between the one-year and five-year time of horizontal travel. It should be actively managed to control potential contaminant sources. As with Zone 1, all potential contaminants should be identified. Management should focus on risk reduction and pollution prevention. The five-year TOT boundary of Zone 2 allows for more response time than is allotted in Zone 1. Yet, a contamination event could create a serious problem with both current and future water uses. Any microbial contamination between the Zone 1 and Zone 2 boundaries should not pose a threat to the drinking water.

4.1.4 Zone 3: Ten-year Time-of-Travel

Zone 3 consists of the area between the five-year and ten-year TOT boundary and corresponds to the outer edge of the WHPA. Within this zone, an inventory of potential contaminants should be maintained. Operations and facilities considered posing a high risk to the underlying aquifers should instigate steps toward reduction of that risk and potential contaminant loading.

The establishment of Zone 3 is useful as an educational and awareness tool for the community. It encourages decision-makers and planners to consider long-term activity effects on a public water supply source. Location and planning of high and medium-risk potential contaminant sources can be limited to outside of the WHPA. It also serves to educate industry and the general public about the potential long-term effects of activities upgradient of a well or wellfield.

4.2 Delineation Methodology

Groundwater contribution areas representing 1-year, 5-year, and 10-year groundwater TOT were calculated for each well using methods specified in the DOH guidance. The calculated fixed radius (CFR) approach described in the Washington State Wellhead Protection Program document (DOH, 1995) was used to estimate the wellhead protection areas for the susceptibility assessment survey forms for DOH. This method is considered adequate for wells rated as low susceptibility to contamination. However, for wells rated moderate or high susceptibility to contamination, DOH requires a more refined method to delineate the wellhead protection areas. The City has decided to conduct the semi-analytical model on all the wells. As a result, the U.S. Environmental Protection Agency's WHPA Delineation Code (Blandford and Huyakorn, 1992) is used in this Plan to delineate the wellhead protection areas for the City wells. The WHPA method is described below. The parameters input to the WHPA model and capture zone output are presented in Appendix E.

4.2.1 Semi-Analytical WHPA Delineation Code

Semi-analytical solutions based on fundamental groundwater flow equations are considered to provide more accurate delineations of the area of groundwater contribution to a well than does the CFR method (used in the susceptibility surveys – refer to Appendix A). Other, more accurate methods can also be performed, provided appropriate hydrogeologic information is available. Semi-analytical solutions are preferred over CFR solutions because they incorporate the ambient groundwater gradient, influences from nearby wells, and the effects of hydrogeologic boundaries. A semi-analytical approach to delineation of a WHPA is typically selected when a well appears to be of relatively moderate to high susceptibility to contamination and when the zone of groundwater contribution appears to be influenced by hydrogeologic boundaries. Information required for a semi-analytical solution includes well construction details; aquifer lithology, saturated thickness, porosity, and hydraulic conductivity; average pumping volumes; locations of hydrogeologic boundaries and nearby high-capacity wells; and groundwater gradient. This information was obtained from well logs, records of annual pumping volumes,

geologic and topographic maps, hydrogeologic studies, logs of nearby wells, and the results of pumping tests conducted at wells in the vicinity.

The WHPA model has two primary modeling components: (1) MWCAP and (2) GPTRAC. The MWCAP module (Multiple Well Capture Zone Module) allows for consideration of no more than one boundary. Capture zones for multiple wells may be delineated, but each well is assumed to operate independently, and the effects of well interference (increased drawdown due to overlapping cones of depression) are neglected. The GPTRAC Module (General Particle Tracking Module) allows a stream or barrier boundary to be specified along any edge of the study area, and two parallel boundaries may be simulated. GPTRAC also accounts for the effects of well interference through superposition of solutions derived for individual wells.

Each of the wells were run through MWCAP as part of a general sensitivity analysis to test the modeling parameters selected for each well. A range of values for each of the major input parameters were run in MWCAP to evaluate the impacts of each parameter on the overall "shape" and "extent" the capture zones. GPTRAC was then used to conduct a sensitivity analysis of the effects of boundary conditions and interference of multiple wells on the time-of-travel capture zones. Both models make the following assumptions: (1) multiple wells may be considered, and each well penetrates the aquifer fully; (2) aquifers are essentially homogeneous, with steady state, horizontal flow conditions; and (3) any positive or negative boundaries present are linear and fully penetrating. A listing of the different modeling runs is included in Appendix D.

The runs used to delineate the final capture zones are as follows:

- Based on proximity of the wells and the hydrogeologic unit in which the wells are screened, it was determined that Well Nos. 5 and 8 should be modeled together (simultaneously)
- Wells No. 6, 7, and is modeled together because each draws water from the same units.
- Well No. 4A was modeled separately because its screened interval is in a different aquifer unit and at significantly different depth intervals.

Potential hydrogeologic boundaries that may affect ground water flow and the capture zones of each municipal well were assessed based on information obtained from well logs, geologic studies, and topographic maps as presented in Section 3. Generally speaking, the City of Sunnyside lies above alluvium, which is in turn underlain by the basalt formations. Each of the aquifer units of concern is generally horizontal in nature within the zone of influence of the City's production wells. Therefore, no significant geologic boundaries exist that affect the capture zones of the wells, and it was assumed that the aquifers of concern have "infinite" areal extent. The sensitivity analysis conducted using the conservatively high discharge rates from the wells supports this assumption in that the extent of the capture zone did not extend into the Rattlesnake Hills. In this area the basalt formation comes up to ground surface and can act as geologic barriers that affect flow patterns. Furthermore, based on the distance of the wells and their production capacities, the Yakima River was not shown to impact the capture zones. Other potential boundaries include the numerous canals surrounding the City. These canals are considered too shallow to directly affect flow in the wells that are several hundred feet deep.

4.2.2 Input Requirements for WHPA Delineations

The following discussions provide background on the input used for the model. A summary of the data parameters used for the model are summarized in Table 4-1.

Porosity

Relatively little information is available concerning the porosity of interflow zones within the Columbia River basalts. For the purposes of this study, the porosity of productive zones penetrated by wells within basalt flows was estimated to be 10 percent. This estimate is based on the value estimated for fractured basalt used for a conceptual model of the Columbia River basalts (Rockwell International 1979). Todd (1980) presents a representative porosity value of 17 percent for basalt. The Department of Energy has used porosity values ranging between 0.1 and 20 percent in numerical modeling for calculating travel times (U.S. Nuclear Regulatory Commission 1983). Rock mechanics data for the Columbia River Basalt Group within a small area of the Hanford Nuclear Reservation indicated that a representative flow-top and vesicular zone effective porosity was 14.5 percent, while a representative entablature and colonnade effective porosity was 1.8 percent (Sublette 1986). Freeze & Cherry (1979) report porosity values of 0.1 to 1 percent for dense basalt, 5 percent for vesicular basalt, 10 percent for fractured, weathered, or brecciated basalt, and 20 percent for river-deposited interbeds. Analysis of the well logs indicated that the majority of groundwater flow in the basalts is derived from interflow zones. A porosity of 10 percent was selected as being representative of the porosity of the interflow zones.

Aquifer Transmissivity

Where possible, it is preferred to use aquifer transmissivities calculated by others from the results of pumping tests as input to a semi-analytical model. However, this information was typically unavailable, so estimates of aquifer transmissivity for the Sunnyside area was based on data used in other wellhead protection plans in the area including those for Cities of West Richland and Richland (EES 2002; 2001). The transmissivity values were also based on values documented in a report by Vacarro (1999) for alluvium/overburden and the different basalt layers in the region. Finally, transmissivity estimates were compared to an empirical equation presented by Driscoll (1986).

Aquifer Thickness

An estimate was made of the combined thickness of the productive aquifer zones for each well exposed to casing perforations or an uncased borehole. Productive basalt zones were typically identified from the logs, where possible, as being zones noted to be water bearing and/or fractured (probable interflow zones). When granular sedimentary interbeds (typically a few feet thick) within productive basalt zones were included in the aquifer thickness estimate, they were considered to have a similar porosity to the surrounding basalt. A few well logs provided no

indication as to which zones were productive. In these cases, the lengths of the saturated perforated intervals and saturated open hole intervals were summed to provide an estimate of the combined length of the contributing zones for the well. If a well was found to be cased over its entire length, having no exposed aquifer zones except at the open bottom of the casing, the productive zone was estimated to be 10 feet in accordance with DOH guidance.

Ground Water Hydraulic Gradient

The magnitudes of the hydraulic gradient of groundwater within the shallow, unconsolidated aquifer materials were estimated from water levels recorded in wells in the region. This information was taken from data collected as part of the Yakima River basin groundwater study being conducted by USGS (http://wa.water.usgs.gov/yakimagw/Data.html). As to be expected in basalt formations, the water levels had some local variability. Therefore, professional judgment, along with information from the regional ground water study (Vaccaro 1999), were used to estimate the regional potentiometric contours and hydraulic gradients. .

Well Discharge Rates

The semi-analytical solutions for wellhead protection zones assumed that the discharge rates were equal to the pumping capacity of the wells (Table 4-1). With uncertainties associated with the other modeling parameters, use of conservative values for the discharge rates produces conservative capture zones. This provides an "upper-bound" estimate of the discharge rates from the wells over the long-term use of the wells. The discharge rates used in the model (pumping capacities of the wells) were compared with historic production from each of the operational wells. Well No. 4a has an installed capacity of 950 gpm, however, the well experiences limited use due to issues with hydrogen sulfide. Historically the well has not been used by the City for water supply since its construction. However, for the purposes of defining a protection zone for the well, it was included in this study. Well No. 5 has an installed capacity of 850 gpm and since 1997 the average discharge from this well has decreased from 575 gpm to very limited use in 2002. Well No. 6 has an installed capacity of 850 gpm. The City has limited discharge rates from this well from a rate of 380 gpm in 1998 to an average withdrawal of 40 gpm in 2002. Well No. 7 has historically provided approximately 20% to 30% of system demands at an average withdrawal rate of 400 gpm. Well No. 8 has historically provided 30% to 35% of system demands at an average withdrawal rate of 580 gpm. Well No. 9, the City's largest capacity well, has historically provided close to 40% of system demands at an average rate of 670 gpm. Table 4-2 provides a summary of average discharge rates from each well from 1997 to 2002.

Table 4-1
Wellhead Protection Data Used for WHPA Model

Well Number	Aquifer Unit	Well Pumping Capacity(1) (gpm)	Average 2002 Discharge Rate (gpm)	Percent of 2002 Demand (%)	Porosity (unitless)	Transmissivity (ft2/sec)	Approximated Aquifer Thickness (feet)	Estimated Gradient in Main Aquifer (foot/foot)
4a	Wanapum	950	0	0%	0.10	1,838	400	0.0035 to SW
5	Alluvium/ Overburden	850	0.28	0%	0.22	13,125	150	0.003 to SW
6	Saddle Mountain	850	36	2%	0.10	3,053	120	0.0035 to SW
7	Saddle Mountain	1,150	647	33%	0.10	3,053	120	0.0035 to SW
8	Alluvium/ Overburden	800	614	32%	0.22	6,557	150	0.003 to SW
9	Saddle Mountain	1,500	645	33%	0.10	3,053	400	0.0035 to SW

(1) The well pumping capacities based on the values submitted to DOH in the susceptibility assessment forms were used as the discharge rate for the purposes of the WHPA model. Note, this is a conservative estimates based on historical use of the wells.

Table 4-2
Well Pump Capacities and Historical Well Discharge Rates

	Well #4	Well #5	Well #6	Well #7	Well #8	Well #9
Well Capacity (gpm)	950	850	850	1,150	800	1,500
Year						
1997	N/A	575	295	296	678	-
1998	N/A	302	384	362	629	191
1999	N/A	252	115	4	592	1,015
2000	N/A	170	61	2	595	1,034
2001	N/A	-	9	515	625	706
2002	N/A	-	36	647	614	645

4.2.4 Limitations of Time of Travel Delineation Methodologies

It should be noted that the time of travel boundaries do not estimate the migration distance or travel time for *contaminants* released by a given source; rather they are reflective of the water movement alone. This concept is important in that most common contaminants generally travel at speeds less than the groundwater. This fact is owed to a process known as "sorption" where there is a tendency for the contamination to adhere more readily to the solid matrix that forms the aquifer (i.e. soil or rocks) rather than remain dissolved within the ground water itself. This process tends to slow the contaminant migration down as it interacts between the water and solid surfaces within the aquifer. Thus, the time measure represented by a given time of travel zone is generally thought to be conservative with respect to the actual time it may take any given contaminant to be captured and discharged by a well (or spring). There are a few important exceptions, including that of nitrate. Nitrate is a common ground water contaminant found in the presence of agricultural land use or septic systems. Nitrate is readily dissolved by the ground water and travels at a speed generally equal to the movement of the water.

Moreover, there are a number of limitations that exist with regards to the model used to delineate the time of travel zones. The WHPA model is subject to a number of basic assumptions that may lead to inaccuracies in reflecting true field conditions. Some of the more important limitations include: 1) the underlying assumptions of the WHPA Model (including isotropic and homogeneous aquifer of uniform saturated thickness, two-dimensional aquifer of infinite extent, fully penetrating pumping wells, fully penetrating boundaries) have not been satisfied; 2) the aquifer input data used for the semi-analytical model may deviate from actual aquifer parameters. For instance, aquifer transmissivity values typically range over several orders of magnitude, which can introduce uncertainty in the predicted time of travel zones. Moreover, the WHPA Model does not factor in the time associated with vertical migration of contaminants.

Despite the limitations of either approach, the important element in delineating capture zones is to match the complexity and uncertainty of field conditions with potential risks to the aquifer. Hence, more sophisticated modeling may be prudent as the complexity and risk rise. In any case, the accuracy of the derived results is not necessarily a function of the modeling tool used

rather the degree to which relevant site-specific parameters are known. The tradeoff in the level of modeling sophistication used comes in the number of site-specific parameters required. A more sophisticated model generally requires a great many more parameters. In turn, those parameters are generally not very well known. Thus, the level of modeling sophistication used must balance the complexity of field conditions and the degree to which site-specific parameters are known. Moreover, it is not necessary to simulate hydrogeologic conditions with absolute certainty in order to satisfy the WHPP delineation objective. Rather the time of travel zones are intended to be planning tools for delineating areas in which to develop ground water protection strategies.

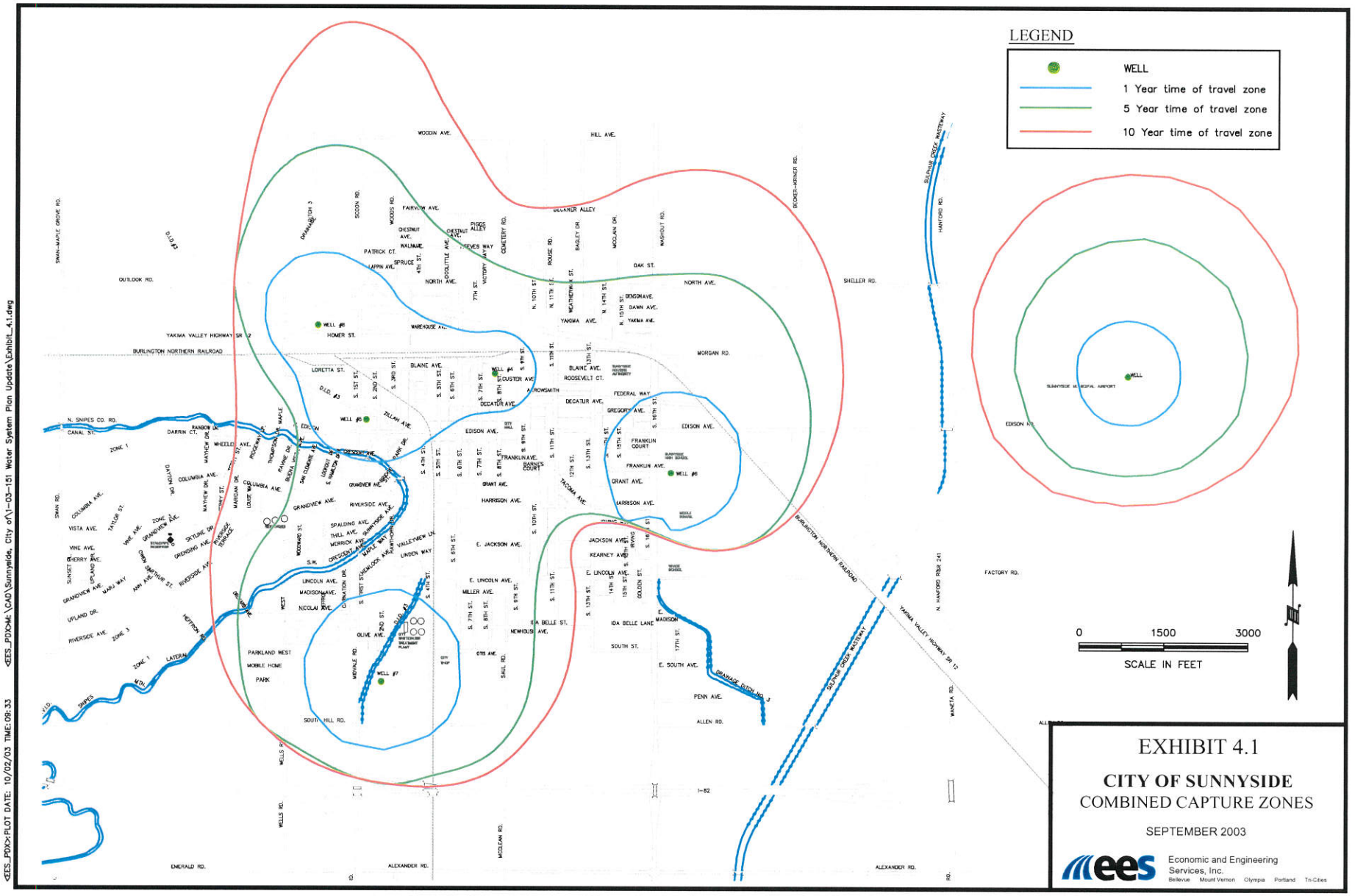
4.3 Delineation Results

The results of the model are definitions of the time-of-travel boundaries for the 1-year, 5-year, and 10-year. Exhibit 4-1 illustrates the combined (or superimposed) travel time boundaries for the wells modeled. The overall combined captures zones were derived from the model runs described in Section 4.2. As discussed in Section 4.2, wells screened in the same aquifer unit were modeled together. Therefore, Well Nos. 5 and 8 were modeled together in the overburden unit, Well Nos. 6, 7, and 9 were modeled together in the Saddle Mountains Unit, and Well No. 4A was modeled in the Wanapum. Exhibit E-1 shows the capture zones for the individual wells. Note that the capture zones for Well Nos. 5 and 8 do intersect each other within the overburden unit. The capture zones for Well Nos. 6 and 7, although both within the Saddle Mountain unit, do not intersect. This is not to say that the zone of influence of the wells does not intersect. However, within the travel times considered, the capture zones do not intersect. Well No. 9 is located far enough to the east that the capture zones do not affect the other wells near the center of the City. The capture zones for Well No. 4A are smaller than the other wells primarily because the transmissivity is assumed to be smaller in the Wanapum unit. Laterally, the capture zones for Well No. 4A intersect each of the wells within the City; however, in a vertical sense the capture zones are much deeper.

Overall, the capture zones extend northward from the wellheads, illustrating that the source of most of the water is to the north. This is expected since the regional ground water flow direction is from north to south toward the Yakima River. The model results indicate the existence of two capture areas. The first capture area is associated with Wells 4a, 5, 6, 7, and 8. For these wells, the 10-year capture area covers a majority of the City with approximately 2,255 acres. The 5-year capture area covers a total area of 1,605 acres. The 1-year capture area is divided into three separate areas. The first 1-year capture area is associated with wells 4, 5, and 8 and covers an area from 8th Street and S.R. 12 extending past where S.R. 12 crosses Drain Ditch #3. The total area of this capture zone measures approximately 250 acres. A second 1-year capture area is associated with well 5 and measures approximately 110 acres. The Sunnyside High School and Middle School make up the majority of this area. The area extends from the school out to S.R. 12 and the intersection of S. 16th Street and Federal Way. A third area is associated with well 7 and covers a total area of 142 acres. The area covers the City's wastewater treatment plant and extends past S.4th Street and Midvale Road nearing the exit/entrance ramp to Interstate 82.

The second major capture area is associated with Well 9 located near the Sunnyside Municipal Airport. This area is generally outside the major commercial and residential centers of the City.

The 10-year capture area extends around the entire airport area and covers a total of 624 acres. The 5-year capture area also extends around the airport and covers a total of 320 acres. The 1-year capture area covers 62 acres.


LEGEND
WELL
1 Year time of travel zone
5 Year time of travel zone
10 Year time of travel zone
0
1500
3000
SCALE IN FEET
EXHIBIT 4.1
CITY OF SUNNYSIDE
COMBINED CAPTURE ZONES
SEPTEMBER 2003
ees
Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities
<EES_PDX>PLOT DATE: 10/02/03 TIME: 09:33 <EES_PDX>K:\CAD\Sunnyside, City of\1-03-151 Water System Plan Update\Exhibit_4.1.dwg

Section 5
Contaminant Inventory

5.1 Introduction

The purpose of this contaminant inventory is to identify past, present and proposed activities that may present a risk of future contamination of the City of Sunnyside drinking water supply. The quantification of that risk starts with a thorough inventory of all potential contaminant sources and is followed up by a ranking of the relative threat posed by each source. The ranking of risk is a function of the type, location, and volume of potentially hazardous material being handled or stored within (or adjacent to) the area identified as serving the City's drinking water supply. These potential contaminant sources are addressed as part of the wellhead management strategies that minimize the risk of source water contamination.

The initial inventory includes all known potential sources of contamination within the City, and ranks each on their relative potential to contaminate the City's water supply. In addition, potential sources of contamination from land use practices within and beyond the City boundaries are also discussed. The contaminant inventory documented in this section is a snapshot in time and does not represent a "final" inventory. Known and potential sources of contamination change over time. As a result, DOH requires contaminant inventories to be updated every two years. More frequent review may be required in areas of the City experiencing significant growth or rapid land use changes.

5.2 Inventory Methodology

The inventory of potential contaminant sources was conducted according to the December 1993 Washington Department of Health (DOH) guidance document entitled, "Inventory of Potential Contaminant Sources within Washington's Wellhead Protection Areas." A summary of the types of potential contaminant sources presented in the above DOH document is provided in Table 5-1. These source types were considered when performing the contaminant inventory for the City of Sunnyside. The contaminant inventory was completed for area within the City limits and those areas beyond the City limits that are in the proximity of the wellhead protection area delineated in Section 4.

Table 5-1
Potential Contaminant Sources Listed by Type

Category I - Sources Designed to Discharge Substances
Subsurface percolation (e.g., septic tanks and cesspools)
Injection Wells
- Hazardous waste
- Non-hazardous waste (e.g., brine disposal and drainage)
- Non-waste (e.g., enhance recovery, artificial recharge solution mining, and in-site mining

Land application
- Waste water (e.g., spray irrigation)
- Wastewater byproducts (e.g., sludge)
- Hazardous waste
- 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

Detonation sites
Radioactive disposal sites
- Non-waste

Open burning sites

Category III - Sources designed to retain substances during transport or transmission
Pipeline
- 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 salts applications
Urban run-off
Percolation of atmospheric pollutants
Mining and mine drainage
- Surface mine-related
- Underground mine - related

Category V - Sources providing conduit or inducing
Production wells
- Oil (and gas) wells
- Geothermal and heat recovery wells
- Water supply wells

Other wells (non-waste)
- Monitoring wells
- Exploration wells

Construction excavation
Improperly abandoned wells

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)

5.2.1 Known and Potential Contaminant Source Listings

To identify sites of known soil and ground water contamination, the following databases from the U.S. Environmental Protection Agency and the Washington State Department of Ecology were reviewed:

- Accidental Release Information Program (ARIP) report
- Comprehensive Environmental Response Compensation & Liability Act list (CERCLA)
- Confirmed & Suspected Contaminated Sites (CSCS) list
- Facility Index System (FINDS) report
- Hazardous Sites List (HSL)
- Leaking Underground Storage Tanks (LUST) list
- Resource Conservation and Recovery Information System (RCRIS) report and Washington Active Handlers List
- Solid Waste Facility Database (SWFD)
- Toxics Release Inventory System list (TRIS)
- Underground Storage Tanks (UST) report
- National Pollutant Discharge Elimination System (NPDES) Dairy Operations
- Licensed and Certified Feedlots List (LCFL)

The sites and facilities identified in these databases were cross-checked with the results of a windshield survey conducted by City staff in 2003. This survey included identification of known potential contaminant sources (e.g. gas stations, dry cleaners, etc.) within the City limits. It should be noted that a facility may be listed in more than one of these databases.

5.2.2 Zoning and Land Use

The majority of industrial land use is located in the southern and eastern edges of the City and in a smaller area between Warehouse and Blaine Avenues (see Exhibit 5-1). These areas include a combination of heavy and light industrial activities. A large portion of the City's industrial activity is geared toward food processing and support of the agricultural industry. Commercial land use activities are concentrated along the Highway 12 corridor, with smaller parcels of commercially-zoned land interspersed throughout the City (e.g. near W. Edison and Zillah Avenues, near S. 16th and Lincoln Avenues, etc.). A related land use is the Sunnyside Municipal Airport, approximately 2 miles east of the City. The most frequent concern associated with industrial and commercial land uses is contamination with petroleum hydrocarbons. These potential contaminants are typically due to the historic or current presence of heating oil and fuel storage tanks, both above and underground. Locations of known or suspected contamination are discussed in Section 5.3.

Agricultural land use can have a significant impact upon groundwater quality. Agricultural land use represents a significant proportion of the land use within those portions of the WHPA that are beyond the City limits. In addition, several dairy and feedlot operations exist within the City. The primary causes of agriculture-related groundwater contamination are runoff from feedlots, pastures, and barnyards, elevated nitrate levels due to excessive fertilization or inadequate management of animal wastes, and the presence of pesticide and herbicide break-down products.

Residential land use in the City of Sunnyside is primarily of medium to low density. The relative risk of groundwater contamination from residential areas depends significantly upon whether the area is served by city sewer or private septic systems. Potential contaminant sources related to residential land use include nitrate loading from septic systems, fertilizer applications and leaking sewer mains, disposal of chemicals through septic systems, small livestock operations and pesticide applications. Areas of unsewered residential land use exist throughout the City. The primary water quality concern from unsewered residential areas is nitrate loading in the aquifer. However, bacterial contamination from improperly functioning systems and improper disposal of household chemicals are also risks associated with septic systems. For individual homeowners, routine system maintenance and proper disposal of household chemicals can significantly limit these risks. For the City, conversion of residences on septic systems to City sewer service is the most effective method of limiting aquifer contamination risk associated with unsewered residential land use.

5.3 Known and Suspected Contaminant Sources

To identify potential or confirmed sources of groundwater contamination in the WHPA, information from various environmental databases was obtained and mapped. The full list of potential and confirmed sources of groundwater contamination can be found in Table 5-2. The results of the contaminant inventory revealed a variety of potential contaminant sources located at 69 different locations in and around Sunnyside. The highlights of the inventory list include:

- 64 - Underground Storage Tanks (USTs)
- 20 – Reported Leaking Underground Storage Tanks (LUSTs)
- 16 - Confirmed and Suspected Contaminated Sites (CSCSs)
- 18 – Hazardous Waste Generators (Ecology Active Hazardous Waste Handlers List & EPA Resource Conservation and Recovery Information System)

Three additional sites were added from a field survey conducted by City staff (see Section 5.4.1). A map of sources ranked by contamination risk is provided in Exhibit 5-2. The following databases were reviewed and are discussed in order of descending importance relative to potential risk to the WHPA. Appendix E contains detailed information for sites found in each database.

Washington State Department of Ecology (Ecology) Confirmed and Suspected Contaminated Sites (CSCS) List: Upon discovery of a potential contamination issue, sites undergo a Site Hazard Assessment (SHA) and are ranked according to the potential severity of the hazard using the Washington Ranking Method (WARM). The WARM rankings range from 1 (greatest risk to human health and the environment) to 5 (least risk). These sites are then listed on the Ecology Hazardous Sites List. If Ecology determines that the site warrants further investigation or cleanup under the Toxics Cleanup Program, the site is added to Ecology's CSCS list.

There are 16 sites on the CSCS list within Sunnyside that have suspected or confirmed contamination of groundwater, drinking water, or soil . Of these, 12 have petroleum hydrocarbon contamination in soil or groundwater on-site. Records of contaminated air or surface water are

not included, as their risk to groundwater quality is limited. The status of each site (ranking, remedial action, monitoring, clean-up activities, etc.) is also provided in Appendix E.

Ecology Hazardous Sites List (HSL): Sites are placed on this list as a precursor to determining whether they should be added to the Ecology Confirmed and Suspected Contaminated Sites List. Sites listed here have undergone a Site Hazard Assessment (SHA) and given a priority ranking using the WARM. If further investigation is warranted, the site is listed on the CSCS. All sites in Sunnyside on the HSL are also on the CSCS. As such, these sites are not summarized separately.

Ecology Underground Storage Tank (UST) list: This database is comprised of regulated USTs, as defined by WAC 173-360, registered with Ecology. State UST regulations have been in effect since 1986. The UST list identifies the substance stored, quantity range, and status of each UST. Twenty-three sites within the study area have a combined 58 operational USTs and 7 USTs where closure is in progress. Owners of a UST for heating oil, residential USTs with a capacity of 1,100 gallons or less, or any tank under 100 gallons are exempt from registering their UST with the State of Washington. Appendix E lists known exempt, closed, and removed USTs. In addition to these known tanks, three tanks exist in tax parcel 231131-34001-1. The status of these three tanks is unknown. Removed, closed in place, and exempt USTs are not shown in Table 5-2 or on Exhibit 5-2.

Ecology Leaking Underground Storage Tank (LUST) list: Sites on this list have underground storage tanks that have released contaminants to the adjacent soil and groundwater and have been reported to Ecology. USTs installed after 1993 are required to meet all of the leak detection requirements as defined under WAC 173-360. Available information includes the site name and address, release notification date, site status, and media affected. The list does not identify which tank on site was leaking, nor if the tank has been removed.

Owners and operators of registered USTs are required to report a confirmed release in accordance with WAC 173-360 (Washington State Underground Storage Tank Regulations) within 24 hours. Under the Model Toxics Control Act Cleanup Regulation (WAC 173-340), even UST owners that are exempt from registering their UST with the State of Washington are required to report a release from their UST that may pose a threat to human health and the environment. Facilities/sites on the Ecology LUST list submit reports to Ecology regarding the status of any anticipated or on-going cleanup efforts. A status of "reported cleaned up" indicated that cleanup efforts at a site have concluded and that no further action is planned, although the cleanup has not been verified by Ecology (enabling removal from the LUST list). A status of "cleanup started" indicates that facility/sites have initiated a cleanup program. "Monitoring" indicates that the contaminated media are being monitored on a regular basis. This does not provide an indication of the cleanup status of the site. Sites that have been cleaned-up are not shown in Table 5-2 or on Exhibit 5-2 unless there are other groundwater quality concerns on-site.

Table 5-2
City of Sunnyside List of Potential Contaminant Sources

Site ID	Facility	Address	Inventory List	Site Category	Database Listing(s)[1]
1	ARCO 5939	1850 Waneta Rd.	Haz. Waste Generator (small) Four USTs (leaded gasoline) • 5,000-9,999 gal • 5,000-9,999 gal • 5,000-9,999 gal • 5,000-9,999 gal	II	RCRIS UST
2	Bargain Hut	515 Harrison	LUST (Soil)	II	LUST
3	BBP Inc. (Underwood Oil)	106 N. 9th	Four USTs • 10,000-19,999 gal (leaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (diesel)	II	UST
4	Bee Jay Scales (Sandy Farms)	116 N. 1St St.	Haz. Waste Generator (no longer generating) Halogenated Organic Compounds & Pesticides (Soil & Groundwater)	IV	CSCS RCRIS
5	Bleyhl Farm Service	1720 Eastway Dr.	Haz. Waste Generator (no longer generating) Petroleum Products (Soil & Groundwater) LUST (Soil & Groundwater) Four USTs • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (diesel)	II	CSCS LUST RCRIS UST
6	Bleyhl Farm Service	303 E. Lincoln St.	Four USTs • 5,000-9,999 gal (unleaded gasoline) • 5,000-9,999 gal (alcohol blend gasoline) • 10,000-19,999 gal (alcohol blend gasoline) • 10,000-19,999 gal (diesel)	II	UST
7	Bob's Auto Clinic	1006 Lincoln	One UST (closure in progress) • 111-1,100 gal (used/waste oil)	II	UST

Table 5-2
City of Sunnyside List of Potential Contaminant Sources

Site ID	Facility	Address	Inventory List	Site Category	Database Listing(s)[1]
8	Burlington Northern Rail Terminal	MP 54.5 12th Sub. Portland Div.	LUST (Soil & Groundwater)	II	LUST
9	Canam Steel Corp.	2002 Morgan Rd.	Haz. Waste Generator (large) RCRA Facility (shipped off-site for treatment)	II	RCRIS
10	Carnation Company	111 E. Lincoln Ave.	Two USTs (closure in progress) • size unknown (leaded gasoline) • size & substance unknown	II	UST
11	Cascade Natural Gas	512 Decatur Ave.	Petroleum Products & Conventional Organic Contaminants (Soil & Groundwater) LUST (Soil & Groundwater; Cleanup Started)	IV	CSCS LUST
12	Chateau Ste Michelle	245902 N Cold Creek Rd.	Two USTs (status unknown) • size unknown (unleaded gasoline) • size unknown (unleaded gasoline)	II	UST
13	Circle L	809 Hwy 12	Petroleum Products (Soil & Groundwater) LUST (Soil)	II	CSCS LUST
14	Cliff's Battery Service	Scoon & Woodin Rd.	Metals (Soil)	IV	CSCS
15	DRR Fruit Products	380 Alexander Rd.	Food Processor	IV	Facility/Site Query
16	Estudillo's Food Store	2601 Sheller Rd.	Two USTs (diesel tank closed in place) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline)	II	UST
17	Fry Building	111 S. 6th St.	Petroleum Products (Soil & Groundwater) LUST (Soil & Groundwater)	II	CSCS LUST
18	Golob & Sons	2391 Sheller Rd.	Feedlot	I	LCFL
19	Green Valley Implements / Speck Motors	61 E. Allen Rd.	Haz. Waste Generator (small) LUST (Soil; Cleanup started)	II	LUST RCRIS

Table 5-2
City of Sunnyside List of Potential Contaminant Sources

Site ID	Facility	Address	Inventory List	Site Category	Database Listing(s)[1]
20	Hickenbottom Sons Inc.	301 Warehouse Ave.	Halogenated Organics & Pesticides (Soil & Groundwater; State Cleanup Site); Petroleum Products (Soil; State Cleanup Site)	IV	CSCS
21	Independent Food Processors	1525 S 4th St.	Food Processor	IV	Facility/Site Query
22	Jackpot Food Mart 069	600 Yakima Valley Hwy	Three USTs • 5,000-9,999 gal (leaded gasoline) • 5,000-9,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline)	II	UST
23	Jackpot Food Mart 066	1121 S. 16th St.	Three USTs • 5,000-9,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (leaded gasoline)	II	UST
24	James River Corporation (Johnson Concentrates)	310-314 Edison Ave.	Food Processor	IV	Facility/Site Query
25	Jerry's Steel Supply	232 N. Sixth St.	LUST (Soil; Cleanup Started)	II	LUST
26	Johnny's Texaco	636 E. Edison Ave.	Haz. Waste Generator (small) Petroleum Products (Soil, Groundwater & Drinking Water); Halogenated Organics (Groundwater & Drinking Water) LUST (Soil & Groundwater) Three USTs • 5,000-9,999 gal (unleaded gasoline) • 5,000-9,999 gal (leaded gasoline) • 2,001-4,999 gal (unleaded gasoline)	II	CSCS LUST RCRIS UST
27	Johnson Fruit & Cold Storage	336 Blaine	Food Processor	IV	Facility/Site Query
28	Johnson Fruit Cannery	300 Warehouse Ave.	Food Processor	IV	Facility/Site Query

Table 5-2
City of Sunnyside List of Potential Contaminant Sources

Site ID	Facility	Address	Inventory List	Site Category	Database Listing(s)[1]
29	JRJ Service Inc.	405 Scoon Rd.	Haz. Waste Generator (small)	IV	RCRIS
30	Kelloggs Korner	200 Midvale Rd.	Petroleum Products (Soil, Groundwater & Drinking Water) LUST (Soil & Groundwater; Cleanup Started)	II	CSCS LUST
31	La Rosita Bakery	200 N. 1st St.	Petroleum Products & Non-Halogenated Solvents (Soil & Groundwater) LUST (Soil & Groundwater)	II	CSCS LUST
32	Maid O' Clover	1530 Hwy 12	Petroleum Products (Soil & Groundwater) LUST (Media Unknown) Three USTs • 5,000-9,999 gal (unleaded gasoline) • 5,000-9,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline)	II	CSCS LUST UST
33	Manhole 34 PLP Group	600-601 & 612 Hwy 12	Haz. Waste Generator (no longer generating) Petroleum Products (Soil & Groundwater)	IV	CSCS RCRIS
34	Marquez Manufacturing Ltd.	410 Factory Rd.	Haz. Waste Generator (small)	IV	RCRIS
35	Mirastor #62022	2665 E. Lincoln Ave.	Three USTs • size unknown (unleaded gasoline) • size unknown (unleaded gasoline) • size unknown (diesel)	II	UST
36	Monson & Sons (Bar-S)	Lat 46.18.52; Long 120.00.53	Feedlot	I	LCFL
37	Neighborhood Church	1510 Lincoln Ave.	LUST (Soil; Cleanup Started)	II	LUST
38	Outpost	1825 Waneta Rd.	Four USTs • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (leaded gasoline) • 10,000-19,999 gal (diesel)	II	UST
39	Park n Pak	905 Lincoln Ave.	One UST (Size & Substance Unknown)	II	UST

Table 5-2
City of Sunnyside List of Potential Contaminant Sources

Site ID	Facility	Address	Inventory List	Site Category	Database Listing(s)[1]
40	Pet Health Clinic	2210A E. Edison Rd.	LUST (Soil; Cleanup Started)	II	LUST
41	Port of Sunnyside WWTP	825 Midvale Rd.	NPDES Discharge Permit (Groundwater)	I	NPDES
42	PW Pipe	1820 S. 1st St.	Haz. Waste Generator (small)	IV	RCRIS
43	RDO Equipment Co.	140 Midvale Rd.	Haz. Waste Generator (small)	IV	RCRIS
44	Roza Irrigation District	125 S. 13th St.	Haz. Waste Generator (small) Petroleum Products (Soil & Groundwater; State Cleanup Site) LUST (Soil & Groundwater; Monit. in Progress) Two USTs • 1,101-2,000 gal (unleaded gasoline) • 1,101-2,000 gal (diesel)	II	CSCS LUST RCRIS UST
45	School District Bus Garage	Edison & Hwy 12	LUST (Soil & Groundwater)	II	LUST
46	Simplot Soilbuilders	1st & Zillah Ave.	Haz. Waste Generator (small)	IV	RCRIS
47	Star Transport Trailers	230 Hwy 241	Haz. Waste Generator (small)	IV	RCRIS
48	Sun King Fruit Co.	325 E. South Hill Rd.	LUST (Soil & Groundwater; Cleanup Started)	II	LUST
49	Sunny Spot	1850 Yakima Valley Hwy	Two USTs • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline)	II	UST
50	Sunnyside Chevron	1805 S. 1st St.	Three USTs • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 20,000-29,999 gal (unleaded gasoline)	II	UST
51	Sunnyside Municipal Airport	2 Miles East of City	Petroleum Product Storage	II	Facility/Site Query

Table 5-2
City of Sunnyside List of Potential Contaminant Sources

Site ID	Facility	Address	Inventory List	Site Category	Database Listing(s)[1]
52	Sunnyside Municipal Well 1	Grant St.	Halogenated Organic Compounds & Conventional Organics (Soil & Groundwater)	V	CSCS
53	Sunnyside WWTP	1338 S. 4th St.	NPDES Discharge Permit (Sulphur Creek)	I	NPDES
54	Sunnyside Valley Irrigation District	1433 S. 4th St.	LUST (Soil & Groundwater; Cleanup Started)	II	LUST
55	Tom Denchel Ford	301 S. 6th St.	Haz. Waste Generator (small)	IV	RCRIS
56	Tucker & Co	31501 Yakima Valley Hwy.	Five USTs • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline) • 10,000-19,999 gal (diesel)	II	UST
57	Union Pacific Railroad	S. 5th Ave. & Edison	LUST (Soil & Groundwater; Cleanup Started & Monitoring in Progress)	II	LUST
58	United Telephone Co.	409 S. 5th St.	LUST (Soil & Groundwater; Monitoring in Progress)	II	LUST
59	Unocal Bulk Plant 0766	511 Lincoln St.	Petroleum Products (Soil & Groundwater)	IV	CSCS
60	Upland Farms	Rt. 1 Box 1166	Two USTs (closure in progress) • size unknown (leaded gasoline) • size & substance unknown	II	UST
61	Valley Dry Cleaners	422 S. 6th St.	Halogenated Organic Compounds (Soil & Groundwater; State Cleanup Site)	IV	CSCS
62	Valley Processing	108 E. Blaine Avenue	Food Processor	IV	Facility/Site Query
63	Valley Truck Repair	601 Hwy 241	Haz. Waste Generator (small)	IV	RCRIS

Table 5-2
City of Sunnyside List of Potential Contaminant Sources

Site ID	Facility	Address	Inventory List	Site Category	Database Listing(s)[1]
64	Valley View Gas Mart (Time Oil)	107 W. Lincoln	LUST (Soil & Groundwater; Monitoring in Progress) Two USTs (Closure in Progress) • 5,000-9,999 gal (unleaded gasoline) • 10,000-19,999 gal (unleaded gasoline)	II	LUST UST
65	Washington Hills Cellars	111 E. Lincoln St.	Food Processor	IV	Facility/Site Query
66	West Farm Foods (Darigold)	400 Alexander	Food Processor	IV	Facility/Site Query
67	Wondrack Distributing	111 South Hill Rd.	Three USTs • 5,000-9,999 gal (unleaded gasoline) • 5,000-9,999 gal (unleaded gasoline) • 10,000-19,999 gal (diesel)	II	UST
68	Yakima Chief Inc.	520 S. Hill Rd.	Haz. Waste Generator (medium) Food Processor	IV	Facility/Site Query RCRIS
69	Yakima Co Maint. Shops	321 S. 1st St.	Haz. Waste Generator (no longer generating) Two USTs • 5,000-9,999 gal (unleaded gasoline) • 5,000-9,999 gal (diesel)	II	RCRIS UST

1 Sources:
CSCS: WA Dept. of Ecology. Confirmed and Suspected Contaminated Sites Report. Current as of July 25, 2003.
Facility/Site Query: WA Dept. of Ecology. Current as of September 18, 2003.
Hazardous Waste Generators: WA Dept. of Ecology. Active Hazardous Waste Handlers List. Current as of September18, 2003.

- Small: <220 lbs
- Medium: 220-2200 lbs
- Large>2200 lbs of hazardous waste generated annually

LCFL: WA Dept. of Agriculture. Licensed Certified Feedlot List. Current as of September 18, 2003.
LUST: WA Dept. of Ecology. Leaking Underground Storage Tanks List. Current as of July 25, 2003.
RCRIS: Environmental Protection Agency. Resource Conservation and Recovery Information System. Current as of September 18, 2003.
UST: WA Dept. of Ecology. Underground Storage Tanks List. Current as of July 25, 2003.

EPA Region 10, Resource Conservation and Recovery Information System (RCRIS) report / Ecology Active Handlers Database: Facilities that generate, transport, treat, store, or dispose of hazardous materials are listed in both of these databases. These facilities are closely monitored as the consistent presence of these materials greatly increases the potential for contamination, either through accidental spills or mishandling. Eighteen (18) facilities were listed in the RCRIS database. This list contains 16 small-quantity hazardous waste generators (less than 220 lbs/year), 1 medium-quantity generator (220-2200 lbs/year), and 1 large-quantity generator (more than 2200 lbs/year). No treatment, storage or disposal facilities were located within the study area.

National Pollutant Discharge Elimination System (NPDES) Dairy Operations: Any Dairy Animal Feeding Operation defined under RCW 90.64.010(9) that meets the definition of a Concentrated Dairy Animal Feeding Operation under RCW 90.64.010 (8) or is designated a Significant Contributor of Pollution under RCW 90.64.020 or meets the definition of a Concentrated Animal Feeding Operation identified in 40 CFR Part 122.23 is required to obtain coverage under this general permit or obtain an individual permit. A general discharge permit is written to cover similar types of discharges from similar facilities. The most commonly recognized contaminants or effects associated with dairy wastewater discharges include suspended solids, organics, fecal coliform bacteria, nitrogen, phosphorus, and biochemical oxygen demand (BOD). There are no NPDES dairy operations within the WHPA.

Washington Department of Agriculture Licensed and Certified Feedlot List (LCFL): A certified feed lot, as defined by RCW 15.68.020, means any place, establishment, or facility commonly known as a commercial feed lot, cattle feed lot, or the like. The Washington Department of Agriculture maintains a list of all licensed and certified feedlots in the state. This list includes the name and operating location of the facility. Detail on facility operations is available from the Department of Agriculture. The primary water quality concern from feedlots is elevated fecal coliform bacteria contamination. There are two known feedlots in the study area (see Table 5-2).

EPA Region 10 Toxics Release Inventory System (TRIS): Manufacturing facilities with more than 10 workers that process, manufacture, or use more than a threshold amount of a toxic chemical listed on the TRIS list must separately report their annual releases (in pounds) to air, land, water, and underground. Two sites in the study area, Canam Steel Corporation and West Farm Foods Inc. (Darigold) reported releases on the TRIS; Canam Steel from 1997-2001, and Darigold from 1995-2001. However, all of these releases were either fugitive or stack releases to the air. As such, these releases were not included in the evaluation of contamination risk.

Ecology Solid Waste Facilities Database (SWFD) for Washington State: This list, compiled by Ecology, includes the general site location information (city and state) of municipal solid waste landfills, waste types and amounts, and facility contact information. There are no sites in the study area on the SWFD.

EPA Region 10 Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS): This list, developed by the EPA under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), contains information

regarding hazardous waste sites and their ranking on the National Priorities List (NPL). No sites in the study area were listed in the CERCLIS database.

EPA Region 10 Accidental Release Information Program (ARIP) database: This database contains information about non-routine releases above a reportable quantity of certain hazardous substances. Under CERCLA and RCRA regulations, chemical releases must be reported to the National Response Center or EPA Region 10 Office. Releases resulting in off-site consequence, response, or environmental damage are then listed in the ARIP database. The ARIP database is primarily focused on improving accidental releases prevention and contains information regarding the circumstances of the accident, preventative measures in place before and after the accident, and mitigation measures, if any, that were undertaken. There are no sites in the study area in the ARIP database.

Facility Index System (FINDS) report: This database is a composite listing of facilities regulated under a variety of EPA programs. Information in this database is limited to facility location, standard industrial classification, primary database listing the facility, additional listing databases, and the corresponding system ID numbers. The primary use of this database is as a complementary search tool to help verify that all facilities in the above programs are located. All pertinent facilities listed in the FINDS database were previously accounted for and discussed under the above database sections.

5.4 Additional Groundwater Concerns

5.4.1 Field Survey

City staff identified several of the sites listed in Table 5-2 during a windshield survey of potential contaminant sites. In addition, the five sites listed in Table 5-3 were identified by City staff, but were not present in any of the environmental database searches. For the purposes of ranking, each of the current gas stations were assumed to have two USTs on site, and the food processor was ranked in a similar fashion as the food processing facilities identified in Table 5-2. The two former gas stations listed in Table 5-3 were not included in the ranking as no known contamination exists on-site, and any potential USTs remaining on-site are no longer being used.

Table 5-3
Field Survey Sites

Site ID	Facility Type	Location	Assumed Inventory
A	Gas Station	Northwest Corner of 16th St. & Yakima Valley Hwy	Two USTs
B	Gas Station	Northwest Corner of 6th St. & Decatur Ave.	Two USTs
C	Food Processor	North Side of Blaine Ave. at 3rd St.	Food Processor
---	Former Gas Station	Northeast Corner of 16th St. & Edison Ave.	---
---	Former Gas Station	Southeast Corner of 6th St. & Homer St.	---

5.4.2 Agricultural Production

Sunnyside is surrounded by commercial agriculture. In the production of these crops, a number of commercial fertilizers and pesticides are applied on a regular basis. Some of the more commonly used compounds include: nitrogen (ammonia); 1,3-dichloropropene, metam sodium, EPTC, 2,4-D, alachlor, atrazine, and DCPA. Historically, EDB and 1,2-dichloropropane have also seen wide use. However, these compounds have not been detected in samples collected from the City's production wells. Nitrate has been detected in samples collected from the City's wells as discussed in Section 2. However, those samples did not exceed the MCLs. The exact origin of the nitrate detections has not been clearly defined. However, historic and current use of nitrogen-based fertilizers in the region are a point of concern, as are private residential septic systems. Similarly, irrigation water that percolates into the soil can potentially carry fertilizers, herbicides, and pesticides into the subsurface where contaminants could eventually enter groundwater. The Sunnyside Valley Irrigation District Snipes Mountain Lateral canal and Sulphur Creek Wasteway flow through the western and southern portions of the City. The potential for contamination of the groundwater from normal operations of these systems is minor, but contamination from a spill is possible and would depend upon the amount and type of material released into the canal.

5.4.3 Transportation Corridors

Since Sunnyside sits on a major transportation corridor, there is a potential for contamination of the aquifer through a spill from an accident on Interstate 82. This spill could release contaminants that may threaten groundwater resources. The degree of hazard would depend on the type and quantity of material spilled and left unrecovered. Spill response and management policies of the City and Yakima County will limit the potential contamination risk from these accidental releases.

5.4.4 Abandoned and Exempt Wells

A potential means for contaminants at or near the surface to enter the groundwater is through existing or improperly abandoned wells. Though the community is served by the City's municipal water system, property owners may have private wells that may have been installed prior to construction of the municipal system or were constructed to supply irrigation water. The number and location of abandoned and exempt wells is currently unknown.

Properly constructed wells have a low-permeability surface seal placed around the upper portion of the well casing to prevent the vertical flow of surface water or contaminants into water-bearing formations. In some cases, seals are also placed at greater depths to prevent movement of water from an upper aquifer into a lower aquifer by percolation along the outside of the well casing. There is also some potential for contaminants to enter an aquifer from discharge directly into a well casing, e.g., if a well were under flood water or if it were used for disposal of contaminants. The procedure to abandon wells is prescribed under WAC 173-160. Under those standards, all wells which are no longer in use are to be decommissioned by the removal of any

casing or well pipe and subsequently sealed throughout the borehole with the pressure injection of cement or over-drilling.

5.4.5 Unsewered Areas and Septic Systems

There are several areas within the WHPA that are currently not served by the City sewer system. These areas will likely remain unsewered for the near future, although areas will be brought onto the City sewer system as opportunities become available. The principal concern from properly maintained and used septic systems is the impact of nitrogen, which is converted and transported in the environment as nitrate in the groundwater system. Nitrate is a primary constituent of concern because of its relatively high mobility in groundwater systems and its potential harmful effects to humans at high concentration levels.

5.4.6 Pesticide Application

Pesticides are typically used in residential areas, along transportation corridors, and at electrical substations. The term "pesticide" is used here to describe a suite of related products that include insecticides, herbicides, and fungicides. As of 1995, available pesticides include 19 varieties that are restricted to permitted use and a wide variety of non-permitted, commercially-available products used in smaller quantities. When applied in accordance with manufacturer specifications, pesticides are relatively immobile because they are consumed by the pests, break-down, or become absorbed within the soil. Herbicides are also often used on transportation corridors, mainly to keep highway shoulders free from plant growth. Herbicide use is limited, though, by the use of mowing within the City to control vegetation.

Pesticides are also used by homeowners. They are used to kill garden and lawn pests, destroy weeds, kill tree stumps, and for other purposes. Homeowners are able to purchase only chemicals that have been approved for retail sale. Instruction are included on container labels, but there are no further restrictions provided the chemicals are used as intended.

The presence of multiple sources of pesticides in the wellhead protection management area results in the potential or additive loading to the groundwater system resulting in a possible progressive decline in water quality. To date, pesticides have not been a problem for water quality in the City of Sunnyside.

5.4.5 Petroleum Hydrocarbons

There are numerous sources for petroleum hydrocarbons within the well capture zones. These include gasoline stations, industrial and commercial operations with equipment fueling stations, and heating oil tanks. Petroleum hydrocarbons are typically stored in USTs in volumes ranging from 300 gallons (residential or small commercial) up to 10,000 gallons (large gasoline service stations). Larger storage volume requirements (e.g. greater than 10,000 gallons) are typically stored above ground where monitoring of leaks is easier to achieve.

Petroleum hydrocarbons are not highly soluble in water. Their solubility is related to the length of the hydrocarbon chains that comprise the material. Short chain hydrocarbons, the types which

are found in gasoline, are typically more soluble than longer chain hydrocarbons, which are found in diesel fuel and heating oil. Because these materials are not highly soluble, they are not typically found to migrate very far from the source of a spill. Therefore, the greatest potential threat to groundwater quality is from sources of petroleum hydrocarbons very close to the wellhead, although very large releases of petroleum hydrocarbons should be considered a threat since large spills will travel farther than small spills. Petroleum hydrocarbon releases may also be more of a threat at sites where other types of solvents have been spilled. These materials can sometimes act as co-solvents and increase the solubility of petroleum product, and, therefore, increase the likelihood of transport of the petroleum hydrocarbons to a wellhead. Furthermore, some of the petroleum hydrocarbon components (e.g. benzene and toluene) can dissolve and migrate in groundwater toward the wellheads.

5.4.7 Metals

Groundwater contamination from metals is a potential threat at commercial and industrial sites which handle or use materials with significant metallic constituents and historical pesticide use areas. However, high concentrations of metals typically do not migrate far from their source areas because of their low solubility, tendency to adsorb to clay particles or organic matter, tendency to precipitate, and/or tendency to substitute for other minerals in the aquifer.

5.4.8 Corrosive Materials

Corrosive materials (acidic and basic compounds) may be present in some products used, or contained in waste materials generated from industrial sites. Large-scale storage of corrosive materials can change the pH of shallow groundwater and induce corrosion problems in structures that are in contact with groundwater, including City water distribution system components. Changing the pH of groundwater could also result in mobilization and/or immobilization of other constituents. Extreme changes in pH may make groundwater unsuitable for human consumption or for use in industrial processes. However, no sites with large-scale storage of corrosive materials were identified within the WHPAs.

5.4.9 Other Contaminant Sources

Movement of water through the soil profile from other sources, including stormwater disposal through drywells and wastewater disposal from septic system drain fields or wastewater spray fields, can also provide a means for contaminants at or near the ground surface to move into groundwater. Stormwater runoff from streets and parking lots frequently is contaminated with salts and petroleum products. It is a common practice in eastern Washington, where annual precipitation is low, to utilize drywells for stormwater disposal. This allows the storm water to dissipate by infiltration into the soil, but any contaminants carried by the water also enter the soil profile.

5.4.10 Potential Pathways for Groundwater Contamination

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 are the mechanisms through which wellhead protection activities can occur. The following section briefly discusses the main mechanisms for transport of contaminants to the subsurface.

Discharge onto the Ground Surface: One of the main mechanisms for discharge of contaminants to an aquifer is discharge at the ground surface. Direct discharge to the ground occurs when products or waste materials are spilled or placed onto the ground and infiltration of contaminants occurs, often with the help of rainfall. If a sufficient volume of material is released, materials can percolate into the subsurface and they eventually reach the water table and migrate downgradient through the aquifer.

Discharge to Subsurface: Discharge directly to the subsurface occurs from septic systems and dry wells. This is a more direct mechanism for transport because contaminants are discharged directly into the groundwater system, thus bypassing the upper layers of soil that can provide absorption, dispersal, and filtration of many contaminants.

Stormwater Runoff: Rainfall onto the ground either infiltrates into the subsurface or becomes surface water runoff. The quality of the infiltrated water or runoff depends on the type of land use and potential contaminants that such water can pick up along its path. Stormwater runoff is able to pickup and dissolve potential surface contaminants, and eventually discharge these contaminants to groundwater via infiltration from ditches or infiltration structures. The potential constitutes within stormwater are diverse, and include heavy metals and petroleum hydrocarbons from roadways, parking areas, residential developments, industrial areas, and commercial areas. In addition, a wide variety of organic chemicals commonly used for certain business practices can reach groundwater through stormwater runoff (e.g. solvents, paints, dry cleaning solutions).

5.5 Risk Assessment

With the potential contaminant sources identified, knowledge of the inventory may be used to prioritize the risk posed to the City's ground water supply. In addition, this information can be used to help establish action priorities directed at reducing the relative risk associated with particular sites. By prioritizing the risks associated with each source, proper steps can be taken to improve the long-term protection of the quality of the surrounding ground water resource and minimize the daily threat of contamination posed by the overall contaminant inventory. Moreover, the City can use this information to develop an initial priority list for focusing risk reduction efforts without allocating substantial local funds.

5.5.1 Methodology for Establishing Risk Priorities

The basic approach for the risk assessment was to evaluate each source based on three decision-levels: A-Proximity of Site to Water Source; B-Known vs. Potential Risk of Contamination and C-Severity Risk. Using these decision levels, the sites are grouped into four major risk categories: (i) high, (ii) moderate, (iii) low, and (iv) minor. The risk categories are based primarily on their proximity to the wellheads (Decision Level A). The sites within each major risk category are then further prioritized within each risk category based on the two other Decision levels (B and C). Brief descriptions of the ranking methodology used for each decision level are provided in the subsections below. It should be noted that in considering the three decision levels described below, no field surveys or formal site visits were conducted to determine the actual type of storage or volumes of chemicals, nor was there an attempt to determine the specific chemicals stored or used by any of the business owners or operators. Rather professional judgment was used to evaluate the variety of materials, volume, and form of storage characteristic of the type of business or operation based upon information available from the databases reviewed above.

5.5.2 Level A: Proximity of Site to Water Source

Decision Level A is used as the primary ranking criteria for selecting which major risk level a potential contaminant source falls within. The other Decision Levels are used essentially for ranking within the major risk level. Decision Level A uses the capture zones for the 1-, 5-, and 10-year times of travel delineated in Section 4 as the basis for ranking the potential contaminant sources. If a source is located within one of the main time of travel (TOT) zones, the risk is greater than that of a source which is located outside of this area, because the wellhead is likely to be impacted much sooner. Moreover, the risk associated with a source located within the 1-year TOT zone is greater than one located out in the 10-year TOT zone. Hence, the closer a source is located to the wellhead protection area (or the wellhead itself) the greater the risk. Technically, a source located within the 1-year TOT for wells 5 and 8 can be considered a greater risk than a source located within the 1-year TOT for wells 4a, 6, 7, and 9, because wells 5 and 8 are significantly shallower than other City wells. However, emphasis is placed on lateral proximity to the wellheads because management of the potential contaminant sources focuses on its geographical location. Prioritization scores for this decision level can be found in Table 5-4.

Table 5-4
Decision Level A: Proximity of Site to Water Source

Capture Zone	Score
1-Year	High
5-Year	Moderate
10-Year	Low
Outside 10-Year	Minor

5.5.3 Level B: Known vs. Potential Risk of Contamination

Decision Level B further prioritizes those sites within each major risk level. For Decision Level B, the sites were ranked as either known or potential contamination sites. Known sites were defined as sites that have been identified in the CSCS or LUST databases (see Section 5.3 for detail). Potential contamination sites are sites or land areas within the WHPA that are known to be used in ways which potentially could pose a risk to groundwater quality. This category includes both point and non-point sources. Prioritization scores for this decision level can be found in Table 5-5.

Table 5-5
Decision Level B: Known vs. Potential Risk of Contamination

Type of Contaminated Site	Known or Suspected Contamination	Score
CSCS	Known	High
LUST	Known	
Septic/Feedlot/Dairy	Potential	Moderate
USTs & Large Hazardous Waste	Potential	
Transportation Corridors/Sewer Mains/Med Hazardous Waste Generators	Potential	Low
Food Processors, Small Hazardous Waste Generators	Potential	

5.5.4 Level C: Severity Risk

Decision Level C incorporates the type of material on-site as well as the potential volume of material that could be released. Although the type and volume of material is important, this was used as the third level for prioritizing the sites, because of the uncertainty associated with this information in the databases. Different potentially hazardous materials pose a certain level of risk based on the type of material being held. For example, common antifreeze (ethylene glycol) is not generally as harmful to humans or the environment as petroleum products at the same level of exposure. In fact, many of the compounds found in traditional gasoline (e.g. benzene, toluene, and xylene) are known carcinogens. Thus, the type of material and its potential toxicity (if introduced into the drinking water system) are important factors in determining the relative risk for a given source. The more material being handled and/or stored the greater the potential risk to the ground water system. Large volumes for a given source create an increased risk for contamination in the event of a spill or accidental release. As shown in Table 5-6, sites with a UST on-site were considered to have larger volumes of potential contaminants on-site than locations where only existing contamination was noted (e.g. CSCS sites). To be conservative, any site falling in multiple categories was assigned the higher score.

Table 5-6 Decision Level C: Severity Risk	
Contaminant Type & Volume Stored	**Score**
Petroleum and/or Non-Halogenated Solvents with USTs	High
CSCS Sites with No USTs	Moderate
CSCS Sites with Contamination only from Conventional Organics	Low
Sites where UST Closure is in Progress, where a LUST Clean-Up has been Started, or where a RA has been Completed or is In Progress	

5.5.5 Results of Risk Ranking for Potential and Known Contaminant Sources

Table 5-7 provides the rankings for all potential contaminant sites within the Sunnyside WHPA. Risk level distinctions are based primarily upon Decision Level A (Proximity of Site to Water Source). The sites are further prioritized within each risk category by Decision Level B (Known vs. Potential Risk of Contamination). Decision levels C and D are used to rank all sources that have the same ranking scores based on Levels A and B information.

Primary sites within the "high" risk level include sites within the 1-year TOT. Sites within the "moderate" risk level include those within the 5-year TOT. Sites within the "low" risk level are all within a 10-year TOT, and sites within the "minor" risk level are those outside of the 10-year TOT for any well.

Table 5-7 Site Risk Levels for Sunnyside WHPA					
Site ID	**Facility**	**Ranking by Decision Level**			**Site Risk Level**
		A	**B**	**C**	
5	Bleyhl Farm Service	High	High	High	High
11	Cascade Natural Gas	High	High	High	
13	Circle L	High	High	High	
17	Fry Building	High	High	High	
20	Hickenbottom Sons Inc.	High	High	High	
31	La Rosita Bakery	High	High	High	
61	Valley Dry Cleaners	High	High	High	
52	Sunnyside Municipal Well 1	High	High	High	
4	Bee Jay Scales (Sandy Farms)	High	High	Moderate	
25	Jerry's Steel Supply	High	High		
57	Union Pacific Railroad	High	High		
45	School District Bus Garage	High	High		
48	Sun King Fruit Co.	High	High		
54	Sunnyside Valley Irrigation District	High	High		
58	United Telephone Co.	High	High		
---	Residential – Unsewered	High	Moderate		
36	Monson & Sons (Bar-S)	High	Moderate		
50	Sunnyside Chevron	High	Moderate	High	

Table 5-7
Site Risk Levels for Sunnyside WHPA

Site ID	Facility	Ranking by Decision Level			Site Risk Level
		A	B	C	
56	Tucker & Co	High	Moderate	High	
69	Yakima Co Maint. Shops	High	Moderate	High	
B	Gas Station	High	Moderate	High	
3	BBP Inc. (Underwood Oil)	High	Moderate	High	
67	Wondrack Distributing	High	Moderate	High	
---	Transportation Corridors	High	Low		
68	Yakima Chief Inc.	High	Low		
24	James River Corporation (Johnson Concentrates)	High	Low		
42	PW Pipe	High	Low		
51	Sunnyside Municipal Airport	High	Low		
53	Sunnyside WWTP	High	Low		
27	Johnson Fruit & Cold Storage	High	Low		
28	Johnson Fruit Cannery	High	Low		
46	Simplot Soilbuilders	High	Low		
55	Tom Denchel Ford	High	Low		
C	Food Processor	High	Low		
44	Roza Irrigation District	Moderate	High	High	Moderate
32	Maid O' Clover	Moderate	High	High	
33	Manhole 34 PLP Group	Moderate	High	High	
26	Johnny's Texaco	Moderate	High	Moderate	
59	Unocal Bulk Plant 0766	Moderate	High	High	
2	Bargain Hut	Moderate	High		
8	Burlington Northern Rail Terminal	Moderate	High		
42	Pet Health Clinic	Moderate	High		
64	Valley View Gas Mart (Time Oil)	Moderate	High		
60	Upland Farms	Moderate	Moderate	High	
9	Canam Steel Corp.	Moderate	Moderate		
6	Bleyhl Farm Service	Moderate	Moderate	High	
41	Park n Pak	Moderate	Moderate	High	
49	Sunny Spot	Moderate	Moderate	High	
A	Gas Station	Moderate	Moderate	High	
10	Carnation Company	Moderate	Moderate	Moderate	
29	JRJ Service Inc.	Moderate	Low		
21	Independent Food Processors	Moderate	Low		
65	Washington Hills Cellars	Moderate	Low		
14	Cliff's Battery Service	Low	High	High	Low
22	Jackpot Food Mart 069	Low	Moderate	High	
12	Chateau Ste Michelle	Low	Moderate	High	
7	Bob's Auto Clinic	Low	Moderate	Moderate	
30	Kelloggs Korner	Minor	High	Moderate	Minor
19	Green Valley Implements / Speck Motors	Minor	High		
37	Neighborhood Church	Minor	High		
18	Golob & Sons	Minor	Moderate		
1	ARCO 5939	Minor	Moderate	High	

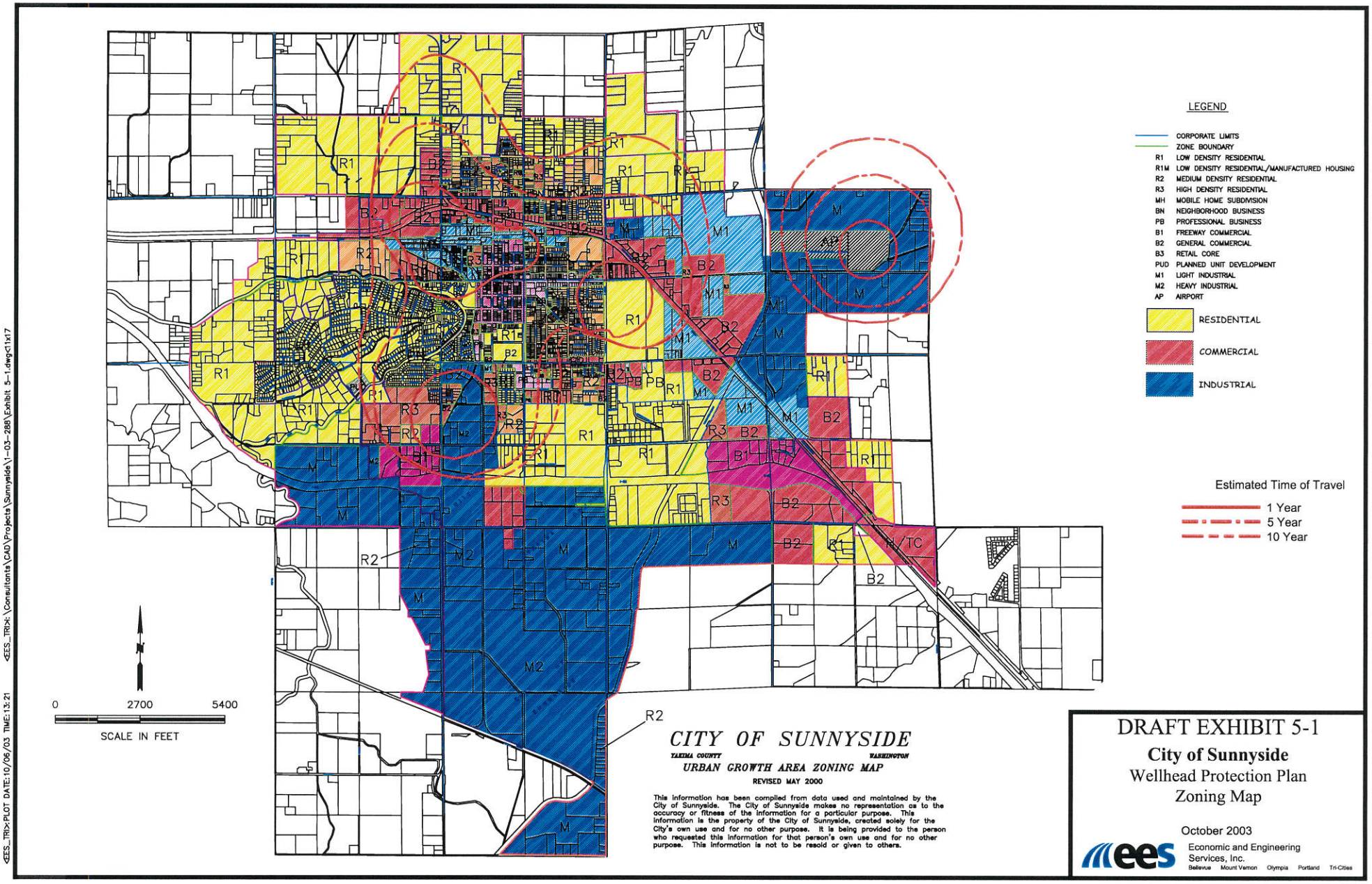
Table 5-7
Site Risk Levels for Sunnyside WHPA

Site ID	Facility	Ranking by Decision Level			Site Risk Level
		A	B	C	
16	Estudillo's Food Store	Minor	Moderate	High	
23	Jackpot Food Mart 066	Minor	Moderate	High	
35	Mirastor #62022	Minor	Moderate	High	
38	Outpost	Minor	Moderate	High	
15	DRR Fruit Products	Minor	Low		
34	Marquez Manufacturing Ltd.	Minor	Low		
41	Port of Sunnyside WWTP	Minor	Low		
43	RDO Equipment Co.	Minor	Low		
47	Star Transport Trailers	Minor	Low		
62	Valley Processing	Minor	Low		
63	Valley Truck Repair	Minor	Low		
66	West Farm Foods (Darigold)	Minor	Low		

5.6 Notification and Contact to Agencies and Owners-Operators

Following DOH guidelines, all owners/operators of known or potential contaminants sources must be notified of their location within the wellhead protection boundaries. In conducting this effort, a sample notification letter is outlined in Appendix F. Notified entities include those identified in Table 5-2.

In addition, notification must be extended to the various regulatory agencies regarding the finding of the contaminant inventory and their locations within the wellhead protection boundaries. A sample of the corresponding letter of notification for regulatory agencies is also outlined in Appendix F. Notified agencies include the Washington Department of Health and Washington Department of Ecology.



DRAFT EXHIBIT 5-1

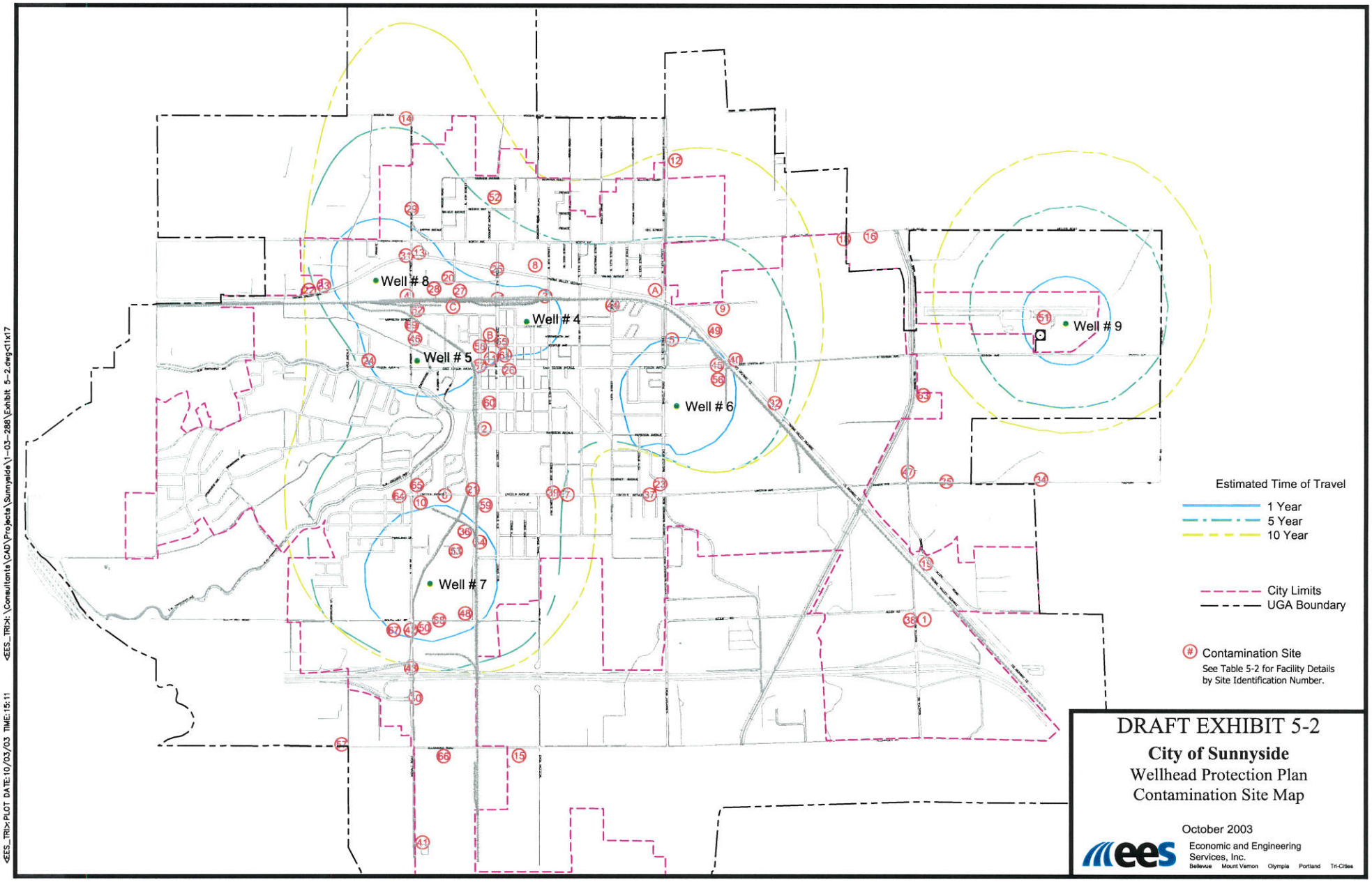
City of Sunnyside

Wellhead Protection Plan

Zoning Map

October 2003

ees Economic and Engineering Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities



DRAFT EXHIBIT 5-2

City of Sunnyside

Wellhead Protection Plan

Contamination Site Map

October 2003

Economic and Engineering Services, Inc.

Bellevue Mount Vernon Olympia Portland Tri-Cities

<EES_TRI>:\Consultants\CAD\Projects\Sunnyside\1-03-288\Exhibit 5-2.dwg<11x17

<EES_TRI>:PLOT DATE:10/03/03 TIME:15:11

Section 6
Spill Response Plan

6.1 Introduction

The purpose of this section is to outline existing spill response procedures for the City of Sunnyside (City). The City is a community that relies on its residential and commercial base for economic support. With this activity, however, comes the need for the use and storage of potentially hazardous material. The associated threat of a spill and resulting impact to the ground water system is largely a function of the type and quantity of material released, along with the timing and location of the spill event.

Such spills or accidents can occur almost anywhere and at anytime. The types of material of concern may be located at several venues within the community. Moreover, the delivery of that material may be tied to primary transportation routes, including commercial trucking and railroads. In the unfortunate event of a spill or accidental release of a hazardous material, the key to minimization of negative impacts relies on an effective and immediate emergency response plan.

Recognizing the need for such a plan, the City is an active participant in the spill response approach developed by Yakima Valley Office of Emergency Management. The County plan contains detailed guidelines for coordination and procedures to follow in response to a spill event. The following provides a brief discussion of the County's approach.

6.2 Operational Concepts

Relying on shared area resources, the Yakima County Office of Emergency Management (OEM) establishes a multi-level response plan that prioritizes the use of local government agencies and departments in responding to emergency events. OEM is charged with assisting local planning groups to facilitate implementation of the current emergency response procedures. Yakima County's plan is documented in the *"Comprehensive Emergency Management Program."* Agencies of the County and its cities and towns are required to support this plan through annual reviews of the program. In addition all parties are required to participate in exercising and training to assure appropriate personnel are trained in the procedures of this plan. Local governments have a duty to be prepared for disaster emergencies.

Primary response is delegated to local resources made available throughout the County, as needed. If an incident is of sufficiently large magnitude as to likely deplete County resources, assistance may be sought from appropriate State and Federal agencies. A brief description of local service capabilities and interagency coordination are outlined below.

Response to a hazardous material release is initiated through contact with the Yakima Public Safety Communications Center (YPSCC) by dialing "911." Upon notification of a hazardous materials release, the YPSCC will dispatch fire service personnel and law enforcement support, as required, to assess the situation and provide immediate care to any injured persons. YPSCC will also contact Washington State Patrol, which is the Incident Command (IC) Agency for hazardous materials spills on state highways and the rest of the state where the jurisdiction has not taken specific responsibility for hazmat incidents.

As the IC, Washington State Patrol will lead the coordination effort for any hazardous material spill response, including the needs of all emergency response agencies involved and the resources required for response. Under direction by the IC, OEM will activate the Operational Area Emergency Operations Center (OAEOC) when needed to coordinate response disciplines. Dispatchers will conduct all related radio traffic until the OAEOC has been activated through contact with the OEM Director, Sheriff, or designated person in command. For a single incident the OAEOC may not be activated and the event will be managed at the Command Post and related dispatch centers.

Response functions are the responsibility of local fire departments, fire districts, law enforcement, medical services, public works, health, and private sector emergency groups (i.e. responsible parties). Emergency responders in the County shall provide services such as (but not limited to): evaluation of the incident, rescue, emergency medical treatment, evacuation of persons at risk, containment of released material, and isolation of the incident area. Yakima County does not have a hazardous material response team (HazMat)[1].

If adequate resources are available and the Incident Commander determines the spill can be safely contained by local entities, appropriate containment measures will be undertaken to protect life and property. Clean up will be coordinated with, the City of Sunnyside, OEM, the HazMat team, Washington State Department of Ecology, and the responsible party. In the event the incident is beyond local capabilities, the scene will be secured and necessary evacuations conducted until State resources can be mobilized.

6.2.1 Responsible Party

The primary responsibility for assessing, responding to, and containing a spill or discharge falls upon the individual, agency, and/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.

[1] Benton County has at its disposal a fully-equipped HazMat team that is trained to provide an assessment of the spill, emergency public information, protective action recommendations, and containment/handling procedures. Currently, no agreement exists for Benton County HazMat to provide its services to Sunnyside (County). However, these agreements are being discussed at this time (Personal conversation, Jim Hill, Yakima Co. Office of Emergency Management, September 19, 2003).

6.2.2 Local

Within the City, the City Fire Department is responsible for recognition and identification of a spill, and then isolation. The Fire Department does not do clean-up activity, except for ammonia spills. The Sunnyside Fire Department has the functional role for fire control and suppression, emergency medical aid, and light rescue, as well as on-site coordination of hazardous material response team efforts. The City Fire Department is presently up to date on the County's hazardous materials response plan and is an active member of the County's regular hazardous materials training program.

City police are responsible for traffic control and maintaining clear access to any incident site within the City itself, whereas this role will fall to the County Sheriff's office for those events occurring outside the City limits. Another primary responsibility of the police is to provide any necessary emergency notification to the public (e.g. evacuation notice). The City police staff is also presently up to date on the County's hazardous materials response plan and is an active member of the County's regular training program.

6.2.3 State and Federal

Washington State agencies will provide support to local government and response teams through coordinated efforts with the State's Emergency Management Division (EMD). The Washington State Department of Ecology (WaDOE) is the lead agency within the state for environmental pollution response. Once called to respond, it has authority as principal on-site coordinator (OSC) and is in-charge for most spills occurring within state jurisdiction. In the event of a spill occurring on a state highway or part of the state where the local jurisdiction has not taken responsibility for hazmat incidents, Ecology coordinates with the Washington State Patrol, which assumes primary responsibility as lead command agency, while Ecology acts as the lead agency responsible for clean-up activities.

The State of Washington's spill response is organized and managed under an Incident Command System (ICS). The ICS will operate using a Unified Command Structure involving representatives of the Washington State Patrol, Ecology, federal government, 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 individual agencies relinquish or surrender their authority through participation. Emergency situations, however, may require some actions to be taken outside of the normal permitting process.

As needed, the following state and federal agencies may be contacted for support depending on the individual characteristics of the spill:

State Agencies	Federal Agencies
Department of Transportation	U.S. Environmental Protection Agency
Department of Health	U.S. Department of Agriculture
Department of Fisheries and Wildlife	U.S. Fish and Wildlife
Washington State Patrol	U.S. Department of Energy
Department of Labor and Industries	

A schematic of the coordination effort between local, state and federal agencies is shown in Exhibit 6-1 (at end of this section).

6.3 Additional Support for Local Spill Response

Depending on the magnitude of the spill event, numerous organizations at all levels of government, some voluntary organizations, and the private sector, can have a role in spill response and cleanup. The County's plan mentioned above describes the relationship and roles of these organizations based on the required level of response. Listed below are a few of the organizations which might be, depending on the size and nature of the release, called in to assist in a spill response within the City's wellhead protection area.

6.3.1 Department of Ecology

A Spill Response Team is available through the Washington State Department of Ecology and is staffed by 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. The team coordinates its actions with other state, federal, and local agencies.

6.3.2 Local Response Team

Under the State's EMD, a Local Response Team (LRT) may be created consisting of state and local government agencies, industry personnel, academic organizations, and other private interests which may assist the on-site coordinator (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.

6.3.3 Natural Resource Damage Assessment Team

The state Natural Resource Damage Assessment (NRDA team consists of representatives from Ecology, the Department of Fish and Wildlife (DFW), the Parks and Recreation Commission, the Department of Natural Resources (DNR), CTED, and the Department of Health (DOH). In the event of a major pollution event which 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.

6.3.4 U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency administers two important field response programs: (1) the Technical Assistance Team (TAT); and (2) the Environmental Response Team (ERT). The TAT is a contractor-based operation 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 on site coordinator needs to be on scene.

The U.S. EPA also offers the Environmental Response Team (ERT). Based in Edison, New Jersey, the ERT 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.

6.4 Contact Names and Telephone Numbers

Notification of any spill is initiated by calling 9-1-1. Following a release, initial response will be directed by dispatching personnel from the City Fire Department, along with City or County law enforcement. Subsequently, notification will proceed with the County's Office of Emergency Management (OEM) and the Emergency Operation Center (EOC), as required.

The list of following names and contact telephone numbers may be used in support of emergency response:

Table 6-1
List of Spill Response Contacts

Agency/Department	Contact and Telephone Number
Yakima Public Safety Communications Center	911
Yakima Valley Office of Emergency Management	(509)574-1900
City of Sunnyside Fire Department (Non-emergency)	(509)837-3999
State Emergency Management Division	(800)258-5990
State Department of Ecology 24-hour Emergency Spill Response	(509)456-2926
U.S. EPA (Seattle)	(206)553-1263

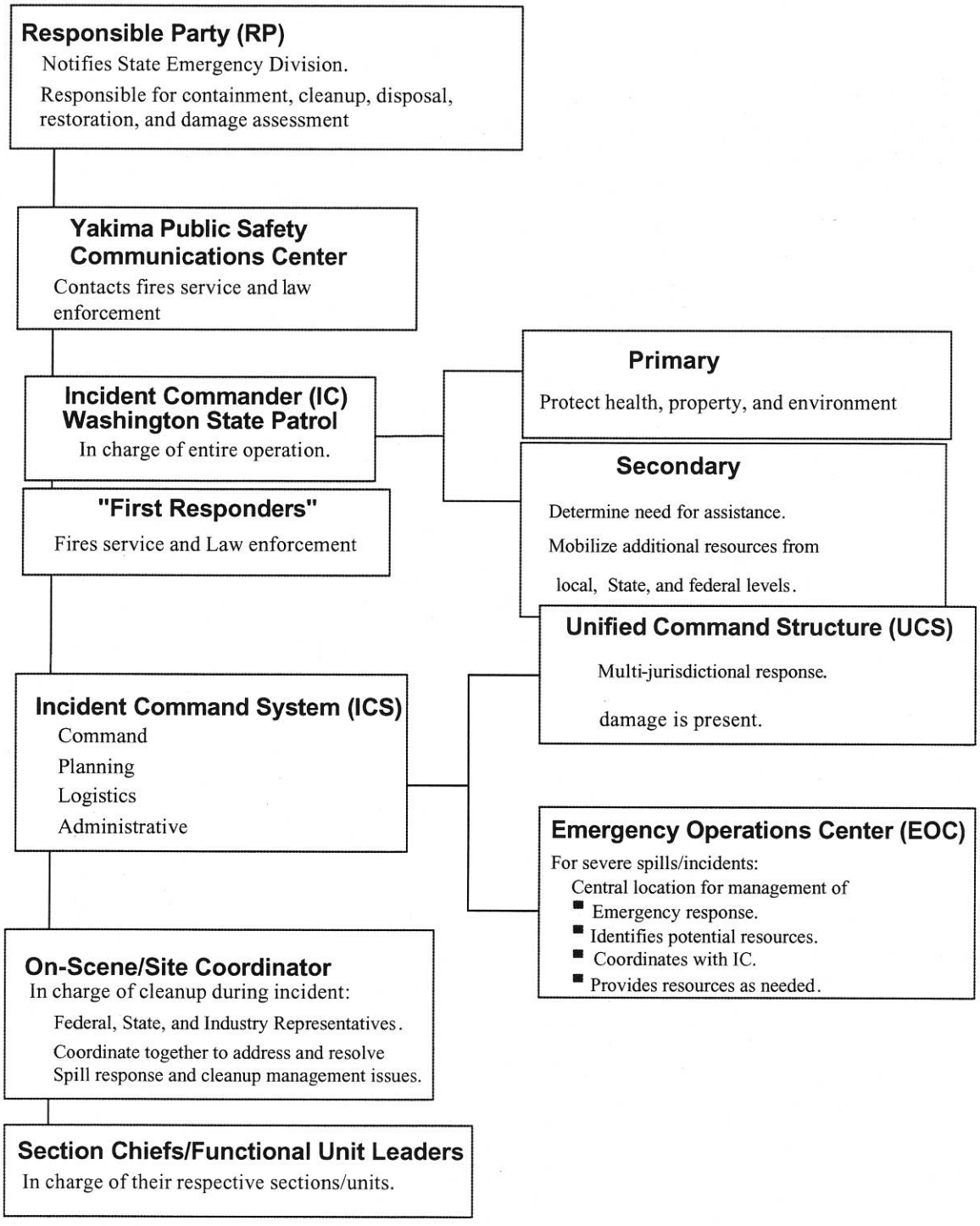


Exhibit 6-1
Outline of Spill Response System
(General)

Section 7
Contingency Planning

7.1 Introduction

Following provision in the 1986 Amendments to the Safe Drinking Water Act (SDWA), all public water systems are to develop contingency plans "*...for the location and provisions of alternate drinking water supplies for each public water system in the event of well or wellfield contamination.*" Contingency plans are considered important because, even with careful planning, unforeseen incidents can occur. A proper contingency plan helps ensure that the City is prepared to respond to an emergency situation. Equally important is the fact that, should the City not be able to identify economically feasible alternatives for its supply, the protection plan and management strategies should be much more stringent.

The Wellhead Protection planning process requires an expanded contingency planning effort. Under the current WHP planning process, the City is required to:

- Identify existing or potential interties with other public water systems and evaluation of the ability to deliver water assuming the loss of the largest well/wellfield.
- Identify future potential sources of drinking water and a description of quality assurances and control methods to be applied to ensure protection of water quality prior to utilization of potential sources as a drinking water supply.
- Evaluate current procedures and the development of recommendations on contingency plans for emergency events.
- Maintain a current list of appropriate emergency phone numbers (addressed in Section 6).

The purpose of this section is to address each of the former and current contingency plan requirements based on existing guidance. The overall contingency plan developed for the City has both emergency (short-term) and long-term alternatives.

7.2 Existing Water Source

Well No. 9 represents approximately 25% of the City's production capacity and approximately 33% of its annual production in 2002. The loss of this well, even for a short period of time, would necessitate a series of dramatic changes in system operation and public use patterns. If a serious problem were identified, the City would be prepared to enact a stringent water use restriction policy and institute an extensive public education program to increase customer awareness of the problem and reduce overall water use. It should also be noted that the replacement of any of the City's present wells would not be easy or inexpensive.

7.3 Existing and Potential Interties

Interties between neighboring water purveyors are increasingly being supported by the waterworks industry as a method to improve the reliability of water systems. However, due to its location, Sunnyside does not have existing interties and has few opportunities for interties with neighboring systems. The City of Sunnyside does not have any plans to develop interties in the near future.

7.4 Potential Contaminants

The following discussion presents scenarios that would require the enactment of contingency procedures.

7.4.1 Detection of Volatile Organic Compounds and Synthetic Organic Compounds

The detection of a VOC/SOC contaminant in a well could result in permanent loss of a source. If the City were to lose a well due to contamination, it could take a considerable amount of time to complete the work, and resolve the issues necessary to site and drill a new well.

7.4.2 Chemical Spill

The most likely scenario for a chemical spill would be a chemical transporting vehicle releasing its cargo due to an accident. However, it is also possible that a chemical spill could happen. A chemical spill does have the potential to contaminate groundwater especially for those wells utilizing the unconsolidated aquifer in the overburden (Wells No. 5 and 8). Probability of a chemical spill with subsequent contamination of groundwater in the Saddle Mountain and Wanapum Basalt (Wells No. 4A, 6, 7, 9) is low in Sunnyside. The City's emergency response procedures is described in Section 6. In addition, the BMPs presented under the management plan (Section 8) should be adopted to prevent chemical spills.

7.4.3 Other Factors

Another factor that may require contingency procedures is related to impacts of the aquifer material on the water quality produced by the well. At times, geologic material may be drawn into the well due to well-screen failure. This problem can be addressed with changes in the pumping capacity or repairs to the well. "Sanding" has occurred in Well No. 3 and 4.

7.5 Water Supply Replacement Options

The primary concern of a water supplier when faced with a disruption in service is providing an uncontaminated supply of water to the customer. Depending on the nature of the problem, an alternative source may be required for a number of hours, days, weeks, or, in a worst-case situation, permanently. Emergency and short-term options include the steps required for immediate provision of water for periods of days, weeks, or months (e.g up to three months). Emergency options are likely to be employed in situations where a near or total loss of the groundwater supply is experienced, for example, if the storage and distribution system must be flushed due to one or more wells producing contaminated water. Emergency options are likely to be employed while appropriate long-term solutions are being evaluated during the loss or contamination of one or more wells. Long-term options for permanent changes to the water supply system may be implemented over a period of more than 3 months to 3 years. These options may be implemented separately or together depending on the situation.

7.5.1 Short-term Contingency Plan

The short-term time frame (less than 3 months) will probably not allow the drilling and/or development of additional wells at a level to achieve a total replacement of impacted well(s). The following options are identified as suitable for short-term contingency planning.

Use of Other Wells

The short-term contingency plan is highly dependent on production of water from the City's other wells that are not impacted. This option may require the use of one or more of the other contingency options discussed below depending on which well(s) are off-line and how much demand can be met by the other operating wells. Should an event require that all of the City's production be limited to one or two wells, extreme care must be taken to closely monitor the water quality of the production wells in use.

Tank Trucks

Alternative water supplies can be brought in by tank truck. Careful attention should be given to disinfecting the tanks to avoid bacterial contamination. If this option is selected, a source of sanitary containers should be identified so that customers are not required to use their own potentially contaminated receptacles.

Conservation/Curtailment

In an emergency situation requiring a complete or partial shutoff of the wells, non-essential water uses must be restricted, preferably by voluntary conservation measures. Users can reduce consumption by limiting activities such as industrial processes, landscape watering, laundry, bathing, washing cars, etc.

In March 1994 DOH promulgated requirements that municipalities develop conservation plans as part of any new Water System Plan. The City has implemented a conservation plan as part of the update to WSP to educate consumers about conservation techniques. This is included in the 2003 Water System Plan prepared in conjunction with this WHPP.

Bottled Water

In an emergency situation that requires the wells to be shut off, bottled water is considered the most accessible supplement for drinking water supply. In many cases, bottled water for drinking supply is immediately available in either stores or a bottling facility. With the City of Sunnyside located close to the City of Yakima and the Tri-Cities, along with other smaller communities including Toppenish, Granger, Grandview, and Prosser, it is feasible that a short supply of bottled water could be available for a short term. However, this option is considered a very short-term contingency for drinking water supplement only.

City Personnel Contacts

Table 7-1 lists the city's emergency contact names and numbers in the event that any of the options in this section are enacted.

Table 7-1
Contact Information for City Staff

Staff Name	Position	Work Phone
Ken Ott	Public Works Superintendent	(509) 836-6360
Jim Bridges	City Engineer	(509) 836-6352

7.5.2 Long-Term Contingency Plans

The long-term plan presumes that one or more of the City's wells will be lost for a period of up to three years. Long-term water replacement options differ from emergency options primarily in the amount of time available to evaluate the various alternatives is longer, permitting more extensive analysis and the considerations of future needs and other factors prior to a decision being made. As a result, the range of alternatives which are viable may be larger.

General Ground Water Exploration and Drilling New Wells

If there exists an untapped supply of groundwater in the form of a separated aquifer or a portion of the contaminated aquifer that is upgradient or cross gradient and is uncontaminated, it may be feasible for Sunnyside to drill new wells.

The City may drill several exploratory wells to identify potential groundwater resources to the north of the City upgradient of existing and historical wells and potential contaminant sources.

The cost of this option would be moderately high as any new site will require the development of production wells and pumping facilities, and these sites may be located at a significant distance from the City's existing infrastructure. The City may decide to transfer water rights as has been done previously or attempt to obtain new water rights, which will be significantly more difficult.

It should be kept in mind that the capture zone geometry of the wells are dependent on localized ground water gradients. Hence, relocation of a well a short distance away can dramatically alter the capture zone orientation. The relative cost of this alternative depends on the ability of the target aquifer to yield suitable quantities of groundwater. This option would involve a moderate amount of capital expenditure for test drilling, production well drilling, potential land acquisition costs, and infrastructure costs.

Treatment

Treatment technologies can also be applied to the water supply system. Treatment method selection depends upon a number of factors, including the chemical characteristics of the contaminants, the extent and severity of the contamination, the treatment removal objective, and the financial and technical resources available. The basic types of treatment technologies for organic chemicals in groundwater are air stripping, activated carbon, and biological treatment. Chemical precipitation is used for removal of inorganic chemicals. For short-term situations, many types of treatment systems can be supplied as a mobile unit.

Treating water for removal of inorganic and organic chemicals can be expensive. The capital investment for the treatment units along with cost of chemicals used to remove inorganic compounds can amount to a significant expenditure. In some cases, disposal of sludge generated by the treatment processes can be a difficult and expensive venture, and customer perception may not allow for use of the water even after treatment.

Treatment is probably not a high priority for Sunnyside because of high capital costs and other issues related to treating contaminated water. In general, treatment of a contaminated water supply should be considered as a last-resort option.

Permanent Replacement Contingency Plan

In the event that the City's supply is lost to production for a period longer than 3 years, it is probable that the well would be permanently lost. At this point, it would be advisable to seek permanent transfer of the water certificate or permit to appropriate supplies developed under the short- or long-term plans. In addition, the City should plan to develop additional ground water supplies both inside and outside the existing service area.

Section 8
Recommended Management Practices

The previous chapters document the City of Sunnyside's potential threats of contamination and define the wellhead protection areas. This section includes recommend additional measures for protecting local groundwater supplies. The City may wish to implement all or a portion of the recommendations depending upon available funding, time, or other concerns.

The WHPA defined in Section 4 lies primarily within the City's boundaries; however, portions exist within County jurisdiction (primarily near Well No. 9 near the airport). This complicates some of the recommendations outlined below due to the need to coordinate two public entities that have different responsibilities for land use planning, permitting, stormwater management, and sewage collection programs in the area. Therefore, the WHPP will be achieved through a cooperative effort between the City and County, and any other entities which regulate land use in the area.

At the end of the section, a table is included which lists general cost and implementation considerations for each of the recommendations.

8.1 Regulatory Management Recommendations

Recommendation 1: Designation of the WHPA as special protection area

The identification and designation of the wellhead protection areas (WHPAs) are fundamental to the development of all other management strategies. With the designation, the City will be able to direct their focus on the potential contaminant sources that are of the greatest threat to their ground water supplies. It also provides a defensible stance if the City is to develop special permitting or regulatory requirements within the WHPAs. These WHPAs are:

- One-year time of travel zone
- One- to five-year time of travel zone; and
- Five- to ten-year time of travel zone

The City should work with legal counsel and planning to develop legal descriptions designating the WHPAs based upon the delineations. These WHPAs will be the building blocks upon which all other management strategies will rely.

The City should coordinate with Yakima County on the delineation of the protection zones as found in the County's Critical Aquifer Resource Area (CARA). Although CARAs are intended to consider the *entire* aquifer recharge area, the capture zones as delineated in wellhead protection plans often are adopted as part of the CARA assessment. The City should strive to

have the WHPA outside City limits designated by the County as aquifer recharge area under the Resource Land and Critical Areas Designation amendment. The City should designate the wellhead protection areas as sensitive areas by creating a City ordinance for the portion of the WHPA within the City limits. A joint coordination with Yakima County will have to be made to designate the entire area. The sensitive area designation will justify subsequent wellhead protection activities, monitoring activities, and requirements developed within the WHPA, along with development of funding mechanisms for the maintenance and updating of the wellhead protection areas.

Recommendation 2: Develop Regulatory Management Tools to Protect WHPA

The City can revise their municipal code to give authority to Public Works Director (Planning Department or other selected City agency) to protect ground water associated with the WHPAs. The appropriate City Department can adopt the WHPP within the City of Sunnyside Administrative Code and use engineering standards and administration as a regulatory control to protect the WHPAs. The City regulates a variety of development activities that can affect ground water based upon building, health, fire, and sanitary codes. Through permitting controls and design and construction standards. Specific recommendations are listed below.

Conditional use permits (CUP). During the facility permitting process, any requests for CUPs within the WHPA will trigger automatic notification to the City Public Works department, and appropriate investigation into the nature of the business will be assessed.

Site plan approval process. The City can use its existing site plan approval process to determine if the proposed development is compatible with existing land use, including the overlay zoning (see Recommendation 1). This process will also allow the Public Works Department to review and enforce design and construction standards that may apply if the development is within the WHPAs (see below). The City may also develop special permitting requirements for USTs such as removal of existing residential USTs and prohibition of all new USTs (unless they have appropriate safeguards) within the WHPAs.

Design and construction standards. Design and construction standards can be used to ensure that new buildings or structures placed within WHPAs are designed and constructed in such a manner as to reduce their threat to the WHPAs. Public Works Department can review spill control best management practices (BMPs) for facilities within the WHPAs to minimize the potential for contamination. The City may prepare design standards for spill containment barriers and other BMPs such as locating emergency spill kits and equipment, use of secondary containers, etc. The City may also develop specific construction standards for USTs including leak testing and construction standards.

Recommendation 3: Manage sewer system in WHPA

The sewer system (both sanitary and septic) within the WHPA can have a significant impact on ground water quality. The City should develop a program to minimize the potential impacts that the sewer system may have in the WHPA. Among the recommended procedures are:

- Develop an emergency response plan for sewer force main breaks within the WHPA
- Develop routine leak detection procedures for sewer lines within the WHPA and an annual review of the programs to reduce these leaks.
- Request that sewer utility use "leak proof" piping for new sewer construction within the WHPA, and where practical replace older lines to reduce leakage.
- The City may require that occupied buildings with old or failing septic systems which are located within wellhead protection areas and are within a specific distance from a sanitary sewer line be connected to the sanitary sewer system, in accordance with applicable city sewer ordinance.

8.2 City Planning and Coordination Recommendations

Recommendation 4: Establish formal communications and information regarding wellhead protection with first responders, other local and State agencies, and industry in the area

The City should develop appropriate lines of communication and appropriate information about the WHPA to first responders (local fire and police departments). The City should direct the fire department to include an assessment of the presence of potentially hazardous materials as part of any routine periodic inspections of facilities within the City.

The City should provide copies of the wellhead protection plan to various County and State agencies including, Yakima County Office of Emergency Management, Yakima County Health Department, Yakima County Planning, Washington State Department of Health, and Department of Ecology.

The City should communicate the locations of the WHPA, explain the basic WHPS philosophy and address specific WHP concerns to industrial and commercial site owners in the City and especially within the WHPA boundaries.

Recommendation 5: Maintain and upgrade Sunnyside WHPP

The wellhead protection plan is designed to be a continuing management activity to be adapted to the City's needs. Therefore, the tasks outlined in this plan provide a general direction, but will periodically need to be updated and refined. On an annual or bi-annual basis, the City should review the wellhead protection activities and make recommendations to the City for additional activities or changes to the plan.

As part of the WHPP, the City is required to maintain and upgrade the contaminant inventory at least every two years. The City may find it advantageous to develop a geographic information system (GIS) to manage and update the inventory. As new potential contaminant sources are identified, the City would notify the potential sources as well as the agency having regulatory responsibility. The database would be used to maintain documentation of notifications.

Recommendation 6: Conduct a "Level 2" Risk Assessment

The "Level 2" assessment is intended as a comprehensive approach to more accurately rank susceptibility to contamination, including investigating previous ground water contamination issues. The assessment could include review of additional data including:

- Review additional well logs and perform a more comprehensive hydrogeologic review to better define confining layers and connectivity of aquifer units;
- Reviewing site-specific water quality data from regulated Ecology facility/sites to better define ground water quality conditions in the aquifer units used by the City;
- Reviewing status of on-going clean-ups; the City should contact owners of known contaminated sites noted in the hazard index to ascertain the progress of site cleanup projects. The City should monitor these activities to verify that cleanup is proceeding at an acceptable pace.

The more detailed information provides the City additional basis for siting future wells should their existing wells be contaminated or become decommissioned in the future. It allows the City to further characterize areas where water quality may already be impacted and which may threaten their existing water supplies.

8.3 Public Education and Outreach

Recommendation 7: Develop a public education and outreach program

The City should seek to educate the public regarding the presence of the WHPA on a continuing basis, where the focus is to increase awareness of the environmental sensitivity of the ground water system. The public education and outreach program an include the following:

- Develop a wellhead protection pamphlet or coordinate outreach efforts by incorporating wellhead protection program efforts and updates, and WHPA map into the City's Consumer Confidence Report.
- Post the WHPA map for public view
- Promote and coordinate education programs concerning the proper use of fertilizer, herbicides, and pesticides in lawn and garden maintenance. Promote and coordinate public education programs concerning underground storage tank hazards, leak detection methods, and proper removal and closure procedures.

- The City should inventory decommissioned, abandoned, or unused wells within the WHPA; owners of these wells should be informed about proper decommissioning procedures.
- Join Groundwater Guardian program. This free program assists communities in their efforts to foster groundwater awareness and protection and rewards communities for successful participation.
- Share sources of publication materials and website with local irrigation districts, schools, co-op extension services, etc. Table 8-1 lists useful websites for this purpose.

Table 8-1
Public Education and Outreach Program Websites

Website	Address	Description of Materials	Agency
Wellhead Protection	www.epa.gov/OGWDW/whpnp.html	• Link to federal wellhead programs • Link to Water for Kids	USEPA
Groundwater Primer	www.epa.gov/seahome/groundwater/src/title.htm	• Guide to groundwater facts • Introduction to the hydrologic cycle • Water protection information	USEPA
Water Science for Schools	http://ga.water.usgs.gov/edu/index.html	Interactive teaching tools about water use, the hydrologic cycle, and groundwater	USGS
Groundwater Foundation	www.groundwater.org	• Public education materials for groundwater protection • Groundwater Guardian Program	Groundwater Foundation
Source Water Assessment Program	www.doh.wa.gov/ehp/dw/Our_Main_Pages/swap.htm	• Information about drinking water sources and potential sources of pollution • Information about best management practices and technical assistance for outreach and public education efforts	Washington State Dept. of Health
Water Education for Teachers	http://www.ecy.wa.gov/news/ee/curricul.html	K-12 activity guides on water availability and water quality issues, such as the hydraulic cycle, aquatic ecosystem health, waterborne disease, and pollution.	Washington State Dept. of Ecology
Watch Over Washington (WOW)	http://apps.ecy.wa.gov/wow/	A resource for volunteer surface water monitoring in Washington	Washington State Dept. of Ecology
Water Quality Program	www.ecy.wa.gov/programs/wq/wqhome.html	Links to surface and groundwater protection programs and information.	Washington State Dept. of Ecology
Surface Water Information Page	http://water.usgs.gov/osw/	Surface water information programs.	USGS
EnviroFacts Warehouse	www.epa.gov/enviro/html/qmr.html	A database with access to information regarding waste generators, potential pollution sources, and water utility ICR data.	USEPA

8.4 Implementation Considerations

A summary of the recommendations, along with estimates of level of effort and implementation costs, is shown in Table 8-2.

Table 8-2
City of Sunnyside
Wellhead Protection Implementation Considerations

Recommendation	Primary Elements	Staff Resources Required(1)	Initial Implementation Cost(2)
1. Designation of the WHPA as special protection area	• Work with County • City ordinance creating a sensitive area	Low to Medium	Low to Medium
2. Develop Regulatory Management Tools to Protect WHPAs	• Ordinance requiring use of BMPs • Review appropriate BMPs	Medium to High	Medium to High
3. Develop protection against potential impacts from sewer system in WHPA	• Emergency response procedures for sewer line breaks • Leak detection program for sewers • Require septic systems connect to sanitary sewer system	Medium	Medium
4. Establish formal communications and information regarding wellhead protection with first responders and other local and State agencies	• Communication program with first responders • Fire Dept. include hazardous waste review as part of annual inspections • Distribute WHPP to local/state agencies	Low	Low
5. Maintain and upgrade Sunnyside WHPP	• Update management plan • Update hazard inventory	Medium	Medium
6. Conduct a "Level 2" risk assessment	• Monitoring well network and monitoring program • Collection of regular ground water samples	High	Medium to High
8. Develop a public education and outreach program	• Public education • Share materials • Staff time/training • Street signs	Medium	Medium

(1) Low = Need ¼ to ¾ fulltime equivalent (FTE) to implement; Medium = Need 1-2 FTE to implement. High = Need > 2 FTE and/or contracted services to implement. Staffing estimates are relative and would likely be reduced if multiple actions are implemented simultaneously.

(1) In general Low = Less than $10,000. Medium = Between $10,000 and $100,000. High = Greater than $100,000

City of SUNNYSIDE WASHINGTON

12

Cross-Connection Control Report

HLA Engineering and Land Surveying, Inc.

Cross-Connection Control Plan

For

City of Sunnyside

Prepared By: Backflow Management Inc.

Cross-Connection Control Program Plan
For
The City of Sunnyside

The City of Sunnyside, PWS ID # 854003, hereinafter referred to as "the City", has the responsibility to protect the public water system from contamination due to cross connections. A cross connection may be defined as *"any actual or potential physical connection between a potable water line and any pipe, vessel, or machine that contains or has a probability of containing a non-potable gas or liquid, such that it is possible for a non-potable gas or liquid to enter the potable water system by backflow."*

All public water systems are required to develop and implement cross-connection control (CCC) programs. The CCC requirements are contained in Washington Administrative Code (WAC) 246-290-490 of the Group A Drinking Water Regulations. The minimum required elements of a CCC program are:

1. Establishment of legal authority and program policies;
2. Evaluation of premises for cross-connection hazards;
3. Elimination and/or control of cross connections;
4. Provision of qualified personnel;
5. Inspection and testing of backflow preventers;
6. Quality control of testing process;
7. Response to backflow incidents;
8. Public education for consumers;
9. Record keeping for CCC program; and
10. Special requirements for reclaimed water use.

Other CCC program requirements include:

1. Coordination with the Authority Having Jurisdiction (AHJ), i.e., the local building or plumbing official regarding CCC activities;
2. Prohibition of the return of used water into the public water system (PWS) distribution system; and
3. Inclusion of a written CCC program in a Water System Plan (WSP).

Note: Throughout the CCC program plan the term *customer* is used. *Customer* as used herein means the property owner and/or occupant of the premises served by the PWS (i.e., whoever interfaces with the PWS regarding water service). Also, unless otherwise defined, all CCC-related terms used in this example program have the same definitions as those contained in WAC 246-290-010 of the Washington State Drinking Water Regulations.

B. Program Objectives

The objectives of the CCC program are to:

1. Reasonably reduce the risk of contamination of the public water distribution system; and
2. Reasonably reduce the City's exposure to legal liability arising from the backflow of any contaminant originating from the customer's plumbing system and then supplied to other customers.

C. Summary of Program Decisions

The following table summarizes the major policy and program decisions adopted for The City of Sunnyside. The items in the table represent CCC program areas that have more than one acceptable approach or option.

CCC Program Decision Summary Table for The City of Sunnyside

Decision Item	Decision
1. Type of Program [General, WAC 246-290-490(2)(e)]	
a. Premises isolation only	
b. Premises isolation and in-premises protection (combination program)	*
2. Extent of Coordination with AHJ [WAC 246-290-490(2)(d)]	
a. Information exchange	*
b. Interaction	
c. Joint program	
3. Relationship with Customer [Element 1]	
a. Signed service agreement or contract	
b. Ordinance/resolution; implied service agreement	*
4. Enforcement of Corrective Action [Element 1]	
a. Rely upon shut-off of water service	*
b. Rely upon City-installed premises isolation	
5. Assessment and Re-assessment of Hazard [Element 2]	
a. By City's staff or equivalent	*
b. By cross-connection control specialist (CCS) employed by customer; report reviewed by City's CCS	
6. Location and Ownership of Premises Isolation Assembly [Element 3]	
a. On City's service line	
b. On customer's service line	*
7. CCS Option – City's Program Management [Element 4]	
a. City's staff member certified	*
b. Inter-agency agreement or use other agency's CCS	
c. Contract with consultant CCS	
8. Testing of Assemblies [Element 5]	
a. By City's staff or City-employed backflow assembly tester (BAT)	
b. By customer-employed (contractor) BAT	*
9. Cost Recovery [WAC 246-290-100(4)(h) and –105(4)(p)]	
a. Borne by all customers (general water rates)	
b. Assessed to specific class (commercial meters)	
c. Each customer directly bears cost	*

D. Required Elements of Program

The drinking water regulations for Group A public water systems in Washington, WAC 246-290, require CCC programs to include certain minimum elements. The elements are listed in WAC 246-290-490(3). This section describes how the water system intends to comply with each of the required program elements. Elements are numbered the same as they appear in the WAC.

Element 1: *Adoption of a written legal instrument authorizing the establishment and implementation of a CCC program.*

The City of Sunnyside has adopted an Ordinance (Ordinance No. 2079), which authorizes the City to implement a CCC program. The Ordinance also authorizes the City to terminate water service to consumers who do not comply with the requirements. However, the primary method for protection of the distribution system will be the installation of a backflow preventer by the customer, at the customer's expense.

For customers supplied prior to the adoption of the ordinance, an implied service contract allows the City to protect the distribution system from contamination through a City-installed backflow preventer on a customer's service at the customer's expense

Element 2: *Development and implementation of procedures and schedules for evaluating new and existing service connections to assess the degree of hazard.*

Initial Cross-Connection Hazard Surveys

The procedures for evaluating the backflow prevention requirements for new and existing customers are as follows:

1. For all ***new non-residential services***, the City will require that the customer submit with the application for water service to an evaluation by a DOH-certified cross-connection control specialist (CCS) employed by the City, of the hazard posed by the proposed plumbing system, with recommendations for the installation at the meter of either a double-check valve assembly (DCVA) or a reduced-pressure principle backflow assembly (RPBA) or commensurate in-premises backflow protection.

   As an alternative to the above requirement for a survey by a CCS, the customer may agree to install an approved air gap (AG) or RPBA for premises isolation as a condition of service.

2. For all ***new residential services***, the City will require that the customer submit with the application for water service a completed "Water Use Questionnaire". If the customer's questionnaire indicates special plumbing, such as a lawn sprinkler system, or hazardous water use on the premises, the customer shall submit to the City to an evaluation by a DOH-certified CCS employed by the City, of the hazard posed by the special plumbing system, with recommendations for the installation at the meter of either a DCVA or an RPBA or

commensurate in-premises protection.

As an alternative to the above requirement for a survey by a DOH-certified CCS, the City, at his/her discretion, may specify the backflow preventer required to be installed as a condition of service.

3. For all ***existing non-residential services***, the City will require the customer to submit to an evaluation by a DOH-certified CCS employed by the City, of the hazard posed by the plumbing system, with recommendations for the installation at the meter of either a DCVA or an RPBA or commensurate in-premises backflow preventers.

   As an alternative to the above requirement for a survey by a DOH-certified CCS, the customer may agree to install an AG or RPBA for premises isolation within 90 days of notification by the City or an alternate time period acceptable to the City.

4. For all ***existing residential services***, the City will require the customer to submit to the City, within four months of notification, a completed "Water Use Questionnaire." If the customer's reply indicates special plumbing or water use on the premises, the customer shall submit to an evaluation by a DOH-certified CCS employed by the City of the hazard posed to the water system by the customer's plumbing system, with recommendations for the installation at the meter of either a DCVA or an RPBA or commensurate in-premises backflow preventers.

   As an alternative to the above requirement for a survey by a CCS, the City may specify the backflow preventer required to be installed as a condition of service. The City's CCS will provide guidance on the type of backflow preventer to be installed.

5. For all existing services, should the customer fail to supply the required information for a hazard assessment or fail to submit a completed "Water Use Questionnaire," the City may require the installation of an RPBA for premises isolation, or take other such actions consistent with the previously stated policies and bill the customer for the associated costs.

Cross-Connection Hazard Survey Schedule for Initial Hazard Assessments

The schedule for initial hazard assessment is outlined in the following table. The schedule starts from the date the CCC program is established.

Initial Assessment Task	Schedule
Assessment of all new connections	At time of application for water service
Identification and assessment of high-hazard premises which are listed on Table 9 of Washington Administrative Code (WAC) 246-290-490	Within nine months
Identification and assessment of hazardous premises supplemental to Table 9 of WAC 246-290-490	Within 12 months
Identification of residential connections with special plumbing facilities and/or water use on the premises	Within 15 months

Cross-Connection Hazard Survey Schedule for Subsequent Hazard Re-Assessments

For subsequent cross-connection hazard surveys, procedures for evaluating the backflow prevention requirements are:

1. For **residential services,** the City will require the customer to submit to the City, within two months of City notification, a completed "Water Use Questionnaire." The procedure used for evaluating the hazard re-assessment and the potential change in the required backflow prevention will be the same as used for the initial hazard assessment.
2. For all **non-residential services**, the City will require the customer to submit to a hazard re-assessment within two months of City notification.

The frequency of hazard re-assessments will be as shown in the table below:

Type of Service	Frequency of Re-Evaluation
Any services with reduced-pressure principle backflow assembly (RPBA) installed for premises isolation	None required as long as the RPBA passes annual tests and inspections
Commercial services with double-check valve assembly (DCVA) installed for premises isolation	Every two years and upon change in use or ownership
Commercial services when City relies upon in-premises protection	Every two years and upon change in use, ownership, or plumbing system
Residential services with special plumbing where the City relies upon compliance with Uniform Plumbing Code (UPC)	Every 2-3 years (questionnaire)
Residential services with DCVA installed for premises isolation	Every 4-5 years (questionnaire)

The City will inform the customer that the City's survey of a customer's premises (whether by a representative of the City or through the evaluation of a questionnaire completed by the customer) is for the sole purpose of establishing the City's minimum requirements for the protection of the public water supply system, and that the required backflow protection will be commensurate with the City's assessment of the degree of hazard.

The City will also inform the customer or any regulatory agencies that the City's survey, requirements for the installation of backflow prevention assemblies, lack of requirements for the installation of backflow prevention assemblies, or other actions by the City's personnel or agent do not constitute an approval of the customer's plumbing system or an assurance to the customer or any regulatory agency of the absence of cross connections.

Element 3: *Development and implementation of procedures and schedules for elimination and/or control of cross-connections.*

Backflow Preventer Requirements

The following service policy shall apply to all new and existing customers:

1. The City will require that water service to all **non-residential customers** be isolated at the meter by a DOH-approved DCVA or RPBA acceptable to the City. All high-hazard connections of the type described in Table 9 of WAC 246-290-490 shall be isolated with an RPBA.

   In lieu of isolation with a DCVA, other non-residential customers, with the concurrence of the City's CCS, may install in-premises protection commensurate with the degree of hazard, as determined by the City's CCS.

2. The City will require all **residential customers** with facilities of the type described in Table 9 of WAC 246-290-490 to be isolated with an RPBA. All other residential customers with special plumbing or water use on the premises will be isolated with a DCVA. "Special plumbing" includes, but is not limited to, the following:

   a. A lawn irrigation system;
   b. A solar heating system;
   c. An auxiliary source of supply, e.g., a well or creek;
   d. Piping for livestock watering, hobby farming, etc.;
   e. Residential fire sprinkler system; and
   f. Property containing a small boat moorage.

3. Residential customers not required to be isolated with an RPBA may install in-premises protection in accordance with the Uniform Plumbing Code (UPC) in lieu of isolation with a DCVA.

4. For all customers, a required premises isolation DCVA or RPBA shall be:

    - Purchased and installed by the customer (at the customer's expense) immediately downstream of the water meter in accordance with the City's standards described hereinafter; and
    - Maintained, tested, and inspected in accordance with the City's standards described hereinafter.

    For new customers, the City will not turn on water (except for testing purposes) at the meter until the customer complies with the above requirements.

    The failure of the customer to comply with the City's installation and maintenance requirements shall constitute a breach of contract by the customer. The City may then proceed with corrective action provisions stipulated in the contract.

5. **Approved Backflow Preventers and Installation**

    All backflow preventers relied upon by the City to protect the public water system shall meet the definition of "approved backflow preventer" as contained in WAC 246-290-010. The City will obtain and maintain a current list of assemblies approved for installation in Washington State from the DOH Office of Drinking Water.

    All backflow preventers will be installed in:

    - The orientation for which they are approved;
    - A manner and location that facilitates their proper operation, maintenance, and testing or inspection;
    - A manner that will protect them from weather-related conditions such as flooding and freezing; and
    - Compliance with applicable safety regulations.

Installation standards contained in the most recently published edition of the Pacific Northwest Section, American Water Works Association (PNWS-AWWA) *CCC Manual* or the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research (USCFCCCHR) *CCC Manual* shall be followed unless the manufacturer's requirements are more stringent.

The City has no regulatory responsibility or authority over the installation and operation of the customer's plumbing system. The customer is solely responsible for compliance with all applicable regulations and for prevention of contamination of his plumbing system from sources within his/her premises. Any action taken by the City to survey plumbing, inspect or test backflow prevention assemblies, or to require premises isolation (installation of DCVA or RPBA on service) is solely for the purposes of reducing the risk of contamination of the City's distribution system.

The City will inform the customer that any action taken by the City shall not be construed by the customer as guidance on the safety or reliability of the customer's plumbing system. The City will not provide advice to the customer on the design and installation of plumbing other than through the general public education program discussed in Element 8.

Except for easements containing the City's distribution system, the City will not undertake work on the customer's premises.

8. Schedule for Installation of Backflow Preventers

The following table shows the schedule that the City will follow for installation of backflow preventers when they are required (based on the hazard evaluation).

Type of Service	Schedule
New connections with cross-connection hazards	Before service is initiated
Existing connections with Table 9-type hazards and other high cross-connection hazards	Within 90 days after notification
Existing connections with other than Table 9 of WAC 246-290-490 or high cross-connection hazards	Within 180 days after notification (suggested)
Existing fire protection systems using chemicals or supplied by unapproved auxiliary water source	Within 90 days after notification
Existing fire protection systems not using chemicals and supplied by City's water	Within 1 year after notification (suggested)

The City may consider granting an extension of time for installation of backflow preventer for an existing connection if requested by the premises owner.

Element 4: *Provision of qualified personnel, including at least one person certified as a CCS, to develop and implement the CCC program.*

1. **Program Administration:** The responsibility for administration of the CCC Program rests with the City. General policy direction and risk management decisions are established by the City council. The City will employ or have on staff at least one person certified by DOH as a CCS to develop and implement the CCC program. As an alternative, or when no staff or employees are properly qualified, the City may retain a DOH-certified CCS on contract to provide the necessary expertise and services.

2. The following cross-connection related tasks will be performed by or under the direction of the City's certified CCS (on staff or under contract):

    - Preparation of and recommendations regarding changes to the CCC program;
    - Performance of and/or reviews of CCC hazard evaluations;
    - Recommendations on the type of backflow preventer to be installed;
    - Recommendations on schedules for retrofitting of backflow preventers;
    - Inspections of backflow preventers for proper application and installation;
    - Reviews of backflow preventer inspection and test reports;
    - Reviews of backflow testing quality control information;
    - Recommendations and/or the granting of exceptions to mandatory premises isolation;
    - Participation in or cooperation with other water utility staff in the investigation of backflow incidents and other water quality problems;
    - Completion of Backflow Incident Reports; and
    - Completion of CCC Activity and Program Summary Reports.

3. The City may delegate other CCC program activities to other personnel who are not certified CCSs, including clerical support staff. These activities include:

    - Administration of paperwork associated with service agreements;
    - Mailing, collecting, and initial screening of hazard evaluation/water use questionnaires;
    - Mailing of assembly testing notices;
    - Receiving and screening of assembly testing reports;
    - CCC program database administration and record keeping;
    - Dissemination of public education material; and
    - Assisting tasks associated with coordination with the AHJ.

Element 5: *Development and implementation of procedures to ensure that approved backflow preventers are inspected and/or tested (as applicable).*

1. Inspection and Testing of Backflow Preventers

All backflow preventers that the City relies upon for protection of the water system will be subject to inspection and, if applicable, testing. This includes backflow preventers installed for in-premises protection that the City relies upon for protection of the water systems.

Inspection and testing of backflow preventers will be as follows:

- The City's DOH-certified CCS will inspect backflow preventers for proper application (i.e., to ensure that the preventer installed is commensurate with the assessed degree of hazard).
- Either a DOH-certified CCS or backflow assembly tester (BAT) will perform inspections of backflow preventers for correct installation.
- A DOH-certified backflow assembly tester will test all assemblies relied upon by the City to protect the public water system.

2. Frequency of Inspection and Testing

Inspection and testing of backflow preventers will be conducted:

- At the time of installation;
- Annually after installation;
- After a backflow incident; and
- After repair, reinstallation, relocation, or re-plumbing.

The City may require a backflow preventer to be inspected and/or tested more frequently than once a year, when it protects against a high-health hazard or when it repeatedly fails tests or inspections.

3. Responsibility for Inspection and Testing

The City will be responsible for inspection and testing of all City-owned backflow preventers.

The City will require the customer to be responsible for inspection and testing of backflow preventers owned by the customer. The customer shall employ, at customer expense, a DOH-certified BAT to conduct the inspection and test within the time period specified in the testing notice sent by the City. The test report shall be completed and signed by the BAT , before the due date specified by the City. The customer may request an extension of the due date for returning a

test report by submitting a written request to the City. The City may grant one extension up to 90 days.

4. Approved Test Procedures

The City will require that all assemblies relied upon to protect the public water system be tested in accordance with DOH-approved test procedures as specified in WAC 246-290-490(7)(d). Any proposal to use alternate test procedures must be approved by the City's CCS.

5. Notification of Inspection and/or Testing

The City will notify in writing all customers who own backflow preventers that are relied upon to protect the public water system to have their backflow preventer(s) inspected and/or tested. Notices will be sent out not less than 30 days before the due date of the inspection and/or test. The notice will also specify the date (up to 30 days after the due date of the inspection and/or test date) by which the inspection/test report must be received by the City. The City will modify its procedures to allow for email notification in lieu of mailed.

6. Enforcement

When a customer fails to send in the inspection/test report within 30 days after the due date specified, and the City has not approved an extension to the due date, the City will take the following enforcement action:

- The City will send a second notice giving the customer an additional 15 days to send in the inspection/test report.
- If the customer has not sent in the inspection/test report within 15 days of the due date given in the second notice, the City will send a third notice, giving the customer an additional 15 days to send in the report. The notice will also inform the customer that failure to satisfactorily respond to this notice will result in water service shut-off.
- The City will send copies of the third notice to the owner and occupants of the premises (if different from the customer) and to the AHJ.
- If the owner and/or occupants have not responded satisfactorily to the City within 10 days of the due date specified in the third notice, the City will implement water service shut-off procedures.

Element 6: *Development and implementation of a backflow prevention assembly testing quality assurance/quality control program.*

The City will maintain a list of local, DOH-certified BATs that are pre-approved by the City to perform the following activities:

- Backflow preventer inspection for proper installation; and
- Backflow assembly testing.

2. Pre-Approval Qualifications

At the beginning of the year, the first five local BATs who wish to be included on the City's pre-approved list and/or provide testing in the City's service area must apply to the City and provide the following information:

- Evidence of current DOH certification in good standing;
- Make and model of testing equipment (BAT listing only);
- Evidence of test equipment verification of accuracy and/or calibration within the past 12 months (BAT listing only);

3. Quality Assurance

The City's CCS will review within 30 days of receipt the backflow preventer inspection/test report forms submitted by the customer.

The City's CCS will provide follow up on test reports that are deficient in any way.

The City's CCS will report incidences of fraud or gross incompetence on the part of any BAT or CCS to DOH Operator Certification program staff.

Element 7: *Development and implementation (when appropriate) of procedures for responding to backflow incidents.*

1. Backflow Incident Response Plan

The City's CCS will participate in developing a backflow incident response plan that will be part of the water system's emergency response program as required by WAC 246-290-415(2). The incident response plan will include, but will not be limited to:

- Notification of affected population;
- Notification and coordination with other agencies, such as DOH, the AHJ, and the local health jurisdiction;
- Identification of the source of contamination;
- Isolation of the source of contamination and the affected area(s);

- Cleaning, flushing, and other measures to mitigate and correct the problem; and
- Apply corrective action to prevent future backflow occurrences.

2. Technical Resources

The City will use the most recently published edition of the manual, *Backflow Incident Investigation Procedures*, published by the PNWS-AWWA as a supplement to the Backflow Incident Response plan.

Element 8: *Development and implementation of a cross-connection control public education program.*

1. Customer Education

The City will distribute with water bills or some other means, at regular intervals, public education brochures to system customers. For residential customers, such brochures will describe the cross-connection hazards in homes and the recommended assemblies or devices that should be installed by the homeowner to reduce the hazard to the public water system. The education program will emphasize the responsibility of the customer in preventing the contamination of the public water supply. The City's staff will produce the public education brochures or the City will obtain brochures from:

- PNWS-AWWA;
- Spokane Regional Cross-Connection Control Committee (SRC4);
- Western Washington Cross-Connection Prevention Professionals Group (The Group);
- USC FCCCHR;
- Other national backflow prevention associations, such as the American Backflow Prevention Association (ABPA); and/or
- Other water utilities.

The information distributed by the City will include, but not be limited to, the following subjects:

- Cross-connection hazards in general;
- Irrigation system hazards and corrective actions;
- Fire sprinkler cross-connection hazards;
- Importance of annual inspection and/or testing of backflow preventers; and
- Thermal expansion in hot water systems when backflow preventers are installed for premises isolation.

The City will distribute information brochures to all customers every two to three years, and to every new customer at the time the service agreement is signed.

Element 9: *Development and maintenance of cross-connection control records.*

1. Types of Records and Data to be Maintained

The City will maintain records of the following types of information required by WAC 246-290-490:

- Service connections/customer premises information including:
  - Assessed degree of hazard; and
  - Required backflow preventer to protect the public water system.
- Backflow preventer inventory and information including:
  - Air gap (AG) location, installation and inspection dates, inspection results and person conducting inspection;
  - Backflow assembly location, assembly description (type, manufacturer, make, model, size, and serial number), installation, inspection and test dates, test results and data, and person performing test; and
  - Information on atmospheric vacuum breakers used for irrigation system applications, including manufacturer, make, model, size, dates of installation and inspections, and person performing inspections.

The City will maintain records on all assemblies that protect the public water system from contamination in a software database. At a minimum, the City will maintain records on all premises isolation assemblies required to protect the public water system. Where applicable, the above information will also be maintained for backflow preventers installed for in-premises protection that are relied upon by the City to protect the public water system.

2. Reports to be Prepared and Submitted to DOH

The City will prepare the following reports required by WAC 246-290-490 including:

- Cross-connection control program activities report for the calendar year, to be sent to DOH when requested;
- Cross-connection control program summary information, when required, or when there are significant policy changes;
- Backflow incident reports to DOH (and voluntarily to the PNWS-AWWA CCC Committee); and
- Documentation when exceptions to mandatory premises isolation are granted.

At a minimum, the City's CCS will prepare and sign the exceptions reports.

The City's CCS will prepare and sign all CCC-related reports required by WAC 246-290-490.

Element 10: *Additional cross-connection control requirements for reclaimed water.*

At this time the City of Sunnyside does not receive or distribute reclaimed water. In the event that reclaimed water use is proposed within the PWS's service area, the City will make all cross-connection control requirements mandated by the Permitting Authority in accordance with Chapter 90.46 RCW part of the written CCC program plan and comply with such additional requirements.

E. Other Provisions

1. Coordination with Authority Having Jurisdiction

Both WAC 246-290-490 and the Uniform Plumbing Code amended for Washington require coordination between the City and the Authority Having Jurisdiction (AHJ) in all matters pertaining to cross-connection control.

The City will provide a copy of this CCC program to the building department via a copy of the City's water system plan or in a separate document. The City will inform the AHJ of any changes in policy or procedure that may impact the AHJ.

The City will provide information to the AHJ in a timely manner regarding any:

- Requirement imposed on a residential customer for the installation of a DCVA or an RPBA on the service, with a description of the cross-connection hazard identified;
- Upgrade of the premises isolation backflow preventer, i.e., from a DCVA to an RPBA;
- Action taken to discontinue water service to a customer; and
- Backflow incident known by the City to have contaminated the public water system or a customer's plumbing system.

2. *Written Agreement with Authority Having Jurisdiction*

The City will pursue development of a written agreement with the Authority Having Jurisdiction regarding the details of the coordination on CCC issues between the two parties. The agreement will include, but not be limited to, the following items:

- The purpose of the written agreement;
- Identification of the parties and other interested agencies;
- Delineation of responsibilities;
- Procedures regarding new service connections;
- Procedures regarding existing and changes to existing services;
- Special policies and procedures, such as for fire protection and irrigation services;
- Procedures regarding water service shut-offs, backflow incidents, and other events;
- Communications between parties; and
- Other contingencies.

3. ***Prohibition of Return of Used Water***.

Used water is defined as water that has left the control of the City. This includes water used for heating and cooling purposes and water that may flow back into the distribution system from customers with multiple connections.

It is the policy of the City of Sunnyside to:

- Prohibit the intentional return of used water to the distribution system by any customer served by the public water system; and
- Require that all customers with multiple connections, where the hydraulics permit the potential return of used water, to install a backflow preventer (DCVA or RPBA) commensurate with the degree of hazard at each point of connection.

5. ***Unapproved Auxiliary Supplies.*** *All water supplies other than those owned by the City are considered unapproved auxiliary supplies as defined in WAC 246-290-010. The City will require backflow protection for customers with auxiliary supplies on their premises as follows:*

- Per Table 9 of WAC 246-290-490, the City will require the installation of an RPBA for premises isolation at the service connection to any customer having an unapproved auxiliary supply on the premises that is interconnected with the City's water system.

6. ***Tanker Trucks.*** *The City may allow tanker trucks to obtain water from the City's water system under the following conditions:*

- The tanker truck is equipped with an approved AG or an approved RPBA with a current satisfactory inspection or test report.

7. ***Temporary Water Connections.*** *The City will not supply water through temporary connections, such as those used for construction projects or main disinfection, except through a backflow preventer arrangement approved by the City. The applicant for the temporary connection shall document that the backflow preventer is a DOH-approved model and has passed an inspection and/or test within the past 12 months and/or upon relocation, whichever is more recent.*

8. ***Interties and Wholesale Water Customers.*** *The City will require that interties with other public water systems or wholesale customers (such as mobile home parks) be isolated at the point of delivery by:*

- A minimum of a DCVA; and
- A minimum of an RPBA if the City considers the purchasing system or wholesale customer to pose a high-health hazard to the City's system.

The City may waive or reduce the level of protection at the intertie, if the purchasing public water system or wholesale customer:

- Is a Group A public water system **not** exempt from DOH regulation as per WAC 246-290-020(2);
- Has a CCC program that complies with WAC 246-290-490 and which has been approved by DOH; and
- Implements the CCC program at a level satisfactory to the City.

F. Relationship to Other Planning and Operations Program Requirements

The City will consider the requirements and consequences of the CCC program on the utility's planning and operations requirements. Such considerations include, but are not limited to ensuring:

- And promoting adequate communication between CCC program personnel and other water utility staff;
- That adequate training is provided to all staff to recognize potential cross-connection control problems;
- That cross-connection issues be considered in water quality investigations;
- That the design of the water distribution system makes adequate provisions for expected head losses incurred through the installation of experienced by backflow assemblies;
- That CCC program personnel be consulted in the design of water and wastewater treatment facilities and when proposals are made to receive or distribute reclaimed water;
- That operations under normal and abnormal conditions do not result in excessive pressure losses; and
- That adequate financial and administrative resources are available to carry out the CCC program.

Cross-Connection Control Activities (Blue)
Annual Summary Report (ASR) for 2022

PWS ID: **854003** PWS Name: **SUNNYSIDE CITY OF** County: **YAKIMA**

Part 1: Designated Cross-Connection Control Specialist (CCS) Information

CCS Name	Cory Taylor	**CCS Phone**	509-836-6351	**CCS Cert. #**	8349	**BAT Cert. #**	
CCS is: PWS owner or employee							

Part 2: Status of Cross-Connection Control (CCC) Program at End of 2022

Provide information about the status of your CCC Program at the end of the reporting year.

PWS has:	**A written CCC Program Plan**[1] ◉Yes ○No **CCC implementation activities**[2] ◉Yes ○No	**Program Plan Last Updated**[3] 01/15/2015

[1] Enter "Yes" if PWS has **any** type of written CCC Program Plan, policies, or procedures. Written CCC Program Plan must be part of a Water System Plan (WSP) or Small Water System Management Program (SWSMP).

[2] Enter "Yes" if PWS implemented **any** CCC Program activities during the reporting year, such as establishing legal authority, conducting hazard evaluations, requiring installation of backflow assemblies to protect the PWS, requiring assembly testing, maintaining CCC records, or enforcing the PWS's or CCC Program requirements.

[3] PWS can update the CCC Program Plan at any time (independent of WSP or SWSMP update).

Provide information regarding PWS's specific CCC Program Elements

Program Element Number	Description of Element [See WAC 246-290-490(3)]	This Program Element is:	
		Included in Written Program Plan	Being Implemented or Is Completed
1	**Legal Authority Established**	◉Yes ○No	◉Yes ○No
2	**Hazard Evaluation Procedures and Schedules**	◉Yes ○No	◉Yes ○No
3	**Procedures/Schedules for Ensuring Installation of Backflow Preventers**	◉Yes ○No	◉Yes ○No
4	**Certified CCS Provided**	◉Yes ○No	◉Yes ○No
5	**Backflow Preventer Inspection and Testing**	◉Yes ○No	◉Yes ○No
6	**Assembly Testing Quality Assurance/Quality Control (QA/QC) Program**	◉Yes ○No	◉Yes ○No
7	**Backflow Incident Response Procedures**	◉Yes ○No	◉Yes ○No
8	**Public Education Program**	◉Yes ○No	◉Yes ○No
9	**CCC Records**	◉Yes ○No	◉Yes ○No
10	**Reclaimed Water Permit**	○Yes ○No ◉N/A	○Yes ○No ◉N/A

Part 3A: PWS Characteristics at End of 2022

Enter the number of connections (new and existing) served by the PWS by type.

Type of Service Connection	Number
Residential (As defined by PWS)	4475
All Other (include dedicated fire lines, dedicated irrigation lines, and PWS-owned facilities such as water and wastewater treatment plants and pumping stations, parks, piers, and docks)	594
Total Number of Connections	5069

Part 3B: Cross-Connection Control for Severe and High-Hazard Premises and High-Hazard Dedicated Lines Served by the PWS

Answer the following questions carefully. These answers control your access to pages 2 and 3 for data entry.

1. Does your PWS serve any severe or high-hazard premises or any high-hazard dedicated fire or irrigation lines? ◉ Yes ○ No

2. Does PWS serve any high-hazard medical premises? ◉ Yes ○ No

- If you answer Yes to both questions, you must enter data in at least one row on page 2 and one row on page 3.
- If you answer Yes to Question 1 and No to Question 2, you must enter data on page 2 only.
- If you answer No to both questions, pages 2 and 3 will be grayed out to prevent data entry.

- Count only premises PWS serves water to.
- Report data as accurately as possible. **DOH currently bases CCC compliance actions on this information.**

Type of Severe or High-Hazard Premises or Dedicated Lines [WAC 246-290-490(4)(b)]	Number of Connections at end of 2022			
	A. Being Served Water by PWS[1]	B. With Premises Isolation by AG/RP[2]	C. With Column B AG Inspected or RP Tested[3]	D. Granted Exception from Premises Isolation
Agricultural (farms and dairies)	1	1	1	0
Beverage bottling plants (including breweries)	2	2	2	0
Car washes	8	8	4	0
Chemical plants	1	1	1	0
Commercial laundries and dry cleaners	2	2	1	0
Both reclaimed water and potable water provided	0	0	0	0
Film processing facilities	0	0	0	0
Dedicated fire lines with chemical addition or using unapproved auxiliary supplies	0	0	0	0
Food processing plants (including canneries, slaughter houses, rendering plants)	10	10	9	0
Hospitals, medical centers, medical, dental and veterinary clinics, mortuaries, nursing homes, etc., reported on Part 3C page 3 (totals imported from page 3)	16	14	11	0
Dedicated irrigation systems using purveyor's water supply and chemical addition[4]	0	0	0	0
Laboratories	2	2	1	0
Metal plating industries	0	0	0	0
Petroleum processing or storage plants	0	0	0	0
Piers and docks	0	0	0	0
Radioactive material processing plants or nuclear reactors	0	0	0	
Survey access denied or restricted	0	0	0	0
Wastewater lift/pump stations (non-residential only)	1	1	1	0
Wastewater treatment plants	2	2	2	

Unapproved auxiliary water supply interconnected with potable water supply	0	0	0	0
Totals	45	43	33	0

[1] Count multiple connections or parallel installations to the same premises as **separate** connections.

[2]Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises preventers only or connections with DCVAs or DCDAs installed for premises isolation. The number in Column B can't be larger than the number in Column A in the same row.

[3] Count only connections whose premises isolation preventers were inspected (AGs) or tested (RPs) during the reporting year.

[4] For example, dedicated irrigation lines to parks, playgrounds, golf courses, cemeteries, estates, etc.

[5] Premises with hazardous materials or processes (requiring isolation by AG or RP), such as aircraft and automotive manufacturers, pulp and paper mills, metal manufacturers, military bases, and wholesale customers that pose a high hazard to the PWS. May be grouped together in categories, for example:"Other manufacturing" or "Other commercial".

Part 3C: Cross-Connection Control for High-Hazard Medical Premises Served by the PWS

- Count only medical premises PWS serves water to.
- Don't count the same premises more than once. If you serve different medical category premises through a single connection, count the connection under the medical category you consider to pose the highest hazard to PWS.
- Report data as accurately as possible. **DOH currently bases CCC compliance actions on this information**

Type of High-Hazard Medical Premises [WAC 246-290-490(4)(b)]	Number of Connections at end of 2022			
	A. Being Served Water by PWS[1]	B. With Premises Isolation by AG/RP[2]	C. With Column B AG Inspected or RP Tested[3]	D. Granted Exception from Premises Isolation
Hospitals				
Hospitals (include psychiatric hospitals and alcohol and drug treatment centers)	1	1	1	0
Facilities for Treatment and Care of Patients Not Located in Hospitals Counted Above				
Same day surgery centers	0	0	0	0
Out-patient clinics and offices	6	6	3	0
Alternative health out-patient clinics and offices	0	0	0	0
Psychiatric out-patient clinics and offices	1	0	0	0
Chiropractors with water-connected X-ray equipment	0	0	0	0
Hospice care centers	0	0	0	0
Childbirth centers	0	0	0	0
Kidney dialysis centers	1	1	1	0
Blood centers	0	0	0	0
Dental clinics and offices	4	4	4	0
Facilities for Housing Patients				
Nursing homes	1	1	1	0
Assisted Living Facilities (formerly Boarding Homes)	0	0	0	0
Residential treatment centers	0	0	0	0
Other Medical-Related Facilities				
Mortuaries with embalming equipment	1	1	1	0
Morgues and autopsy facilities (not in hospitals)				
Veterinarian offices, clinics and hospitals	1	0	0	0
Totals	16	14	11	0

[1] Count multiple connections or parallel installations to the same premises as **separate** connections.

[2] Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises preventers only or connections with DCVAs or DCDAs installed for premises isolation. The number in Column B can't be larger than the number in Column A in the same row.

[3] Count only connections with premises isolation AGs or RPs. Don't include connections with in-premises backflow preventers only or connections with premises isolation DCVAs or DCDAs isolation.

Part 4A: Backflow Preventer Inventory and Testing Information for 2022

- Complete all fields. Enter **zero (0)**, if no backflow preventers in a specific category.
- Count only backflow preventers relied on to protect the PWS.
- Count AVBs on *irrigation systems only*. Select No to AVB question above Table 2 if PWS doesn't track AVBs.
- Count multiple tests (or failures) for the same backflow preventer as one test (or failure) for that backflow preventer.
- For multiple service connections or parallel installations, count each assembly separately.
- Count RPDAs and DCDAs as ***single*** assemblies. Count the tests of the mainline assembly and bypass assembly as ***one test***. Count the failure of either the mainline or bypass assembly (or the failure of both) as ***one failure***. Count an entire detector assembly taken out of service as ***one assembly removed from service***.
- Count assemblies installed on dedicated fire or irrigation lines as **Premises Isolation Assemblies** in Table 1.

	Backflow Preventer Category and Inspection/Testing Information	Air Gap	RPBA	RPDA	DCVA	DCDA	PVBA	SVBA	AVB
Table 1: Premises Isolation Preventers (include preventers isolating PWS-owned facilities)									
Existing Premises Isolation Backflow Preventers									
1	In service at beginning of 2022	0	102	2	476	9			
2	Inspected and/or tested in 2022[1]	0	97	2	315	9			
3	Failed inspection or test in 2022	0	10	0	13	1			
New Premises Isolation Backflow Preventers									
4	Installed in 2022[2]	0	3	0	33	0			
5	Inspected and/or tested in 2022[1]	0	3	0	33	0			
6	Failed inspection or test in 2022	0	0	0	0	0			
Premises Isolation Backflow Preventers (existing or new)									
7	Removed from service in 2022[3]	0	0	0	3	0			
	Total Premises Isolation Preventers at End of 2022	0	105	2	506	9	0	0	0
	Does PWS track AVBs on irrigation systems?							○ Yes	◉ No
Table 2: In-Premises Preventers (include preventers within PWS-owned facilities)									
Existing In-Premises Backflow Preventers									
8	In service at beginning of 2022	0	91	0	279	4	0	0	unk
9	Inspected and/or tested in 2022[1]	0	66	0	204	4	0	0	unk
10	Failed inspection or test in 2022	0	10	0	10	0	0	0	unk
New In-Premises Backflow Preventers									
11	Installed in 2022[2]	0	3	0	14	0	0	0	unk
12	Inspected and/or tested in 2022[1]	0	3	0	14	0	0	0	unk
13	Failed inspection or test in 2022	0	0	0	0	0	0	0	unk
In-Premises Backflow Preventers (existing or new)									
14	Removed from service in 2022[3]	0	5	0	5	1	0	0	unk
	Total In-Premises Preventers at End of 2022[4]	0	89	0	288	3	0	0	0
	Grand Totals at End of 2022	0	194	2	794	12	0	0	0

[1] Initial and/or routine annual inspection (for proper installation and approval status) and/or test (for testable assemblies only, using DOH-approved USC field test procedures).

[2] Includes preventers installed on connections where backflow prevention was not previously required and any preventers that replaced those in service at the beginning of the reporting year. Replacement preventers may be of a different type than the originals.

[3] Existing or new preventers taken out of service, whether or not they were replaced by the same or a different type of preventer.

Part 4B: Other Implementation Activities in 2022

Complete all cells. Enter zero if not applicable.

Water Use Questionnaires	
Did your PWS send any water use questionnaires to customers during 2022?	○ Yes ◉ No

On-site Hazard Surveys				
Did your CCS conduct any on-site hazard surveys during 2022?			◉ Yes ○ No	
	Service Connection Type			
	New	**Existing**	**Total**	
1. Number of connections surveyed for cross-connection hazards to PWS.	4	9	13	
2. Number of connections requiring backflow prevention to protect PWS.[1,2]	4	4	8	

New Exceptions to Premises Isolation	
Did your CCS grant any new premises isolation exceptions in 2022 to high-hazard premises?[3]	○ Yes ◉ No

CCC Enforcement Actions	
Did your PWS take any enforcement actions during 2022?[4]	○ Yes ◉ No

[1] Include services where either premises isolation or in-premises preventers were required to protect the PWS.

[2] Include existing services that need new, additional or higher level backflow prevention.

[3] Submit a completed DOH Exception Form (green) for each new exception granted in the reporting year.

[4] "Enforcement actions" means actions taken by the PWS (such as water shut-off, PWS installation or testing of backflow preventer, assessment of fines, etc.) when the customer fails to comply with the PWS's CCC requirements.

Part 5: Backflow Incidents and "Off-Normal" Events in 2022

	Backflow Incidents, Risk Factors, and Indicators during 2022	Number
	Backflow Incidents during 2022	
1	Backflow incidents that contaminated the PWS[5].	0
2	Backflow incidents that contaminated the customer's drinking water system ***only***[5].	0
	Risk Factors for Backflow during 2022	
3	Distribution main breaks per 100 miles of pipe.	1.00
4	Low pressure events (<20 psi in PWS distribution system).	2
5	Water outage events.	0
	Indicators of Possible Backflow during 2022	
6	Total health-related complaints received by PWS.[6]	0
7	Received during BWA or PN events.[7]	0
8	Received during low pressure or water outage events.	0
9	Total aesthetic complaints (color, taste, odor, air in lines, etc.).	0
10	Received during BWA or PN events.[7]	0
11	Number of these complaints received during low pressure or water outage events.	0

[5] Purveyors must submit a Backflow Incident Report form for each backflow incident known to have contaminated the public water system. DOH is also interested in receiving incident report forms for backflow incidents that contaminated the customer's drinking water system only.

[6] Such as stomach ache, headache, vomiting, diarrhea, skin rashes, etc.

[7] **"BWA"** means **Boil Water Advisory** and **"PN"** means **Public Notification** for water quality reasons.

Part 6: Comments and Clarifications

- Enter comments to:
  - Explain or clarify information in this report.
  - Describe challenges faced or accomplishments made in this reporting year.
  - Share your goals and objectives for the coming reporting year.
- Delete comments that are no longer valid.

No Comments

Part 7: Report Certification and Contact Information

I, Daniel Tiliano , certify that the information in this form is true, complete and accurate to the best of my knowledge.

Last Saved	04/28/2023	**All ASR Forms Certified/Submitted**	04/28/2023

Designated CCS/CCC Program Manager[1]					
Name	Cory Taylor	**Title**	Building Inspector	**CCS Cert #**	8349
Email Address	ctaylor@sunnyside-wa.gov	**Phone**	509-836-6351	**Phone Ext**	

PWS Manager[2]					
Name	Daniel Tiliano	**Title**	Water Division Supervisor	**Operator Cert #**	10899
Email Address	dtiliano@sunnyside-wa.gov	**Phone**	509-837-5206	**Phone Ext**	

[1] The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).

[2] The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.

Cross-Connection Control Program Summary (Cream)
Annual Summary Report (ASR) for 2022

PWS ID: **854003** PWS Name: **SUNNYSIDE CITY OF** County: **YAKIMA**

Describe the characteristics of the PWS's Cross-Connection Control (CCC) Program at the end of 2022.

Part 1: CCC Program Characteristics

A. Type of Program Implemented

Type of Program	Check One
Premises isolation only.	○
Combination program: reliance on both premises isolation and in-premises prevention.	◉
In transition from a combination program to a premises isolation only program.	○

B. Coordination with Authority Having Jurisdiction (AHJ) on CCC Issues

Indicate the status of coordination with AHJs in your service area. The AHJ is the entity that enforces the Uniform Plumbing Code at the local level. The AHJ is usually your county or city building department. Don't list DOH as an AHJ.

AHJ #	Name of AHJ (City or County Building Department)[1]	PWS		AHJ Declined to Coordinate
		Coordinates with AHJ	Has Written Agreement with AHJ	
1	City Planning	Yes ◉ No ○	Yes ○ No ◉	Yes ○ No ○

[1] Do not enter an individual's name.

C. Corrective/Enforcement Actions Available to the Purveyor

Type of Corrective Action/Enforcement Action	Indicate Whether Available	Most Often Used (Check One)
Purveyor denies or discontinues water service.	Yes ◉ No ○	◉
Purveyor installs backflow assembly and bills customer.	Yes ○ No ◉	○
Purveyor assesses fines (in addition to eliminating or controlling cross connection).	Yes ○ No ◉	○
Purveyor tests backflow assembly and bills customer.	Yes ○ No ◉	○

[1] Enter detailed description of other enforcement actions available to PWS. Don't enter "None", "Not Applicable", or "Not Available."

D. CCC Program Responsibilities

Do not include enforcement action related procedures or circumstances.

CCC Program Activity	Responsible Party (Check one per row)	
	Customer	Purveyor
Hazard Evaluation by DOH-certified CCS	○	◉
Backflow preventer (BP) ownership	◉	○
BP installation	◉	○
BP *initial* inspection (for proper installation - all BPs)	○	◉
BP *initial* test (for testable assemblies)	◉	○
BP *annual* inspection (Air Gaps and AVBs)	○	◉
BP *annual* test (for testable assemblies)	◉	○
BP maintenance and repair	◉	○

E. Backflow Prevention for Fire Protection Systems

Please remember to enter number of days allowed if you require retrofitting.

PWS coordinates with *AHJ* on CCC issues for fire sprinkler systems (FSSs)	Yes ◉ No ○ N/A ○
PWS coordinates with *local Fire Marshal* on CCC issues for FSSs.	Yes ◉ No ○ N/A ○
PWS ensures backflow prevention is installed before serving *new* connections with FSSs.	Yes ◉ No ○
PWS requires retrofits to *high*-hazard FSSs.	Yes ○ No. of days allowed: No ○ N/A ◉
PWS requires retrofits to *low*-hazard FSSs.	Yes ○ No. of days allowed: No ○ N/A ◉

F. Backflow Prevention for Irrigation Systems

Minimum level of backflow prevention required on irrigation systems *without* chemical addition.	Not Addressed ○ AVB ○ PV/SVBA ○ DCVA ◉ RPBA ○
PWS currently inspects AVBs upon *initial* installation.	Yes ○ No ○ N/A ◉
PWS currently inspects AVBs upon repair, reinstallation or relocation.	Yes ○ No ○ N/A ◉

G. Used Water

Does PWS prohibit, by ordinance, rules, policy, by-laws or agreement, the intentional return of used water (e.g. for heating or cooling) into the distribution system?	Yes ◉ No ○
If not prohibited at present, date plan to prohibit use.	N/A
Current number of service connections returning used water to distribution system.	0

H. Backflow Prevention for Unapproved Auxiliary Water Supplies[1] NOT Interconnected with PWS

Show the **minimum** backflow preventer and type of protection required for service connections having unapproved auxiliary water supplies *when they are NOT interconnected to the PWS.*

***Existing* service connections.**	None ○ DCVA ○ RPBA ○ AG ◉
Type of protection required.	N/A ○ In-premises prevention ○ Premises isolation ◉
***New* service connections.**	None ○ DCVA ○ RPBA ○ AG ◉
Type of protection required.	N/A ○ In-premises prevention ○ Premises isolation ◉

[1] An auxiliary water supply is any water supply on or available to customer's premises in addition to the purveyor's potable water supply.

I. Backflow Prevention for Tanker Trucks and Temporary Water Connections

Minimum **level of backflow prevention (installed on or associated with the truck) required for tanker trucks taking water from PWS.**	AG ◉ DCVA ○ RPBA ○ Not Specified ○ Tanker trucks not allowed ○
PWS requires tanker trucks to obtain water at designated fill sites each equipped with permanently installed backflow preventer(s).	Yes ◉ (Minimum preventer: DCVA ○ RPBA ◉) No ○ N/A ○ No sites provided ○
PWS currently accepts tanker trucks approved by other PWSs without further inspection or testing.	Yes ○ No ◉ N/A ○
Minimum **level of backflow prevention required for temporary water connections (e.g., for construction sites).**	AG ◉ DCVA ○ RPBA ○ Not specified ○ Temp. connections not allowed ○
PWS provides approved backflow preventer for temporary connections.	Yes ◉ No ○ N/A ○ (Temp. connections not allowed)
PWS requires testing each time the temporary connection backflow preventer is relocated.	Yes ◉ No ○ N/A ○ (Temp. connections not allowed)

J. Backflow Prevention for Non-Residential Connections

For each category shown, indicate whether PWS has non-residential connections of that type and the **minimum** level of ***premises isolation*** backflow prevention required (whether or not PWS currently has that type of customer).

Type of Connection	PWS has Customers of this Type	Minimum Premises Isolation Backflow Prevention Required
Commercial	Yes ◉ No ○	Not Required ○ DCVA ◉ RPBA ○
Industrial	Yes ◉ No ○	Not Required ○ DCVA ○ RPBA ◉
Institutional	Yes ◉ No ○	Not Required ○ DCVA ○ RPBA ◉

K. Backflow Prevention for Wholesale Customers

Indicate whether the PWS requires backflow prevention at interties with wholesale customers (other PWSs).

Type of Intertie	PWS has Customers of this Type	Minimum Backflow Prevention Required (if prevention is required, indicate minimum level).	
Existing	Yes ○ No ◉	Not specified / Not required ○ Always required ○ Required only if purchaser's CCC program is inadequate ◉	Minimum required (if applicable): DCVA ○ RPBA ◉
New	Yes ○ No ◉	Not specified / Not required ○ Always required ○ Required only if purchaser's CCC program is inadequate ◉	Minimum required (if applicable): DCVA ○ RPBA ◉

L. Exceptions to Mandatory Premises Isolation

PWS's written CCC Program Plan *allows* system to grant exceptions to mandatory premises isolation per WAC 246-290-	Yes ◉ No ○ Doesn't Address ○

490(4)(b)(iii)	
PWS currently grants new Exceptions.	Yes ○ No ◉
PWS granted Exceptions in past reporting years.	Yes ◉ No ○

Part 2: CCC Program Record-Keeping Software

Indicate the type or name of computer software the PWS uses to track CCC records.

BPMS ○	**Cross-Track (BMI)** ◉	**Tokay** ○	**XC2** ○	**Custom developed for or by PWS[1]** ○
Other non-CCC software (e.g. Excel) ○	**Other commercial CCC software (specify)** ○	**None Used** ○		

[1] Do not include commercial CCC software customized for PWS. If PWS uses customized commercial software, check the box for the appropriate commercial software name.

Part 3: Comments and Clarifications

- Enter comments to:
  - Explain or clarify information in this report.
  - Describe accomplishments made in this reporting year.
  - Identify challenges faced in this reporting year.
  - Share your goals and objectives for the coming reporting year.
- Delete comments that are no longer valid.

No Comments

Part 4: Report Certification and Contact Information

I,Daniel Tiliano, certify that the information in this form is true, complete and accurate to the best of my knowledge.

Last Saved	04/28/2023	**All ASR Forms Certified/Submitted**	04/28/2023

Designated CCS/CCC Program Manager[1]					
Name	Cory Taylor	**Title**	Building Inspector	**CCS Cert #**	8349
Email Address	ctaylor@sunnyside-wa.gov	**Phone**	509-836-6351	**Phone Ext**	

PWS Manager[2]					
Name	Daniel Tiliano	**Title**	Water Division Supervisor	**Operator Cert #**	10899
Email Address	dtiliano@sunnyside-wa.gov	**Phone**	509-837-5206	**Phone Ext**	

[1] The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).

[2] The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.

Backflow Prevention for Severe Health Hazard Facilities (Gray)
Annual Summary Report (ASR) for 2022

PWS ID: **854003** PWS Name: **SUNNYSIDE CITY OF** County: **YAKIMA**

Part 1: Backflow Prevention Status

- Describe the backflow prevention status at the end of the reporting year for each wastewater treatment plant and nuclear facility your system serves.
- If you serve more than one severe health hazard facility, click the “Add Facility” button to display another facility data entry box.
- If you serve more than one connection to the same facility, click the “Add Connection” button to display another connection row for that facility.
- You may add as many facilities and connections as needed.
- To update this form, you may delete facilities and connections which are no longer served.

Facility 1 of 2

Facility Name	Sunnyside Waste Water Treatment Plant
Physical Address	1338 S 4th
City	Sunnyside
Zip	98944
NPDES Permit#	WA0020991C
Facility Type	Wastewater Treatment Plant (WWTP)
Facility Comments	

Facility 1 Connection 1 of 1

Connection Name	Sunnyside Waster Water Treatment Plant
Backflow Prevention Status	Premises Isolation RP but No In-Plant Air Gap
Connection Comments	

Facility 2 of 2

Facility Name	Sunnyside Port Industrial Waste Water Tr
Physical Address	747 Midvale Rd.
City	Sunnyside
Zip	98944
NPDES Permit#	WA0052426
Facility Type	Wastewater Treatment Plant (WWTP)
Facility Comments	

Facility 2 Connection 1 of 1	
Connection Name	Sunnyside Port Waste Water
Backflow Prevention Status	Premises Isolation RP but No In-Plant Air Gap
Connection Comments	

Part 2: Report Certification and Contact Information

I,Daniel Tiliano, certify that the information in this form is true, complete and accurate to the best of my knowledge.

Last Saved	04/28/2023	**All ASR Forms Certified/Submitted**	04/28/2023

Designated CCS/CCC Program Manager[1]					
Name	Cory Taylor	**Title**	Building Inspector	**CCS Cert #**	8349
Email Address	ctaylor@sunnyside-wa.gov	**Phone**	509-836-6351	**Phone Ext**	

PWS Manager[2]					
Name	Daniel Tiliano	**Title**	Water Division Supervisor	**Operator Cert #**	10899
Email Address	dtiliano@sunnyside-wa.gov	**Phone**	509-837-5206	**Phone Ext**	

[1] The CCS responsible for developing and implementing the PWS's CCC program (CCC Program Manager).
[2] The person the designated CCS/CCC Program Manager reports to or other manager having direct oversight of the CCC Program.

City of SUNNYSIDE WASHINGTON

13

Consumer Confidence Report

HLA Engineering and Land Surveying, Inc.

CITY OF SUNNYSIDE

Consumer Confidence Report

2022

The City of Sunnyside is pleased to present our annual Consumer Confidence Report. This report contains important information about our drinking water quality and keeps our customers up to date on what is happening with the Water Division. We have dedicated ourselves to producing drinking water that meets all state and federal standards. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. We encourage you to stay informed about your drinking water by reading this report.

En Español: *Este informe contiene información importante sobre la calidad de su agua potable. Debe ser traducido por alguien que habla bien Inglés. Si tiene alguna pregunta acerca de este informe puede comunicarse con el Departamento de Obras Públicas en Sunnyside 509-837-5206 durante las horas normales de oficina.*

Drinking Water Source & Treatment

The City currently has seven Wells in use, in addition to one standby Well, located all throughout the city. These Wells are relatively deep and the water we receive from them meets all state and federal standards. Chlorine is used for disinfection. Residual chlorine levels in the distribution system are checked on a daily basis to ensure that the amount of chlorine utilized is effective while remaining at the safe levels determined by the EPA. We also test for several different contaminants each year. In the event that any test exceeded the maximum contaminant levels set by the EPA, the appropriate public notification would be issued immediately.

Important Health Information

Drinking water, including bottled water, may reasonably be expected to contain at least trace amounts of some "contaminants". The presence of these do not necessarily indicate that water poses a health risk.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. Environmental Protection Agency/Centers for Disease Control (EPA/CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

Conserve Water With Xeriscaping

The term ***xeriscape*** refers to landscaping methods that conserve water, such as using native plant species and grouping plants with the same water needs together. Originally developed for drought-afflicted areas, the principles of xeriscape today have broadening appeal. This “common sense” technique can reduce landscape water use by 75%! With water now considered an expensive and limited resource, all landscaping projects can benefit from this simple alternative.

Xeriscapes do not have a single look - almost any landscaping style can be achieved. Because native plant species are used, xeriscapes not only save water, they are also easier to maintain, use less fertilizers or pesticides, and provide crucial wildlife habitats. Check the internet or your local book store for landscape design ideas, recommended native plant species and helpful tips. You’ll be on your way to saving water in no time!

Water is a Limited and Valuable Resource

The State of Washington has taken a progressive approach to managing our drinking water resources. City of Sunnyside personnel strive daily to meet or exceed all standards. However, our work will not have an impact without the conservation efforts of our water customers.

When you practice conservation, not only do you enjoy immediately lower water bills, there is also a considerable savings to the City in terms of chemicals, electricity, wear and tear on equipment... which results in fewer rate increases over time! In addition, when we commit to practicing conservation, we help avoid water shortages and ensure adequate supplies for future generations.

Water is a limited and valuable resource. Please help us manage water wisely by practicing conservation every day, indoors and out. For simple conservation tips and tools, go to www.epa.gov/watersense.

2022 WATER QUALITY DATA TABLE

The Environmental Protection Agency (EPA) regulates the frequency of sampling for various contaminants. The data presented in this table is from testing conducted in 2022. The table may also include any other results within the last five years for analyses that were not required in the year 2022.

Contaminants (units)	MCLG	MCL	Range Low-High or Result	Sample Date	Violation	Typical Source
Inorganic Contaminants						
Nitrate (ppm)	10	10	<0.5 - 2.14	Apr. - Aug. 2022	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Arsenic (ppb)	0	10	6.2	Sept 2022	No*	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Radiological Contaminants						
Gross Alpha (pCi/L)	0	15	0.235	Apr. 2022	No	Naturally occurring radioactive elements emit alpha particles as they decay.
Gross Beta (pCi/L)	0	50*	5.17	Apr. 2022	No	Naturally occurring radioactive elements emit beta particles as they decay.
Lead and Copper	**MCLG**	**AL**	90th Percentile			
Lead (ppb) 30 samples	0	15	0.0019	Aug. 2022	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm) 30 samples	1.3	1.3	0.0821	Aug. 2022	No	Corrosion of household plumbing systems; Erosion of natural deposits

* The state reporting limit is 4 mrem/year

TERMS & ABBREVIATIONS

AL: Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Contaminant: A word used to describe anything detected in the drinking water supply. This commonly-used term should not necessarily invite concern, as all drinking water contains trace amounts of minerals and other substances.

MCL: Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water.

n/a: not applicable.

ND: Not Detected: Lab analysis indicates that the contaminant is not present or not detectable with the best available technology.

ppb: Parts per billion, or micrograms per liter.

ppm: Parts per million, or milligrams per liter.

pCi/L: Picocuries per liter

Range: The lowest (minimum) amount of contaminant detected and the highest (maximum) amount detected during a sample period.

90th percentile: Out of the 30 homes sampled, 27 were at or below this level.

The Effect of Lead In Drinking Water

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Sunnyside is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking.

If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline 800-426-4791 or on their website www.epa.gov/safewater/lead.

A Note About Arsenic*

Very low levels of arsenic, which have not exceeded EPA standards, have been detected in the City of Sunnyside's drinking water supply. To exceed the MCL of 10ppb it is the average of 4 consecutive quarters. There is a slight chance that some people who drink water containing low levels of arsenic over many years could develop circulatory disease, cancer or other health problems. Most types of cancer and circulatory disease are due to factors other than exposure to arsenic. EPA standards balance the current understanding of arsenic's health effects against the cost of removing arsenic from drinking water.

Ongoing System Update

Sunnyside water district is focused on maintaining its water system on a daily basis, providing new water services to new construction and being a steward of its pristine water supply.

In an effort to improve the system's efficiency and reliability, we are working on switching from Automatic Meter Reading (AMR) to Advanced Metering Infrastructure (AMI). AMI will allow two-way, real-time communication between our software and customer meters. This will result in improved billing services, customer service and resource conservation.

If you have questions about this report or your drinking water, call:

Shane Fisher,
Sunnyside Public Works Director
509-837-5206
Washington Department of Health
509-456-3115
EPA Hotline
800-426-4791

GET INVOLVED

Residents with questions or input on water issues may attend City Council meetings on the second and fourth Monday of each month at 6:30 PM at the Law & Justice Center. The agenda is posted on the City website at www.sunnyside-wa.gov.

Water Use Efficiency Update

The Water Use Efficiency (WUE) program was designed and implemented by the Washington Department of Health to "help use water efficiently to help meet future needs, operate successfully within financial, managerial and technical constraints, and to continue to deliver safe and reliable water." Our goal within the WUE program is to be able to account for 90% of the water we produce. In 2021, we were able to account for 98.4% of the water we produced! We will continue to be diligent in identifying and addressing any areas of water waste and ask you to do the same. Thank you for helping to make our WUE program a success!

Cross Connection and Backflow Reminder

One of the measures the City of Sunnyside takes to ensure the safety of your drinking water is the implementation of a Cross Connection Control Program. This program is designed to prevent used water or other substances from returning back into the water supply. Connections between the drinking water piping and any plumbing fixture, equipment or device through which it may be possible for used water or other substances to enter back into the water supply are called ***cross connections.*** Certain hydraulic conditions can cause water to flow in the opposite of its intended direction; this is called ***backflow.***

Some examples of cross connections are lawn irrigation systems and fertilizer spray attachments, but even a garden hose used to fill a hot tub is a potentially dangerous cross connection. These cross connections require mechanical units, called ***backflow prevention assemblies***, to be installed to prevent water from flowing backwards.

As a water customer, you are responsible to maintain your own plumbing system according to the plumbing code and other state regulations. Plumbing permits are required when working on a plumbing system, and this includes the installation of a backflow prevention assembly. Obtaining the proper permits minimizes your liability in the event of a backflow incident. The permit process ensures that work done on a plumbing system is carried out in a safe, correct manner. This protects you, your loved ones, and your community.

If you have any questions about our Cross Connection Control Program, please do not hesitate to contact us.

City of SUNNYSIDE WASHINGTON

14

Coliform Monitoring Plan

HLA Engineering and Land Surveying, Inc.

City of Sunnyside

Public Works Department

Water Division

Coliform Monitoring Plan

Water System Name: City of Sunnyside

I.D.: #854003 **Population:** 17,037 **Services:** 5,456 *

SOURCES	**ADDRESS**	**DEPTH**
S06	720 S. 16th St	769 FEET
S07	198 E. South Hill Rd	1057 FEET
S08	260 Homer St	440 FEET
S09	3270 Airport Way	919 FEET
S11	210 S. 7th St	435 FEET
S12	2920 Outlook Rd	397 FEET
S13	2920 Outlook Rd	431 FEET

TREATMENT: Chlorination and Sodium Hypochlorite. Disinfection at each well site.

STORAGE	**ADDRESS**	**TANK VOLUME**	**OPERATING CAPACITY**
Reservoir #1	351 W Grandview Ave	750,000 Gallons	85,000 Gallons
Reservoir #2	351 W Grandview Ave	750,000 Gallons	85,000 Gallons
Reservoir #3	351 W Grandview Ave	1,000,000 Gallons	744,000 Gallons
Reservoir #4	720 Skyline Dr	1,000,000 Gallons	982,000 Gallons

*Includes residential and non-residential connections

City of Sunnyside

Public Works Department

Water Division

Coliform Monitoring Plan

ROUTINE SAMPLE SITES

Routine sampling required by regulation: 15 samples per month. Repeat sample sites are available upstream and downstream of all sample sites.

BI-MONTHLY SAMPLING SCHEDULE

WEEK 1:

High Zone

X1 340 W. GRANDVIEW AVE

Intermediate Zone

X3 606 SAN CLEMENTE AVE

X4 1209 VISTA AVE

Low Zone

X16 550 D MIDVALE RD

X6 803 SCOON RD #B

X7 110 W. SOUTH HILL RD

X9 2200 YAKIMA VALLEY HIGHWAY

X12 WELLS 6, 7, 8, 9, 11, 12, 13 RAW SOURCES ON ROTATION, DEPENDING ON DEMAND

City of Sunnyside

Public Works Department

Water Division

Coliform Monitoring Plan

BI-MONTHLY SAMPLING SCHEDULE

WEEK 2:

High Zone

X2 605 SKYLINE DR

Intermediate Zone

X5 811 DAYTON DR

Low Zone

X14 818 E EDISON AVE

X15 555 W. SOUTH HILL RD

X13 3201 PICARD PL

X8 809 N.W. CRESCENT AVE

X10 2001 YAKIMA VALLEY HIGHWAY

X11 1750 SHELLER RD

RE-SAMPLING SITES

SAMPLE SITE 1			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-8	809 N.W. CRESCENT AVE	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-81	809 N.W. CRESCENT AVE	
REPEAT	R-82	813 N.W. CRESCENT AVE	
REPEAT	R-83	805 N.W. CRESCENT AVE	

SAMPLE SITE 2			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-10	2001 Y.V.H	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-101	2001 Y.V.H.	
REPEAT	R-102	2002 MORGAN RD	
REPEAT	R-103	2210 A E. EDISON AVE	

SAMPLE SITE 3			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-11	1750 SHELLER RD	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-111	1750 SHELLER RD	
REPEAT	R-112	501 SHELLER RD	
REPEAT	R-113	1650 SHELLER RD	

SAMPLE SITE 4			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-1	340 W GRANDVIEW AVE	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-11	340 W GRANDVIEW AVE	
REPEAT	R-12	334 W GRANDVIEW AVE	
REPEAT	R-13	404 W GRANDVIEW AVE	

SAMPLE SITE 5			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-3	606 SAN CLEMENTE	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-31	606 SAN CLEMENTE	
REPEAT	R-32	616 SAN CLEMENTE	
REPEAT	R-33	303 N.W. CRESCENT AVE	

SAMPLE SITE 6			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-2	605 SKYLINE DR	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-21	605 SKLYINE DR	
REPEAT	R-22	603 SKYLINE DR	
REPEAT	R-23	613 SKYLINE DR	

SAMPLE SITE 7			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-5	811 DAYTON DR	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-51	811 DAYTON DR	
REPEAT	R-52	805 DAYTON DR	
REPEAT	R-53	623 DAYTON DR	

SAMPLE SITE 8			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-14	818 E. EDISON AVE	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-141	818 E. EDISON AVE	
REPEAT	R-142	922 E. EDISON AVE	
REPEAT	R-143	801 E. EDISON AVE	

SAMPLE SITE 9			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-15	555 W. SOUTH HILL RD	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-151	555 W. SOUTH HILL RD	
REPEAT	R-152	590 W. SOUTH HILL RD	
REPEAT	R-153	1759 MCBRIDE ST	

SAMPLE SITE 10			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-13	3201 PICARD PL	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-131	3201 PICARD PL	
REPEAT	R-132	3209 PICARD PL	
REPEAT	R-133	1850 WANETA RD	

SAMPLE SITE 11			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-4	1209 VISTA AVE	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-141	1209 VISTA AVE	
REPEAT	R-142	1203 VISTA AVE	
REPEAT	R-143	1217 VISTA AVE	

SAMPLE SITE 12			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-16	550 D MIDVALE RD	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-161	550 D MIDVALE RD	
REPEAT	R-162	511 MIDVALE RD	
REPEAT	R-163	747 MIDVALE RD	

SAMPLE SITE 13			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-6	803 SCOON RD #B	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-61	803 SCOON RD #B	
REPEAT	R-62	701 SCOON RD	
REPEAT	R-63	803 SCOON RD	

SAMPLE SITE 14			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-7	110 W. SOUTH HILL RD	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-71	110 W. SOUTH HILL RD	
REPEAT	R-72	1527 S 1ST ST	
REPEAT	R-73	100 E SOUTH HILL RD	

SAMPLE SITE 15			**SOURCE SAMPLE GWR & RTCR**
ROUTINE	X-9	2200 Y.V.H.	Under the Ground Water Rule all wells that are on line at the time of a routine total coliform sample testing positive, a raw water sample must be collected from each well within 24 hours and tested for E. coli.
REPEAT	R-91	2200 Y.V.H.	
REPEAT	R-92	2150 Y.V.H.	
REPEAT	R-93	2490 Y.V.H.	

Coliform Monitoring Plan

The City of Sunnyside is required to collect total coliform bacteria sample by the Federal Total Coliform Rule and chapter 246-290 WAC.

Table 2
Total Coliform Monitoring Frequency

Population served	Minimum number of samples per month
1 to 1,000*	1
1,001 to 2,500	2
2,501 to 3,300	3
3,301 to 4,100	4
4,101 to 4,900	5
4,901 to 5,800	6
5,801 to 6,700	7
6,701 to 7,600	8
7,601 to 8,500	9
8,501 to 12,900	10
12,901 to 17,200	15
17,201 to 21,500	20

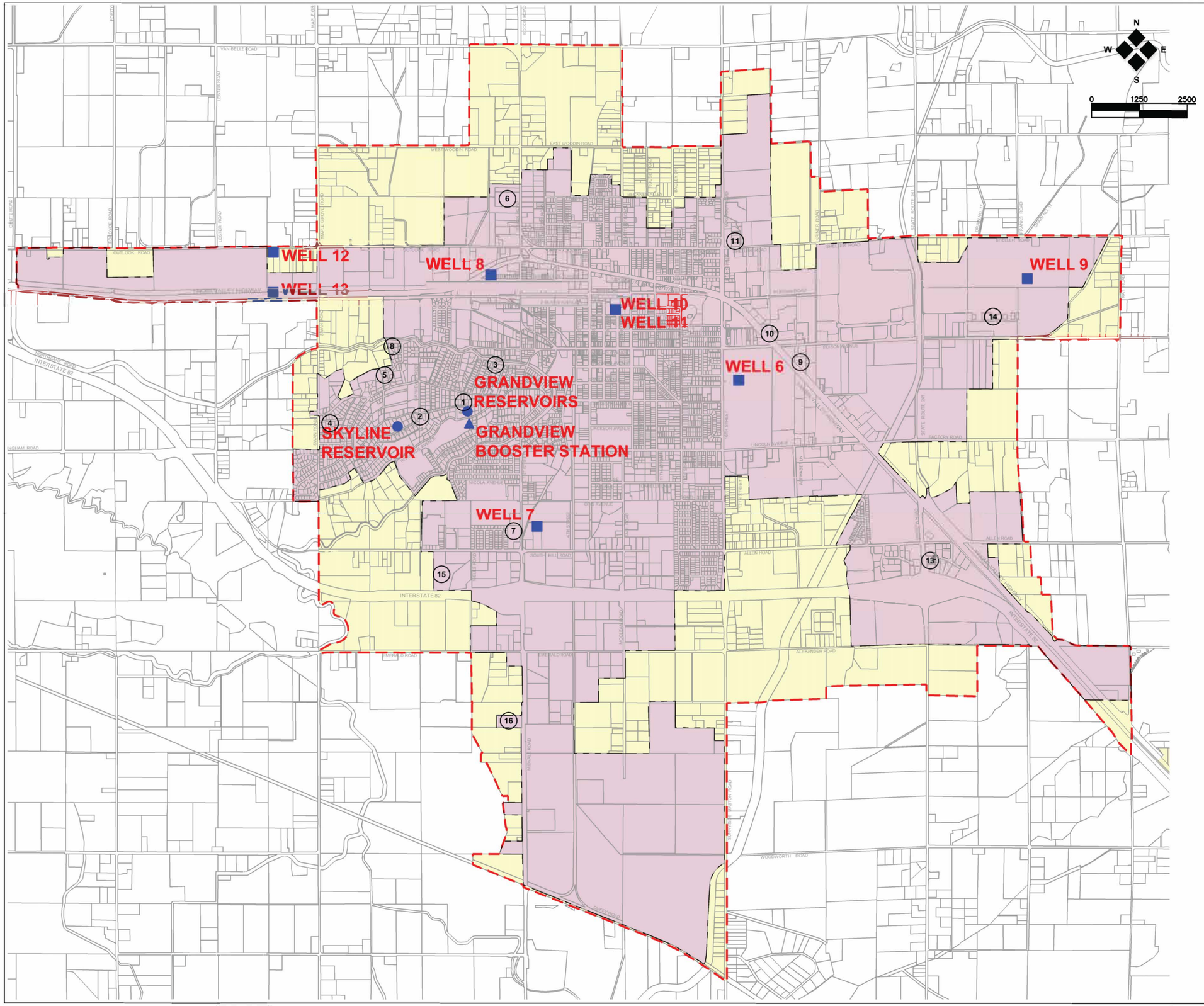
This plan is written to indicate the sampling sites and monitoring frequency. It is our intention to give a true representation of the water throughout the distribution system.

We also collect 1 monthly Coliform sample for Sunnyview Park, (02351) from April – September of each year. Sunnyview Park is open from April – September.

CITY OF SUNNYSIDE

Water System Plan Update

COLIFORM SAMPLING MAP


N
W
E
S
0
1250
2500
WELL 12
WELL 13
WELL 8
WELL 10
WELL 11
WELL 9
WELL 6
GRANDVIEW RESERVOIRS
SKYLINE RESERVOIR
GRANDVIEW BOOSTER STATION
WELL 7
INTERSTATE 82
YAKIMA VALLEY HIGHWAY
EAST WOODIN ROAD
WEST WOODIN ROAD
OUTLOOK ROAD
VAN BELLE ROAD
LESTER ROAD
MAPLE GROVE ROAD
SCOON ROAD
SUNNYSIDE-GRANGER HIGHWAY
SUNNYSIDE-NOXON ROAD
SWAN ROAD
SOUTH 16TH STREET
SOUTH 10TH STREET
SOUTH 6TH STREET
SOUTH 4TH STREET
SOUTH 1ST STREET
SOUTH 1ST PLACE
SOUTH 2ND PLACE
SOUTH 3RD PLACE
SOUTH 4TH PLACE
SOUTH 5TH PLACE
SOUTH 6TH PLACE
SOUTH 7TH PLACE
SOUTH 8TH PLACE
SOUTH 9TH PLACE
SOUTH 10TH PLACE
SOUTH 11TH PLACE
SOUTH 12TH PLACE
SOUTH 13TH PLACE
SOUTH 14TH PLACE
SOUTH 15TH PLACE
SOUTH 16TH PLACE
SOUTH 17TH PLACE
SOUTH 18TH PLACE
SOUTH 19TH PLACE
SOUTH 20TH PLACE
SOUTH 21ST PLACE
SOUTH 22ND PLACE
SOUTH 23RD PLACE
SOUTH 24TH PLACE
SOUTH 25TH PLACE
SOUTH 26TH PLACE
SOUTH 27TH PLACE
SOUTH 28TH PLACE
SOUTH 29TH PLACE
SOUTH 30TH PLACE
SOUTH 31ST PLACE
SOUTH 32ND PLACE
SOUTH 33RD PLACE
SOUTH 34TH PLACE
SOUTH 35TH PLACE
SOUTH 36TH PLACE
SOUTH 37TH PLACE
SOUTH 38TH PLACE
SOUTH 39TH PLACE
SOUTH 40TH PLACE
SOUTH 41ST PLACE
SOUTH 42ND PLACE
SOUTH 43RD PLACE
SOUTH 44TH PLACE
SOUTH 45TH PLACE
SOUTH 46TH PLACE
SOUTH 47TH PLACE
SOUTH 48TH PLACE
SOUTH 49TH PLACE
SOUTH 50TH PLACE
SOUTH 51ST PLACE
SOUTH 52ND PLACE
SOUTH 53RD PLACE
SOUTH 54TH PLACE
SOUTH 55TH PLACE
SOUTH 56TH PLACE
SOUTH 57TH PLACE
SOUTH 58TH PLACE
SOUTH 59TH PLACE
SOUTH 60TH PLACE
SOUTH 61ST PLACE
SOUTH 62ND PLACE
SOUTH 63RD PLACE
SOUTH 64TH PLACE
SOUTH 65TH PLACE
SOUTH 66TH PLACE
SOUTH 67TH PLACE
SOUTH 68TH PLACE
SOUTH 69TH PLACE
SOUTH 70TH PLACE
SOUTH 71ST PLACE
SOUTH 72ND PLACE
SOUTH 73RD PLACE
SOUTH 74TH PLACE
SOUTH 75TH PLACE
SOUTH 76TH PLACE
SOUTH 77TH PLACE
SOUTH 78TH PLACE
SOUTH 79TH PLACE
SOUTH 80TH PLACE
SOUTH 81ST PLACE
SOUTH 82ND PLACE
SOUTH 83RD PLACE
SOUTH 84TH PLACE
SOUTH 85TH PLACE
SOUTH 86TH PLACE
SOUTH 87TH PLACE
SOUTH 88TH PLACE
SOUTH 89TH PLACE
SOUTH 90TH PLACE
SOUTH 91ST PLACE
SOUTH 92ND PLACE
SOUTH 93RD PLACE
SOUTH 94TH PLACE
SOUTH 95TH PLACE
SOUTH 96TH PLACE
SOUTH 97TH PLACE
SOUTH 98TH PLACE
SOUTH 99TH PLACE
SOUTH 100TH PLACE
SOUTH 101ST PLACE
SOUTH 102ND PLACE
SOUTH 103RD PLACE
SOUTH 104TH PLACE
SOUTH 105TH PLACE
SOUTH 106TH PLACE
SOUTH 107TH PLACE
SOUTH 108TH PLACE
SOUTH 109TH PLACE
SOUTH 110TH PLACE
SOUTH 111TH PLACE
SOUTH 112TH PLACE
SOUTH 113TH PLACE
SOUTH 114TH PLACE
SOUTH 115TH PLACE
SOUTH 116TH PLACE
SOUTH 117TH PLACE
SOUTH 118TH PLACE
SOUTH 119TH PLACE
SOUTH 120TH PLACE
SOUTH 121ST PLACE
SOUTH 122ND PLACE
SOUTH 123RD PLACE
SOUTH 124TH PLACE
SOUTH 125TH PLACE
SOUTH 126TH PLACE
SOUTH 127TH PLACE
SOUTH 128TH PLACE
SOUTH 129TH PLACE
SOUTH 130TH PLACE
SOUTH 131ST PLACE
SOUTH 132ND PLACE
SOUTH 133RD PLACE
SOUTH 134TH PLACE
SOUTH 135TH PLACE
SOUTH 136TH PLACE
SOUTH 137TH PLACE
SOUTH 138TH PLACE
SOUTH 139TH PLACE
SOUTH 140TH PLACE
SOUTH 141ST PLACE
SOUTH 142ND PLACE
SOUTH 143RD PLACE
SOUTH 144TH PLACE
SOUTH 145TH PLACE
SOUTH 146TH PLACE
SOUTH 147TH PLACE
SOUTH 148TH PLACE
SOUTH 149TH PLACE
SOUTH 150TH PLACE
SOUTH 151ST PLACE
SOUTH 152ND PLACE
SOUTH 153RD PLACE
SOUTH 154TH PLACE
SOUTH 155TH PLACE
SOUTH 156TH PLACE
SOUTH 157TH PLACE
SOUTH 158TH PLACE
SOUTH 159TH PLACE
SOUTH 160TH PLACE
SOUTH 161ST PLACE
SOUTH 162ND PLACE
SOUTH 163RD PLACE
SOUTH 164TH PLACE
SOUTH 165TH PLACE
SOUTH 166TH PLACE
SOUTH 167TH PLACE
SOUTH 168TH PLACE
SOUTH 169TH PLACE
SOUTH 170TH PLACE
SOUTH 171ST PLACE
SOUTH 172ND PLACE
SOUTH 173RD PLACE
SOUTH 174TH PLACE
SOUTH 175TH PLACE
SOUTH 176TH PLACE
SOUTH 177TH PLACE
SOUTH 178TH PLACE
SOUTH 179TH PLACE
SOUTH 180TH PLACE
SOUTH 181ST PLACE
SOUTH 182ND PLACE
SOUTH 183RD PLACE
SOUTH 184TH PLACE
SOUTH 185TH PLACE
SOUTH 186TH PLACE
SOUTH 187TH PLACE
SOUTH 188TH PLACE
SOUTH 189TH PLACE
SOUTH 190TH PLACE
SOUTH 191ST PLACE
SOUTH 192ND PLACE
SOUTH 193RD PLACE
SOUTH 194TH PLACE
SOUTH 195TH PLACE
SOUTH 196TH PLACE
SOUTH 197TH PLACE
SOUTH 198TH PLACE
SOUTH 199TH PLACE
SOUTH 200TH PLACE
SOUTH 201ST PLACE
SOUTH 202ND PLACE
SOUTH 203RD PLACE
SOUTH 204TH PLACE
SOUTH 205TH PLACE
SOUTH 206TH PLACE
SOUTH 207TH PLACE
SOUTH 208TH PLACE
SOUTH 209TH PLACE
SOUTH 210TH PLACE
SOUTH 211TH PLACE
SOUTH 212TH PLACE
SOUTH 213TH PLACE
SOUTH 214TH PLACE
SOUTH 215TH PLACE
SOUTH 216TH PLACE
SOUTH 217TH PLACE
SOUTH 218TH PLACE
SOUTH 219TH PLACE
SOUTH 220TH PLACE
SOUTH 221ST PLACE
SOUTH 222ND PLACE
SOUTH 223RD PLACE
SOUTH 224TH PLACE
SOUTH 225TH PLACE
SOUTH 226TH PLACE
SOUTH 227TH PLACE
SOUTH 228TH PLACE
SOUTH 229TH PLACE
SOUTH 230TH PLACE
SOUTH 231ST PLACE
SOUTH 232ND PLACE
SOUTH 233RD PLACE
SOUTH 234TH PLACE
SOUTH 235TH PLACE
SOUTH 236TH PLACE
SOUTH 237TH PLACE
SOUTH 238TH PLACE
SOUTH 239TH PLACE
SOUTH 240TH PLACE
SOUTH 241ST PLACE
SOUTH 242ND PLACE
SOUTH 243RD PLACE
SOUTH 244TH PLACE
SOUTH 245TH PLACE
SOUTH 246TH PLACE
SOUTH 247TH PLACE
SOUTH 248TH PLACE
SOUTH 249TH PLACE
SOUTH 250TH PLACE
SOUTH 251ST PLACE
SOUTH 252ND PLACE
SOUTH 253RD PLACE
SOUTH 254TH PLACE
SOUTH 255TH PLACE
SOUTH 256TH PLACE
SOUTH 257TH PLACE
SOUTH 258TH PLACE
SOUTH 259TH PLACE
SOUTH 260TH PLACE
SOUTH 261ST PLACE
SOUTH 262ND PLACE
SOUTH 263RD PLACE
SOUTH 264TH PLACE
SOUTH 265TH PLACE
SOUTH 266TH PLACE
SOUTH 267TH PLACE
SOUTH 268TH PLACE
SOUTH 269TH PLACE
SOUTH 270TH PLACE
SOUTH 271ST PLACE
SOUTH 272ND PLACE
SOUTH 273RD PLACE
SOUTH 274TH PLACE
SOUTH 275TH PLACE
SOUTH 276TH PLACE
SOUTH 277TH PLACE
SOUTH 278TH PLACE
SOUTH 279TH PLACE
SOUTH 280TH PLACE
SOUTH 281ST PLACE
SOUTH 282ND PLACE
SOUTH 283RD PLACE
SOUTH 284TH PLACE
SOUTH 285TH PLACE
SOUTH 286TH PLACE
SOUTH 287TH PLACE
SOUTH 288TH PLACE
SOUTH 289TH PLACE
SOUTH 290TH PLACE
SOUTH 291ST PLACE
SOUTH 292ND PLACE
SOUTH 293RD PLACE
SOUTH 294TH PLACE
SOUTH 295TH PLACE
SOUTH 296TH PLACE
SOUTH 297TH PLACE
SOUTH 298TH PLACE
SOUTH 299TH PLACE
SOUTH 300TH PLACE
SOUTH 301ST PLACE
SOUTH 302ND PLACE
SOUTH 303RD PLACE
SOUTH 304TH PLACE
SOUTH 305TH PLACE
SOUTH 306TH PLACE
SOUTH 307TH PLACE
SOUTH 308TH PLACE
SOUTH 309TH PLACE
SOUTH 310TH PLACE
SOUTH 311TH PLACE
SOUTH 312TH PLACE
SOUTH 313TH PLACE
SOUTH 314TH PLACE
SOUTH 315TH PLACE
SOUTH 316TH PLACE
SOUTH 317TH PLACE
SOUTH 318TH PLACE
SOUTH 319TH PLACE
SOUTH 320TH PLACE
SOUTH 321ST PLACE
SOUTH 322ND PLACE
SOUTH 323RD PLACE
SOUTH 324TH PLACE
SOUTH 325TH PLACE
SOUTH 326TH PLACE
SOUTH 327TH PLACE
SOUTH 328TH PLACE
SOUTH 329TH PLACE
SOUTH 330TH PLACE
SOUTH 331ST PLACE
SOUTH 332ND PLACE
SOUTH 333RD PLACE
SOUTH 334TH PLACE
SOUTH 335TH PLACE
SOUTH 336TH PLACE
SOUTH 337TH PLACE
SOUTH 338TH PLACE
SOUTH 339TH PLACE
SOUTH 340TH PLACE
SOUTH 341ST PLACE
SOUTH 342ND PLACE
SOUTH 343RD PLACE
SOUTH 344TH PLACE
SOUTH 345TH PLACE
SOUTH 346TH PLACE
SOUTH 347TH PLACE
SOUTH 348TH PLACE
SOUTH 349TH PLACE
SOUTH 350TH PLACE
SOUTH 351ST PLACE
SOUTH 352ND PLACE
SOUTH 353RD PLACE
SOUTH 354TH PLACE
SOUTH 355TH PLACE
SOUTH 356TH PLACE
SOUTH 357TH PLACE
SOUTH 358TH PLACE
SOUTH 359TH PLACE
SOUTH 360TH PLACE
SOUTH 361ST PLACE
SOUTH 362ND PLACE
SOUTH 363RD PLACE
SOUTH 364TH PLACE
SOUTH 365TH PLACE
SOUTH 366TH PLACE
SOUTH 367TH PLACE
SOUTH 368TH PLACE
SOUTH 369TH PLACE
SOUTH 370TH PLACE
SOUTH 371ST PLACE
SOUTH 372ND PLACE
SOUTH 373RD PLACE
SOUTH 374TH PLACE
SOUTH 375TH PLACE
SOUTH 376TH PLACE
SOUTH 377TH PLACE
SOUTH 378TH PLACE
SOUTH 379TH PLACE
SOUTH 380TH PLACE
SOUTH 381ST PLACE
SOUTH 382ND PLACE
SOUTH 383RD PLACE
SOUTH 384TH PLACE
SOUTH 385TH PLACE
SOUTH 386TH PLACE
SOUTH 387TH PLACE
SOUTH 388TH PLACE
SOUTH 389TH PLACE
SOUTH 390TH PLACE
SOUTH 391ST PLACE
SOUTH 392ND PLACE
SOUTH 393RD PLACE
SOUTH 394TH PLACE
SOUTH 395TH PLACE
SOUTH 396TH PLACE
SOUTH 397TH PLACE
SOUTH 398TH PLACE
SOUTH 399TH PLACE
SOUTH 400TH PLACE
SOUTH 401ST PLACE
SOUTH 402ND PLACE
SOUTH 403RD PLACE
SOUTH 404TH PLACE
SOUTH 405TH PLACE
SOUTH 406TH PLACE
SOUTH 407TH PLACE
SOUTH 408TH PLACE
SOUTH 409TH PLACE
SOUTH 410TH PLACE
SOUTH 411TH PLACE
SOUTH 412TH PLACE
SOUTH 413TH PLACE
SOUTH 414TH PLACE
SOUTH 415TH PLACE
SOUTH 416TH PLACE
SOUTH 417TH PLACE
SOUTH 418TH PLACE
SOUTH 419TH PLACE
SOUTH 420TH PLACE
SOUTH 421ST PLACE
SOUTH 422ND PLACE
SOUTH 423RD PLACE
SOUTH 424TH PLACE
SOUTH 425TH PLACE
SOUTH 426TH PLACE
SOUTH 427TH PLACE
SOUTH 428TH PLACE
SOUTH 429TH PLACE
SOUTH 430TH PLACE
SOUTH 431ST PLACE
SOUTH 432ND PLACE
SOUTH 433RD PLACE
SOUTH 434TH PLACE
SOUTH 435TH PLACE
SOUTH 436TH PLACE
SOUTH 437TH PLACE
SOUTH 438TH PLACE
SOUTH 439TH PLACE
SOUTH 440TH PLACE
SOUTH 441ST PLACE
SOUTH 442ND PLACE
SOUTH 443RD PLACE
SOUTH 444TH PLACE
SOUTH 445TH PLACE
SOUTH 446TH PLACE
SOUTH 447TH PLACE
SOUTH 448TH PLACE
SOUTH 449TH PLACE
SOUTH 450TH PLACE
SOUTH 451ST PLACE
SOUTH 452ND PLACE
SOUTH 453RD PLACE
SOUTH 454TH PLACE
SOUTH 455TH PLACE
SOUTH 456TH PLACE
SOUTH 457TH PLACE
SOUTH 458TH PLACE
SOUTH 459TH PLACE
SOUTH 460TH PLACE
SOUTH 461ST PLACE
SOUTH 462ND PLACE
SOUTH 463RD PLACE
SOUTH 464TH PLACE
SOUTH 465TH PLACE
SOUTH 466TH PLACE
SOUTH 467TH PLACE
SOUTH 468TH PLACE
SOUTH 469TH PLACE
SOUTH 470TH PLACE
SOUTH 471ST PLACE
SOUTH 472ND PLACE
SOUTH 473RD PLACE
SOUTH 474TH PLACE
SOUTH 475TH PLACE
SOUTH 476TH PLACE
SOUTH 477TH PLACE
SOUTH 478TH PLACE
SOUTH 479TH PLACE
SOUTH 480TH PLACE
SOUTH 481ST PLACE
SOUTH 482ND PLACE
SOUTH 483RD PLACE
SOUTH 484TH PLACE
SOUTH 485TH PLACE
SOUTH 486TH PLACE
SOUTH 487TH PLACE
SOUTH 488TH PLACE
SOUTH 489TH PLACE
SOUTH 490TH PLACE
SOUTH 491ST PLACE
SOUTH 492ND PLACE
SOUTH 493RD PLACE
SOUTH 494TH PLACE
SOUTH 495TH PLACE
SOUTH 496TH PLACE
SOUTH 497TH PLACE
SOUTH 498TH PLACE
SOUTH 499TH PLACE
SOUTH 500TH PLACE
SOUTH 501ST PLACE
SOUTH 502ND PLACE
SOUTH 503RD PLACE
SOUTH 504TH PLACE
SOUTH 505TH PLACE
SOUTH 506TH PLACE
SOUTH 507TH PLACE
SOUTH 508TH PLACE
SOUTH 509TH PLACE
SOUTH 510TH PLACE
SOUTH 511TH PLACE
SOUTH 512TH PLACE
SOUTH 513TH PLACE
SOUTH 514TH PLACE
SOUTH 515TH PLACE
SOUTH 516TH PLACE
SOUTH 517TH PLACE
SOUTH 518TH PLACE
SOUTH 519TH PLACE
SOUTH 520TH PLACE
SOUTH 521ST PLACE
SOUTH 522ND PLACE
SOUTH 523RD PLACE
SOUTH 524TH PLACE
SOUTH 525TH PLACE
SOUTH 526TH PLACE
SOUTH 527TH PLACE
SOUTH 528TH PLACE
SOUTH 529TH PLACE
SOUTH 530TH PLACE
SOUTH 531ST PLACE
SOUTH 532ND PLACE
SOUTH 533RD PLACE
SOUTH 534TH PLACE
SOUTH 535TH PLACE
SOUTH 536TH PLACE
SOUTH 537TH PLACE
SOUTH 538TH PLACE
SOUTH 539TH PLACE
SOUTH 540TH PLACE
SOUTH 541ST PLACE
SOUTH 542ND PLACE
SOUTH 543RD PLACE
SOUTH 544TH PLACE
SOUTH 545TH PLACE
SOUTH 546TH PLACE
SOUTH 547TH PLACE
SOUTH 548TH PLACE
SOUTH 549TH PLACE
SOUTH 550TH PLACE
SOUTH 551ST PLACE
SOUTH 552ND PLACE
SOUTH 553RD PLACE
SOUTH 554TH PLACE
SOUTH 555TH PLACE
SOUTH 556TH PLACE
SOUTH 557TH PLACE
SOUTH 558TH PLACE
SOUTH 559TH PLACE
SOUTH 560TH PLACE
SOUTH 561ST PLACE
SOUTH 562ND PLACE
SOUTH 563RD PLACE
SOUTH 564TH PLACE
SOUTH 565TH PLACE
SOUTH 566TH PLACE
SOUTH 567TH PLACE
SOUTH 568TH PLACE
SOUTH 569TH PLACE
SOUTH 570TH PLACE
SOUTH 571ST PLACE
SOUTH 572ND PLACE
SOUTH 573RD PLACE
SOUTH 574TH PLACE
SOUTH 575TH PLACE
SOUTH 576TH PLACE
SOUTH 577TH PLACE
SOUTH 578TH PLACE
SOUTH 579TH PLACE
SOUTH 580TH PLACE
SOUTH 581ST PLACE
SOUTH 582ND PLACE
SOUTH 583RD PLACE
SOUTH 584TH PLACE
SOUTH 585TH PLACE
SOUTH 586TH PLACE
SOUTH 587TH PLACE
SOUTH 588TH PLACE
SOUTH 589TH PLACE
SOUTH 590TH PLACE
SOUTH 591ST PLACE
SOUTH 592ND PLACE
SOUTH 593RD PLACE
SOUTH 594TH PLACE
SOUTH 595TH PLACE
SOUTH 596TH PLACE
SOUTH 597TH PLACE
SOUTH 598TH PLACE
SOUTH 599TH PLACE
SOUTH 600TH PLACE
SOUTH 601ST PLACE
SOUTH 602ND PLACE
SOUTH 603RD PLACE
SOUTH 604TH PLACE
SOUTH 605TH PLACE
SOUTH 606TH PLACE
SOUTH 607TH PLACE
SOUTH 608TH PLACE
SOUTH 609TH PLACE
SOUTH 610TH PLACE
SOUTH 611TH PLACE
SOUTH 612TH PLACE
SOUTH 613TH PLACE
SOUTH 614TH PLACE
SOUTH 615TH PLACE
SOUTH 616TH PLACE
SOUTH 617TH PLACE
SOUTH 618TH PLACE
SOUTH 619TH PLACE
SOUTH 620TH PLACE
SOUTH 621ST PLACE
SOUTH 622ND PLACE
SOUTH 623RD PLACE
SOUTH 624TH PLACE
SOUTH 625TH PLACE
SOUTH 626TH PLACE
SOUTH 627TH PLACE
SOUTH 628TH PLACE
SOUTH 629TH PLACE
SOUTH 630TH PLACE
SOUTH 631ST PLACE
SOUTH 632ND PLACE
SOUTH 633RD PLACE
SOUTH 634TH PLACE
SOUTH 635TH PLACE
SOUTH 636TH PLACE
SOUTH 637TH PLACE
SOUTH 638TH PLACE
SOUTH 639TH PLACE
SOUTH 640TH PLACE
SOUTH 641ST PLACE
SOUTH 642ND PLACE
SOUTH 643RD PLACE
SOUTH 644TH PLACE
SOUTH 645TH PLACE
SOUTH 646TH PLACE
SOUTH 647TH PLACE
SOUTH 648TH PLACE
SOUTH 649TH PLACE
SOUTH 650TH PLACE
SOUTH 651ST PLACE
SOUTH 652ND PLACE
SOUTH 653RD PLACE
SOUTH 654TH PLACE
SOUTH 655TH PLACE
SOUTH 656TH PLACE
SOUTH 657TH PLACE
SOUTH 658TH PLACE
SOUTH 659TH PLACE
SOUTH 660TH PLACE
SOUTH 661ST PLACE
SOUTH 662ND PLACE
SOUTH 663RD PLACE
SOUTH 664TH PLACE
SOUTH 665TH PLACE
SOUTH 666TH PLACE
SOUTH 667TH PLACE
SOUTH 668TH PLACE
SOUTH 669TH PLACE
SOUTH 670TH PLACE
SOUTH 671ST PLACE
SOUTH 672ND PLACE
SOUTH 673RD PLACE
SOUTH 674TH PLACE
SOUTH 675TH PLACE
SOUTH 676TH PLACE
SOUTH 677TH PLACE
SOUTH 678TH PLACE
SOUTH 679TH PLACE
SOUTH 680TH PLACE
SOUTH 681ST PLACE
SOUTH 682ND PLACE
SOUTH 683RD PLACE
SOUTH 684TH PLACE
SOUTH 685TH PLACE
SOUTH 686TH PLACE
SOUTH 687TH PLACE
SOUTH 688TH PLACE
SOUTH 689TH PLACE
SOUTH 690TH PLACE
SOUTH 691ST PLACE
SOUTH 692ND PLACE
SOUTH 693RD PLACE
SOUTH 694TH PLACE
SOUTH 695TH PLACE
SOUTH 696TH PLACE
SOUTH 697TH PLACE
SOUTH 698TH PLACE
SOUTH 699TH PLACE
SOUTH 700TH PLACE
SOUTH 701ST PLACE
SOUTH 702ND PLACE
SOUTH 703RD PLACE
SOUTH 704TH PLACE
SOUTH 705TH PLACE
SOUTH 706TH PLACE
SOUTH 707TH PLACE
SOUTH 708TH PLACE
SOUTH 709TH PLACE
SOUTH 710TH PLACE
SOUTH 711TH PLACE
SOUTH 712TH PLACE
SOUTH 713TH PLACE
SOUTH 714TH PLACE
SOUTH 715TH PLACE
SOUTH 716TH PLACE
SOUTH 717TH PLACE
SOUTH 718TH PLACE
SOUTH 719TH PLACE
SOUTH 720TH PLACE
SOUTH 721ST PLACE
SOUTH 722ND PLACE
SOUTH 723RD PLACE
SOUTH 724TH PLACE
SOUTH 725TH PLACE
SOUTH 726TH PLACE
SOUTH 727TH PLACE
SOUTH 728TH PLACE
SOUTH 729TH PLACE
SOUTH 730TH PLACE
SOUTH 731ST PLACE
SOUTH 732ND PLACE
SOUTH 733RD PLACE
SOUTH 734TH PLACE
SOUTH 735TH PLACE
SOUTH 736TH PLACE
SOUTH 737TH PLACE
SOUTH 738TH PLACE
SOUTH 739TH PLACE
SOUTH 740TH PLACE
SOUTH 741ST PLACE
SOUTH 742ND PLACE
SOUTH 743RD PLACE
SOUTH 744TH PLACE
SOUTH 745TH PLACE
SOUTH 746TH PLACE
SOUTH 747TH PLACE
SOUTH 748TH PLACE
SOUTH 749TH PLACE
SOUTH 750TH PLACE
SOUTH 751ST PLACE
SOUTH 752ND PLACE
SOUTH 753RD PLACE
SOUTH 754TH PLACE
SOUTH 755TH PLACE
SOUTH 756TH PLACE
SOUTH 757TH PLACE
SOUTH 758TH PLACE
SOUTH 759TH PLACE
SOUTH 760TH PLACE
SOUTH 761ST PLACE
SOUTH 762ND PLACE
SOUTH 763RD PLACE
SOUTH 764TH PLACE
SOUTH 765TH PLACE
SOUTH 766TH PLACE
SOUTH 767TH PLACE
SOUTH 768TH PLACE
SOUTH 769TH PLACE
SOUTH 770TH PLACE
SOUTH 771ST PLACE
SOUTH 772ND PLACE
SOUTH 773RD PLACE
SOUTH 774TH PLACE
SOUTH 775TH PLACE
SOUTH 776TH PLACE
SOUTH 777TH PLACE
SOUTH 778TH PLACE
SOUTH 779TH PLACE
SOUTH 780TH PLACE
SOUTH 781ST PLACE
SOUTH 782ND PLACE
SOUTH 783RD PLACE
SOUTH 784TH PLACE
SOUTH 785TH PLACE
SOUTH 786TH PLACE
SOUTH 787TH PLACE
SOUTH 788TH PLACE
SOUTH 789TH PLACE
SOUTH 790TH PLACE
SOUTH 791ST PLACE
SOUTH 792ND PLACE
SOUTH 793RD PLACE
SOUTH 794TH PLACE
SOUTH 795TH PLACE
SOUTH 796TH PLACE
SOUTH 797TH PLACE
SOUTH 798TH PLACE
SOUTH 799TH PLACE
SOUTH 800TH PLACE
SOUTH 801ST PLACE
SOUTH 802ND PLACE
SOUTH 803RD PLACE
SOUTH 804TH PLACE
SOUTH 805TH PLACE
SOUTH 806TH PLACE
SOUTH 807TH PLACE
SOUTH 808TH PLACE
SOUTH 809TH PLACE
SOUTH 810TH PLACE
SOUTH 811TH PLACE
SOUTH 812TH PLACE
SOUTH 813TH PLACE
SOUTH 814TH PLACE
SOUTH 815TH PLACE
SOUTH 816TH PLACE
SOUTH 817TH PLACE
SOUTH 818TH PLACE
SOUTH 819TH PLACE
SOUTH 820TH PLACE
SOUTH 821ST PLACE
SOUTH 822ND PLACE
SOUTH 823RD PLACE
SOUTH 824TH PLACE
SOUTH 825TH PLACE
SOUTH 826TH PLACE
SOUTH 827TH PLACE
SOUTH 828TH PLACE
SOUTH 829TH PLACE
SOUTH 830TH PLACE
SOUTH 831ST PLACE
SOUTH 832ND PLACE
SOUTH 833RD PLACE
SOUTH 834TH PLACE
SOUTH 835TH PLACE
SOUTH 836TH PLACE
SOUTH 837TH PLACE
SOUTH 838TH PLACE
SOUTH 839TH PLACE
SOUTH 840TH PLACE
SOUTH 841ST PLACE
SOUTH 842ND PLACE
SOUTH 843RD PLACE
SOUTH 844TH PLACE
SOUTH 845TH PLACE
SOUTH 846TH PLACE
SOUTH 847TH PLACE
SOUTH 848TH PLACE
SOUTH 849TH PLACE
SOUTH 850TH PLACE
SOUTH 851ST PLACE
SOUTH 852ND PLACE
SOUTH 853RD PLACE
SOUTH 854TH PLACE
SOUTH 855TH PLACE
SOUTH 856TH PLACE
SOUTH 857TH PLACE
SOUTH 858TH PLACE
SOUTH 859TH PLACE
SOUTH 860TH PLACE
SOUTH 861ST PLACE
SOUTH 862ND PLACE
SOUTH 863RD PLACE
SOUTH 864TH PLACE
SOUTH 865TH PLACE
SOUTH 866TH PLACE
SOUTH 867TH PLACE
SOUTH 868TH PLACE
SOUTH 869TH PLACE
SOUTH 870TH PLACE
SOUTH 871ST PLACE
SOUTH 872ND PLACE
SOUTH 873RD PLACE
SOUTH 874TH PLACE
SOUTH 875TH PLACE
SOUTH 876TH PLACE
SOUTH 877TH PLACE
SOUTH 878TH PLACE
SOUTH 879TH PLACE
SOUTH 880TH PLACE
SOUTH 881ST PLACE
SOUTH 882ND PLACE
SOUTH 883RD PLACE
SOUTH 884TH PLACE
SOUTH 885TH PLACE
SOUTH 886TH PLACE
SOUTH 887TH PLACE
SOUTH 888TH PLACE
SOUTH 889TH PLACE
SOUTH 890TH PLACE
SOUTH 891ST PLACE
SOUTH 892ND PLACE
SOUTH 893RD PLACE
SOUTH 894TH PLACE
SOUTH 895TH PLACE
SOUTH 896TH PLACE
SOUTH 897TH PLACE
SOUTH 898TH PLACE
SOUTH 899TH PLACE
SOUTH 900TH PLACE
SOUTH 901ST PLACE
SOUTH 902ND PLACE
SOUTH 903RD PLACE
SOUTH 904TH PLACE
SOUTH 905TH PLACE
SOUTH 906TH PLACE
SOUTH 907TH PLACE
SOUTH 908TH PLACE
SOUTH 909TH PLACE
SOUTH 910TH PLACE
SOUTH 911TH PLACE
SOUTH 912TH PLACE
SOUTH 913TH PLACE
SOUTH 914TH PLACE
SOUTH 915TH PLACE
SOUTH 916TH PLACE
SOUTH 917TH PLACE
SOUTH 918TH PLACE
SOUTH 919TH PLACE
SOUTH 920TH PLACE
SOUTH 921ST PLACE
SOUTH 922ND PLACE
SOUTH 923RD PLACE
SOUTH 924TH PLACE
SOUTH 925TH PLACE
SOUTH 926TH PLACE
SOUTH 927TH PLACE
SOUTH 928TH PLACE
SOUTH 929TH PLACE
SOUTH 930TH PLACE
SOUTH 931ST PLACE
SOUTH 932ND PLACE
SOUTH 933RD PLACE
SOUTH 934TH PLACE
SOUTH 935TH PLACE
SOUTH 936TH PLACE
SOUTH 937TH PLACE
SOUTH 938TH PLACE
SOUTH 939TH PLACE
SOUTH 940TH PLACE
SOUTH 941ST PLACE
SOUTH 942ND PLACE
SOUTH 943RD PLACE
SOUTH 944TH PLACE
SOUTH 945TH PLACE
SOUTH 946TH PLACE
SOUTH 947TH PLACE
SOUTH 948TH PLACE
SOUTH 949TH PLACE
SOUTH 950TH PLACE
SOUTH 951ST PLACE
SOUTH 952ND PLACE
SOUTH 953RD PLACE
SOUTH 954TH PLACE
SOUTH 955TH PLACE
SOUTH 956TH PLACE
SOUTH 957TH PLACE
SOUTH 958TH PLACE
SOUTH 959TH PLACE
SOUTH 960TH PLACE
SOUTH 961ST PLACE
SOUTH 962ND PLACE
SOUTH 963RD PLACE
SOUTH 964TH PLACE
SOUTH 965TH PLACE
SOUTH 966TH PLACE
SOUTH 967TH PLACE
SOUTH 968TH PLACE
SOUTH 969TH PLACE
SOUTH 970TH PLACE
SOUTH 971ST PLACE
SOUTH 972ND PLACE
SOUTH 973RD PLACE
SOUTH 974TH PLACE
SOUTH 975TH PLACE
SOUTH 976TH PLACE
SOUTH 977TH PLACE
SOUTH 978TH PLACE
SOUTH 979TH PLACE
SOUTH 980TH PLACE
SOUTH 981ST PLACE
SOUTH 982ND PLACE
SOUTH 983RD PLACE
SOUTH 984TH PLACE
SOUTH 985TH PLACE
SOUTH 986TH PLACE
SOUTH 987TH PLACE
SOUTH 988TH PLACE
SOUTH 989TH PLACE
SOUTH 990TH PLACE
SOUTH 991ST PLACE
SOUTH 992ND PLACE
SOUTH 993RD PLACE
SOUTH 994TH PLACE
SOUTH 995TH PLACE
SOUTH 996TH PLACE
SOUTH 997TH PLACE
SOUTH 998TH PLACE
SOUTH 999TH PLACE
SOUTH 1000TH PLACE
SOUTH 1001ST PLACE
SOUTH 1002ND PLACE
SOUTH 1003RD PLACE
SOUTH 1004TH PLACE
SOUTH 1005TH PLACE
SOUTH 1006TH PLACE
SOUTH 1007TH PLACE
SOUTH 1008TH PLACE
SOUTH 1009TH PLACE
SOUTH 1010TH PLACE
SOUTH 1011TH PLACE
SOUTH 1012TH PLACE
SOUTH 1013TH PLACE
SOUTH 1014TH PLACE
SOUTH 1015TH PLACE
SOUTH 1016TH PLACE
SOUTH 1017TH PLACE
SOUTH 1018TH PLACE
SOUTH 1019TH PLACE
SOUTH 1020TH PLACE
SOUTH 1021ST PLACE
SOUTH 1022ND PLACE
SOUTH 1023RD PLACE
SOUTH 1024TH PLACE
SOUTH 1025TH PLACE
SOUTH 1026TH PLACE
SOUTH 1027TH PLACE
SOUTH 1028TH PLACE
SOUTH 1029TH PLACE
SOUTH 1030TH PLACE
SOUTH 1031ST PLACE
SOUTH 1032ND PLACE
SOUTH 1033RD PLACE
SOUTH 1034TH PLACE
SOUTH 1035TH PLACE
SOUTH 1036TH PLACE
SOUTH 1037TH PLACE
SOUTH 1038TH PLACE
SOUTH 1039TH PLACE
SOUTH 1040TH PLACE
SOUTH 1041ST PLACE
SOUTH 1042ND PLACE
SOUTH 1043RD PLACE
SOUTH 1044TH PLACE
SOUTH 1045TH PLACE
SOUTH 1046TH PLACE
SOUTH 1047TH PLACE
SOUTH 1048TH PLACE
SOUTH 1049TH PLACE
SOUTH 1050TH PLACE
SOUTH 1051ST PLACE
SOUTH 1052ND PLACE
SOUTH 1053RD PLACE
SOUTH 1054TH PLACE
SOUTH 1055TH PLACE
SOUTH 1056TH PLACE
SOUTH 1057TH PLACE
SOUTH 1058TH PLACE
SOUTH 1059TH PLACE
SOUTH 1060TH PLACE
SOUTH 1061ST PLACE
SOUTH 1062ND PLACE
SOUTH 1063RD PLACE
SOUTH 1064TH PLACE
SOUTH 1065TH PLACE
SOUTH 1066TH PLACE
SOUTH 1067TH PLACE
SOUTH 1068TH PLACE
SOUTH 1069TH PLACE
SOUTH 1070TH PLACE
SOUTH 1071ST PLACE
SOUTH 1072ND PLACE
SOUTH 1073RD PLACE
SOUTH 1074TH PLACE
SOUTH 1075TH PLACE
SOUTH 1076TH PLACE
SOUTH 1077TH PLACE
SOUTH 1078TH PLACE
SOUTH 1079TH PLACE
SOUTH 1080TH PLACE
SOUTH 1081ST PLACE
SOUTH 1082ND PLACE
SOUTH 1083RD PLACE
SOUTH 1084TH PLACE
SOUTH 1085TH PLACE
SOUTH 1086TH PLACE
SOUTH 1087TH PLACE
SOUTH 1088TH PLACE
SOUTH 1089TH PLACE
SOUTH 1090TH PLACE
SOUTH 1091ST PLACE
SOUTH 1092ND PLACE
SOUTH 1093RD PLACE
SOUTH 1094TH PLACE
SOUTH 1095TH PLACE
SOUTH 1096TH PLACE
SOUTH 1097TH PLACE
SOUTH 1098TH PLACE
SOUTH 1099TH PLACE
SOUTH 1100TH PLACE
SOUTH 1101ST PLACE
SOUTH 1102ND PLACE
SOUTH 1103RD PLACE
SOUTH 1104T

City of SUNNYSIDE WASHINGTON

15

Water Quality Monitoring Schedule (WQMS) Report

HLA Engineering and Land Surveying, Inc.

Water Quality Monitoring Schedule

System: SUNNYSIDE CITY OF **PWS ID: 85400 3** **Region: EASTERN**
Contact: Daniel R Tiliano **Group: A - Comm** **County: YAKIMA**

NOTE: To receive credit for compliance samples, you must fill out laboratory and sample paperwork completely, send your samples to a laboratory accredited by Washington State to conduct the analyses, AND ensure the results are submitted to DOH Office of Drinking Water. There is often a lag time between when you collect your sample, when we credit your system with meeting the monitoring requirement, and when we generate the new monitoring requirement.

Coliform Monitoring Requirements

	Oct 2023	Nov 2023	Dec 2023	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024
Coliform Monitoring Population	17037	17037	17037	17037	17037	17037	17037	17037	17037	17037	17037	17037
Number of Routine Samples Required	15	15	15	15	15	15	15	15	15	15	15	15

- Collect samples from representative points throughout the distribution system.
- Collect required repeat samples following an unsatisfactory sample. In addition, collect a sample from each operating groundwater source.
- For systems that chlorinate, record chlorine residual (measured when the coliform sample is collected) on the coliform lab slip.

Chemical Monitoring Requirements

Distribution Monitoring

Test Panel/Analyte	*# Samples Required*	*Compliance Period*	*Frequency*	*Last Sample Date*	*Next Sample Due*	
Lead and Copper	30	Jan 2023 - Dec 2025	standard - 3 year	08/24/2022	Aug 2025	
Asbestos	1	Jan 2020 - Dec 2028	standard - 9 year	04/24/2019	Apr 2028	
Total Trihalomethane (THM)	2	Jan 2023 - Dec 2023	reduced - 1 year	08/24/2022	***Aug 2023***	
Halo-Acetic Acids (HAA5)	2	Jan 2023 - Dec 2023	reduced - 1 year	08/24/2022	***Aug 2023***	

Water Quality Monitoring Schedule

Notes on Distribution System Chemical Monitoring

For *Lead and Copper*:
- Collect samples from the COLD WATER side of a KITCHEN or BATHROOM faucet that is used daily.
- Before sampling, make sure the water has sat unused in the pipes for at least 6 hours, but no more than 12 hours (e.g. overnight).
- If you are sampling from a faucet that has hot water, make sure cold water is the last water to run through the faucet before it sits overnight.
- If your sampling frequency is annual or every 3 years, collect samples between June 1 and September 30.

For *Asbestos:* Collect the sample from one of your routine coliform sampling sites in an area of your distribution system that has asbestos concrete pipe.

For *Disinfection Byproducts (HAA5 and THM):* Collect the samples at the locations identified in your Disinfection Byproducts (DBP) monitoring plan.

Source Monitoring

- Collect 'source' chemical monitoring samples from a tap after all treatment (if any), but before entering the distribution system.
- Washington State grants monitoring waivers for various test panels /analytes. Please note that we may require some monitoring as a condition of some waivers. We have granted complete waivers for dioxin, endothal, glyphosate, diquat, and insecticides.
- Nitrate, arsenic, iron, and other individual inorganics are included as part of a Complete Inorganic (IOC) analysis when it is collected.

Source S06 *Well #6 - AFL811* *Well* *Use - Permanent* *Susceptility - Moderate*

Test Panel/Analyte	*# Samples Required*	*Compliance Period*	*Frequency*	*Last Sample Date*	*Next Sample Due*
Nitrate	1	Jan 2023 - Dec 2023	standard - 1 year	08/24/2022	***Aug 2023***
Complete Inorganic (IOC)	1	Jan 2020 - Dec 2028	waiver - 9 year	07/06/2016	Jul 2025
Arsenic	1	Jan 2023 - Dec 2025	standard - 3 year	03/09/2021	Mar 2024
Iron	1	Jan 2023 - Dec 2025	standard - 3 year	03/09/2021	Mar 2024
Manganese	1	Jan 2023 - Dec 2025	standard - 3 year	03/09/2021	Mar 2024
Volatile Organics (VOC)	1	Jan 2023 - Dec 2028	waiver - 6 year	03/09/2021	Mar 2027
Herbicides	1	Jan 2023 - Dec 2031	waiver - 9 year	05/09/2018	May 2027
Pesticides	1	Jan 2023 - Dec 2031	waiver - 9 year	05/09/2018	May 2027
PFAS	1	Jan 2023 - Dec 2025	standard - 3 year		Feb 2025
Soil Fumigants	0	Jan 2023 - Dec 2025	waiver - 3 year	08/06/2001	
Gross Alpha	1	Jan 2020 - Dec 2025	standard - 6 year	05/12/2021	
Radium 228	1	Jan 2020 - Dec 2025	standard - 6 year	05/12/2021	

Water Quality Monitoring Schedule

Source Monitoring

- Collect 'source' chemical monitoring samples from a tap after all treatment (if any), but before entering the distribution system.
- Washington State grants monitoring waivers for various test panels /analytes. Please note that we may require some monitoring as a condition of some waivers. We have granted complete waivers for dioxin, endothal, glyphosate, diquat, and insecticides.
- Nitrate, arsenic, iron, and other individual inorganics are included as part of a Complete Inorganic (IOC) analysis when it is collected.

Source S07 *Well #7* *Well* *Use - Permanent* *Susceptility - High*

Test Panel/Analyte	*# Samples Required*	*Compliance Period*	*Frequency*	*Last Sample Date*	*Next Sample Due*	
Nitrate	1	Jan 2023 - Dec 2023	standard - 1 year	09/21/2021	***Mar 2023***	***Past Due***
Complete Inorganic (IOC)	1	Jan 2020 - Dec 2028	waiver - 9 year	10/07/2014	***Oct 2023***	
Arsenic	1	Jan 2023 - Dec 2025	standard - 3 year	03/09/2021	Mar 2024	
Manganese	1	Jan 2023 - Dec 2025	standard - 3 year	03/09/2021	Mar 2024	
Volatile Organics (VOC)	1	Jan 2023 - Dec 2025	standard - 3 year	07/21/2022	Jul 2025	
Herbicides	1	Jan 2023 - Dec 2031	waiver - 9 year	05/09/2018	May 2027	
Pesticides	1	Jan 2023 - Dec 2031	waiver - 9 year	05/09/2018	May 2027	
PFAS	1	Jan 2023 - Dec 2025	standard - 3 year		Feb 2025	
Soil Fumigants	0	Jan 2023 - Dec 2025	waiver - 3 year	08/06/2001		
Gross Alpha	1	Jan 2020 - Dec 2025	standard - 6 year	05/12/2021		
Radium 228	1	Jan 2020 - Dec 2025	standard - 6 year	05/12/2021		

Source S08 *Well #8 - AFL812* *Well* *Use - Permanent* *Susceptility - High*

Test Panel/Analyte	*# Samples Required*	*Compliance Period*	*Frequency*	*Last Sample Date*	*Next Sample Due*
Nitrate	1	Jan 2023 - Dec 2023	standard - 1 year	05/24/2023	
Complete Inorganic (IOC)	1	Jan 2020 - Dec 2028	waiver - 9 year	06/07/2016	Jun 2025
Arsenic	1	Jan 2023 - Dec 2025	standard - 3 year	03/31/2021	Mar 2024
Volatile Organics (VOC)	1	Jan 2020 - Dec 2025	waiver - 6 year	10/03/2018	Oct 2024
Herbicides	1	Jan 2023 - Dec 2025	R&C - 3 year	03/31/2021	Mar 2024
Pesticides	1	Jan 2023 - Dec 2025	standard - 3 year	03/31/2021	Mar 2024
Pesticides	1	Jan 2023 - Dec 2025	standard - 3 year	03/31/2021	Jul 2025

Water Quality Monitoring Schedule

Source Monitoring

- Collect 'source' chemical monitoring samples from a tap after all treatment (if any), but before entering the distribution system.
- Washington State grants monitoring waivers for various test panels /analytes. Please note that we may require some monitoring as a condition of some waivers. We have granted complete waivers for dioxin, endothal, glyphosate, diquat, and insecticides.
- Nitrate, arsenic, iron, and other individual inorganics are included as part of a Complete Inorganic (IOC) analysis when it is collected.

Source S08	*Well #8 - AFL812*	*Well*	*Use - Permanent*	*Susceptility - High*	
Test Panel/Analyte	*# Samples Required*	*Compliance Period*	*Frequency*	*Last Sample Date*	*Next Sample Due*
PFAS	1	Jan 2023 - Dec 2025	standard - 3 year		Feb 2025
Soil Fumigants	0	Jan 2023 - Dec 2025	waiver - 3 year	08/20/1998	
Gross Alpha	1	Jan 2020 - Dec 2025	standard - 6 year	05/12/2021	
Radium 228	1	Jan 2020 - Dec 2025	standard - 6 year	05/12/2021	

Source S09	*Well #9 - AFK905*	*Well*	*Use - Permanent*	*Susceptility - Low*	
Test Panel/Analyte	*# Samples Required*	*Compliance Period*	*Frequency*	*Last Sample Date*	*Next Sample Due*
Nitrate	1	Jan 2023 - Dec 2023	standard - 1 year	08/24/2022	***Aug 2023***
Complete Inorganic (IOC)	1	Jan 2020 - Dec 2028	waiver - 9 year	04/07/2016	Apr 2025
Arsenic	1	Jan 2023 - Dec 2025	standard - 3 year	03/09/2021	Mar 2024
Manganese	1	Jan 2023 - Dec 2025	standard - 3 year	03/09/2021	Mar 2024
Volatile Organics (VOC)	1	Jan 2020 - Dec 2025	waiver - 6 year	05/12/2021	
Herbicides	1	Jan 2023 - Dec 2031	waiver - 9 year	05/09/2022	May 2031
Pesticides	1	Jan 2023 - Dec 2031	waiver - 9 year	05/09/2022	May 2031
PFAS	1	Jan 2023 - Dec 2025	standard - 3 year		Feb 2025
Soil Fumigants	0	Jan 2023 - Dec 2025	waiver - 3 year	08/20/1998	
Radium 226 + 228	1	Jan 2023 - Dec 2031	Baseline - 9 year	09/11/2019	Sep 2028
Gross Alpha	1	Jan 2020 - Dec 2025	standard - 6 year	05/09/2018	May 2024

Water Quality Monitoring Schedule

Source Monitoring

- Collect 'source' chemical monitoring samples from a tap after all treatment (if any), but before entering the distribution system.
- Washington State grants monitoring waivers for various test panels /analytes. Please note that we may require some monitoring as a condition of some waivers. We have granted complete waivers for dioxin, endothal, glyphosate, diquat, and insecticides.
- Nitrate, arsenic, iron, and other individual inorganics are included as part of a Complete Inorganic (IOC) analysis when it is collected.

Source S11 *Well #11 - AKN517* *Well* *Use - Permanent* *Susceptility - Moderate*

Test Panel/Analyte	# Samples Required	Compliance Period	Frequency	Last Sample Date	Next Sample Due	
Nitrate	1	Jan 2023 - Dec 2023	standard - 1 year	05/24/2023		
Complete Inorganic (IOC)	1	Jan 2020 - Dec 2028	waiver - 9 year	09/21/2021		
Arsenic	1	Jan 2023 - Dec 2025	standard - 3 year	09/21/2021	Sep 2024	
Volatile Organics (VOC)	1	Jan 2020 - Dec 2025	waiver - 6 year	05/12/2021		
Herbicides	1	Jan 2023 - Dec 2031	waiver - 9 year	04/07/2016	Apr 2025	
Pesticides	1	Jan 2023 - Dec 2031	waiver - 9 year	04/07/2016	Apr 2025	
PFAS	1	Jan 2023 - Dec 2025	standard - 3 year		Feb 2025	
Soil Fumigants	0	Jan 2023 - Dec 2025	waiver - 3 year			
Gross Alpha	1	Jan 2020 - Dec 2025	standard - 6 year	04/06/2022		
Radium 228	1	Jan 2020 - Dec 2025	standard - 6 year	11/03/2016	Apr 2028	

Source S14 *Wellfield / S12, S13* *Well Field* *Use - Permanent* *Susceptility - Low*

Test Panel/Analyte	# Samples Required	Compliance Period	Frequency	Last Sample Date	Next Sample Due	
Nitrate	1	Jan 2023 - Dec 2023	standard - 1 year	08/24/2022	***Aug 2023***	
Complete Inorganic (IOC)	1	Jan 2020 - Dec 2028	waiver - 9 year	08/01/2016	Aug 2025	
Arsenic	1	Jan 2023 - Dec 2025	standard - 3 year	09/11/2019	***Mar 2023***	***Past Due***
Volatile Organics (VOC)	1	Jan 2023 - Dec 2025	standard - 3 year	07/21/2022	Mar 2024	
Herbicides	1	Jan 2023 - Dec 2031	waiver - 9 year	05/10/2016	May 2025	
Pesticides	1	Jan 2023 - Dec 2031	waiver - 9 year	05/10/2016	May 2025	
PFAS	1	Jan 2023 - Dec 2025	standard - 3 year		Feb 2025	
Soil Fumigants	0	Jan 2023 - Dec 2025	waiver - 3 year			

Water Quality Monitoring Schedule

Source Monitoring

- Collect 'source' chemical monitoring samples from a tap after all treatment (if any), but before entering the distribution system.
- Washington State grants monitoring waivers for various test panels /analytes. Please note that we may require some monitoring as a condition of some waivers. We have granted complete waivers for dioxin, endothal, glyphosate, diquat, and insecticides.
- Nitrate, arsenic, iron, and other individual inorganics are included as part of a Complete Inorganic (IOC) analysis when it is collected.

Source S14 *Wellfield / S12, S13* *Well Field* *Use - Permanent* *Susceptility - Low*

Test Panel/Analyte	*# Samples Required*	*Compliance Period*	*Frequency*	*Last Sample Date*	*Next Sample Due*
Gross Alpha	1	Jan 2020 - Dec 2025	standard - 6 year	07/05/2023	
Gross Alpha	1	Jan 2023 - Dec 2025	standard - 3 year	07/05/2023	
Radium 228	1	Jan 2020 - Dec 2025	standard - 6 year	07/05/2023	
Radium 228	1	Jan 2023 - Dec 2025	standard - 3 year	07/05/2023	

Water Quality Monitoring Schedule

Other Information

Other Reporting Schedules	*Due Date*
Measure chlorine residuals and submit monthly reports if your system uses continuous chlorination:	monthly
Submit Consumer Confidence Report (CCR) to customers and ODW (Community systems only):	07/01/2023
Submit CCR certification form to ODW (Community systems only):	10/01/2023
Submit Water Use Efficiency report online to ODW and to customers (Community and other municipal water systems only):	07/01/2023
Send notices of lead and copper sample results to the customers sampled:	30 days after you receive the laboratory results
Submit Certification of customer notification of lead and copper results to ODW:	90 days after you notify customers

Special Notes

None

Eastern Regional Water Quality Monitoring Contacts

For questions regarding chemical monitoring:	Stan Hoffman: (509) 329-2132: or Stan.Hoffman@doh.wa.gov
For questions regarding DBPs:	Stan Hoffman: or Stan.Hoffman@doh.wa.gov
For questions regarding coliform bacteria and microbial issues:	Joseph Perkins: (509) 329-2134 or Joseph.Perkins@doh.wa.gov

Additional Notes

The information on this monitoring schedule is valid as of the date in the upper left corner on the first page. However, the information may change with subsequent updates in our water quality monitoring database as we receive new data or revise monitoring schedules. There is often a lag time between when you collect your sample and when we credit your system with meeting the monitoring requirement.

We have not designed this monitoring schedule to display all compliance requirements. The purpose of this schedule is to assist water systems with planning for most water quality monitoring, and to allow systems to compare their records with DOH ODW records. Please be aware that this monitoring schedule does not include constituents that require a special monitoring frequency, such as monitoring affiliated with treatment.

Any inaccuracies on this schedule will not relieve the water system owner and operator of the requirement to comply with applicable regulations.

If you have any questions about your monitoring requirements, please contact the regional office staff listed above.

City of SUNNYSIDE WASHINGTON

16

Water Sampling Results

HLA Engineering and Land Surveying, Inc.

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
4/2/2018 0:00	154	73044	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/4/2019 0:00	154	60016	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52562	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48534	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/9/2022 0:00	154	99002	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52566	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20871	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3261	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2018 0:00	154	63122	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/14/2019 0:00	154	35063	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/11/2018 0:00	154	99163	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84831	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55736	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/24/2022 0:00	46	55735	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
6/6/2018 0:00	154	84163	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/3/2020 0:00	154	11142	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
6/1/2021 0:00	154	39801	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79263	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64227	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52354	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85691	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40973	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/4/2019 0:00	154	24709	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84025	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/8/2022 0:00	154	12192	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84834	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/9/2019 0:00	154	16585	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59996	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32592	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19255	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/1/2018 0:00	154	2053	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14177	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2017 0:00	154	51677	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84036	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19253	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2017 0:00	154	25188	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55741	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
5/2/2017 0:00	154	15178	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52563	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	154	60142	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94801	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3195	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56058	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
10/4/2021 0:00	154	56052	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48535	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64232	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85684	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90844	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38145	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3111	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/12/2017 0:00	46	19552	8		RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	HERB1	CHLOROPHENOXY HERBICIDES	No
6/14/2022 0:00	154	90833	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3192	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16156	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47865	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84833	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2018 0:00	46	33720	6	37G016	RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	HERB1	CHLOROPHENOXY HERBICIDES	No
2/4/2019 0:00	154	20885	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27514	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2018 0:00	154	2232	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/7/2020 0:00	154	80921	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/21/2021 0:00	46	69662	11		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC	COMPLETE INORGANIC ANALYSIS	No
10/2/2017 0:00	154	40971	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29941	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55739	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/1/2019 0:00	46	56047	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
3/6/2017 0:00	154	3194	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85688	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98932	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/15/2017 0:00	154	37947	9		GWR	Ground Water Rule	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89134	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56077	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
12/4/2017 0:00	154	51678	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72266	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36234	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/4/2019 0:00	154	24704	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/15/2017 0:00	154	37942	8		GWR	Ground Water Rule	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/5/2017 0:00	154	25011	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7432	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2020 0:00	154	72341	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72523	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16155	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23705	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/8/2022 0:00	154	12191	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/22/2020 0:00	154	5252	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
1/5/2021 0:00	154	19692	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/11/2019 0:00	156	87001	9		RC	Routine / Compliance	RAD	RADIONUCLIDES	RAD	RADIONUCLIDES	No
7/7/2021 0:00	154	44361	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98924	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85683	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64236	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2018 0:00	154	11515	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7045	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36227	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/2/2021 0:00	154	27553	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2018 0:00	154	63121	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3116	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90843	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76484	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2021 0:00	46	16421	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC_SHORT	INORGANIC SHORT FORM	No
6/2/2020 0:00	154	89142	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20875	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20883	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7423	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2022 0:00	154	15968	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69712	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
6/1/2017 0:00	154	19261	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/4/2020 0:00	154	98274	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36228	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3181	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2020 0:00	154	80851	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/9/2022 0:00	154	99004	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39806	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2018 0:00	154	2235	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80498	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98926	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73055	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/4/2019 0:00	154	60015	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20882	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64222	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52552	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56055	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	154	60147	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52565	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52551	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38148	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/4/2020 0:00	154	98265	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56371	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93924	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72521	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/6/2020 0:00	154	68213	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3185	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76472	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40964	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/12/2021 0:00	46	33158	9		RC	Routine / Compliance	VOC	VOLATILE ORGANIC CONTAMINANTS	VOC1	VOLATILE ORGANIC	No
4/6/2021 0:00	154	32605	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16152	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2017 0:00	154	51672	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/11/2020 0:00	46	29566	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
1/6/2020 0:00	154	68216	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/13/2019 0:00	154	34903	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/4/2019 0:00	154	24705	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/5/2020 0:00	154	84943	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19264	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68327	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2020 0:00	154	94191	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3272	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47875	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59986	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59981	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/11/2019 0:00	46	67611	14		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
11/2/2020 0:00	154	11064	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89136	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2022 0:00	154	98761	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72262	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38154	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7057	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7422	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2018 0:00	154	11352	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/4/2019 0:00	154	60014	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2022 0:00	230	9645	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
7/11/2022 0:00	154	94895	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42007	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2018 0:00	154	11513	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52351	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56384	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23693	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94803	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27512	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93927	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/11/2020 0:00	46	29566	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
5/9/2022 0:00	46	30221	9		RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	HERB1	CHLOROPHENOXY HERBICIDES	No
4/4/2022 0:00	154	80495	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42006	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11076	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7052	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2018 0:00	154	94031	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/13/2018 0:00	154	8525	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68326	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29954	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19693	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52353	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52341	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36236	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39813	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/17/2022 0:00	154	8911	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89144	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/6/2017 0:00	154	46788	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56825	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55729	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
4/6/2021 0:00	154	32595	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42017	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3115	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/25/2021 0:00	46	62890	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
1/18/2022 0:00	154	69707	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47872	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/17/2022 0:00	154	8921	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68381	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88693	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37548	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3197	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2019 0:00	154	21011	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3124	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/8/2019 0:00	46	76469	11		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
3/4/2019 0:00	154	24707	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90832	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2017 0:00	154	30796	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/4/2020 0:00	154	98262	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2018 0:00	154	11356	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	154	60141	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68386	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73052	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
10/8/2019 0:00	46	76466	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
1/18/2022 0:00	154	69706	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/4/2020 0:00	154	98266	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2022 0:00	46	58401	13	BAL875	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
11/2/2020 0:00	154	11075	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38143	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2018 0:00	46	33721	7	37G017	RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	INSECT1	CARBAMATE INSECTICIDES	No
2/4/2020 0:00	154	72272	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/4/2019 0:00	154	24702	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42004	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76474	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94805	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19702	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88688	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55714	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
11/7/2017 0:00	154	46882	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32601	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19258	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55342	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
8/23/2022 0:00	46	55717	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
4/6/2020 0:00	154	80863	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88684	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2020 0:00	154	93973	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19265	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40962	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98935	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14174	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56053	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68387	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2022 0:00	156	88001	11		RC	Routine / Compliance	RAD	RADIONUCLIDES	RAD	RADIONUCLIDES	No
6/6/2018 0:00	154	84161	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/11/2020 0:00	46	29567	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
6/4/2019 0:00	154	38156	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2019 0:00	154	24823	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55711	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
6/14/2022 0:00	154	90841	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/12/2021 0:00	112	53202	7	37G017	RC	Routine / Compliance	RAD	RADIONUCLIDES	RAD	RADIONUCLIDES	No
7/16/2018 0:00	46	53229	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
2/6/2018 0:00	154	63361	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11066	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59983	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94793	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89131	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2022 0:00	154	15965	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/18/2022 0:00	154	9033	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80504	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7431	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2018 0:00	154	11357	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/3/2018 0:00	46	76886	8		RC	Routine / Compliance	VOC	VOLATILE ORGANIC CONTAMINANTS	VOC1	VOLATILE ORGANIC	No
8/4/2020 0:00	154	98271	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/13/2019 0:00	154	34906	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3265	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/24/2017 0:00	154	96354	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98512	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14161	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3196	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/8/2019 0:00	154	56451	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2020 0:00	154	93975	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98518	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72535	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56381	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2018 0:00	154	57143	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/6/2018 0:00	154	84164	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93921	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/1/2019 0:00	46	56049	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
2/6/2017 0:00	154	98526	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98521	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55745	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
11/7/2017 0:00	154	46881	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59994	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64446	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/17/2022 0:00	154	8912	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3182	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69714	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29956	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2017 0:00	154	51676	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56049	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/3/2018 0:00	154	2312	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
7/11/2022 0:00	154	94891	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/24/2017 0:00	154	96481	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2020 0:00	154	77065	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88683	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/8/2020 0:00	154	16172	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14163	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76476	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/14/2019 0:00	154	35062	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80493	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7046	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30941	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68317	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3276	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/13/2019 0:00	154	34905	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/3/2020 0:00	154	98083	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69715	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88695	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48537	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84023	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3122	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94804	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/9/2019 0:00	154	16581	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3183	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55743	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
2/1/2021 0:00	154	23695	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98922	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55726	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/2/2021 0:00	154	47862	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
8/24/2022 0:00	230	23640	14		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
6/5/2018 0:00	154	84026	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72531	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2022 0:00	154	98922	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84032	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98511	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16157	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2020 0:00	154	93965	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2020 0:00	154	80862	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55715	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/4/2020 0:00	154	98261	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23698	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73054	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/11/2019 0:00	154	52611	11		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
7/1/2019 0:00	154	42012	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93925	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36237	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84034	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69709	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7425	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29946	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55728	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/10/2020 0:00	154	99021	14		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
8/24/2022 0:00	46	55737	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
5/9/2018 0:00	46	33720	6	37G016	RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	INSECT1	CARBAMATE INSECTICIDES	No
12/6/2021 0:00	154	64234	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/3/2020 0:00	154	98081	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39807	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56048	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37521	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
12/4/2018 0:00	154	11354	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3187	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20884	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79276	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2020 0:00	154	77064	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/31/2019 0:00	46	56056	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
5/7/2018 0:00	154	79274	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39803	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14165	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55738	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
12/4/2018 0:00	154	11351	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98522	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2018 0:00	154	11511	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/4/2019 0:00	154	24701	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56067	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
10/17/2022 0:00	154	8915	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68314	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80497	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72263	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56072	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
10/2/2018 0:00	154	2238	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2019 0:00	154	16094	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/7/2020 0:00	154	80923	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68313	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/1/2018 0:00	154	2055	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	230	23641	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
12/6/2021 0:00	154	64235	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3262	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64437	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55742	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
6/3/2020 0:00	154	89333	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38149	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40972	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30942	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2017 0:00	154	25187	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56822	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88687	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42011	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98527	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/6/2017 0:00	154	46787	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2018 0:00	46	33721	7	37G017	RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	PEST1	GENERAL PESTICIDE SUITE	No
12/5/2018 0:00	154	11517	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/6/2020 0:00	154	68215	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23696	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80502	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/4/2019 0:00	154	60013	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	154	60143	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11061	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55732	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
6/14/2022 0:00	154	90837	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2022 0:00	154	15961	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2019 0:00	154	21014	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69716	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/5/2017 0:00	154	25016	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/10/2020 0:00	154	77161	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94794	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19703	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2017 0:00	154	51675	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79266	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2018 0:00	154	63365	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30947	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88694	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98516	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2020 0:00	154	80853	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29943	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84035	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84821	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52342	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14164	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36224	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2020 0:00	154	80852	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56827	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2020 0:00	154	77068	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30948	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/1/2019 0:00	46	56045	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
2/1/2021 0:00	154	23697	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
3/5/2018 0:00	154	68325	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85095	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2022 0:00	154	98923	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68383	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64444	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/31/2021 0:00	46	21635	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
8/2/2021 0:00	154	47869	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/24/2017 0:00	154	96355	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79267	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/7/2017 0:00	154	46887	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2018 0:00	154	2234	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90838	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	46	82554	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
6/1/2021 0:00	154	39809	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40976	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52348	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55342	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
12/5/2018 0:00	154	11514	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7041	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44362	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2018 0:00	156	92001	9		RC	Routine / Compliance	RAD	RADIONUCLIDES	RAD	RADIONUCLIDES	No
4/2/2018 0:00	154	73056	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8922	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76485	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/31/2021 0:00	46	21636	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
9/7/2021 0:00	154	52344	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/9/2022 0:00	154	99005	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2020 0:00	154	94194	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98923	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72529	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/16/2018 0:00	46	53229	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
3/9/2021 0:00	46	16426	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC_SHORT	INORGANIC SHORT FORM	No
10/3/2017 0:00	156	60024	14		RC	Routine / Compliance	RAD	RADIONUCLIDES	RAD	RADIONUCLIDES	No
9/8/2020 0:00	154	3268	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2020 0:00	154	80864	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3274	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2022 0:00	154	98921	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44369	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68388	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/4/2019 0:00	154	60017	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/31/2019 0:00	46	56057	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
3/1/2021 0:00	154	27522	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64226	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44371	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55710	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
7/2/2018 0:00	154	88685	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55740	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
1/3/2017 0:00	154	93596	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/27/2019 0:00	154	28121	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
4/5/2017 0:00	154	8924	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27523	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48531	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2019 0:00	154	16092	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/3/2019 0:00	46	49373	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
11/9/2022 0:00	154	12467	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/1/2019 0:00	46	56048	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
11/1/2021 0:00	154	59989	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/21/2021 0:00	230	26442	11		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
11/4/2019 0:00	154	60011	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29947	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/8/2022 0:00	154	12194	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98517	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20872	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64436	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/31/2019 0:00	46	56063	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
3/9/2020 0:00	154	77063	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56823	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2019 0:00	154	24825	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/31/2019 0:00	46	56055	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
12/6/2022 0:00	154	15966	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2022 0:00	154	98766	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94792	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56377	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3264	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72528	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47863	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88686	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/3/2018 0:00	154	2311	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
11/7/2017 0:00	154	46886	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64447	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52564	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69705	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2022 0:00	154	98764	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64433	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84823	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56046	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37537	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72275	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84024	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88697	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72264	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98931	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/6/2018 0:00	154	84162	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56826	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80492	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52557	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19695	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39815	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94791	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7424	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2021 0:00	46	16422	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC_SHORT	INORGANIC SHORT FORM	Yes
9/8/2020 0:00	154	3267	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38146	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2017 0:00	154	30795	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/3/2017 0:00	154	41262	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
6/4/2019 0:00	154	38153	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
8/2/2021 0:00	154	47874	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8928	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2017 0:00	154	51897	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36226	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/10/2020 0:00	154	77166	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7051	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7053	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/15/2017 0:00	154	37943	13	BAL875	GWR	Ground Water Rule	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73046	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56042	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/29/2019 0:00	46	56054	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
7/6/2020 0:00	154	93966	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2019 0:00	154	16093	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73051	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55712	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
2/4/2020 0:00	154	72277	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32604	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/14/2019 0:00	154	35067	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48544	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48543	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85694	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84835	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2018 0:00	154	11512	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2020 0:00	154	77067	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59992	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36221	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72524	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39816	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2018 0:00	154	57146	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/13/2018 0:00	154	8524	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73041	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52555	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2017 0:00	154	51674	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/13/2018 0:00	154	8521	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/6/2017 0:00	154	46784	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2017 0:00	154	51894	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68315	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2019 0:00	154	16103	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19696	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72536	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42005	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2022 0:00	154	15963	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2017 0:00	154	93591	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	154	60148	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72261	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40974	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/25/2021 0:00	230	23727	14		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
4/4/2022 0:00	154	80491	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68322	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84824	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2017 0:00	154	51671	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44375	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32596	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2017 0:00	154	93593	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2020 0:00	154	94193	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80496	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/8/2020 0:00	154	16171	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64432	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/9/2022 0:00	154	99001	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/3/2017 0:00	154	41251	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20881	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37544	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29944	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39802	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69701	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/24/2017 0:00	154	96353	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2022 0:00	154	80521	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	230	30939	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
6/1/2017 0:00	154	19252	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42014	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/25/2021 0:00	230	23729	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
7/1/2019 0:00	154	42016	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68385	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38144	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/4/2020 0:00	154	98263	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2019 0:00	154	21015	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19256	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55730	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
3/5/2019 0:00	154	24824	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/17/2022 0:00	154	8924	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7434	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2018 0:00	154	11353	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3118	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16151	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52556	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/4/2019 0:00	154	24703	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48545	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89132	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44372	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/2/2021 0:00	154	27551	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29952	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79262	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94802	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2018 0:00	46	33721	7	37G017	RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	HERB1	CHLOROPHENOXY HERBICIDES	No
8/23/2022 0:00	46	55734	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
7/31/2019 0:00	46	56060	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
5/7/2018 0:00	154	79261	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80499	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98515	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/7/2020 0:00	154	80922	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/4/2019 0:00	154	60012	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	46	30221	9		RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	PEST1	GENERAL PESTICIDE SUITE	No
7/5/2017 0:00	154	25013	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/4/2021 0:00	154	19581	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2020 0:00	154	80854	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/13/2019 0:00	154	34902	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
8/3/2020 0:00	154	98082	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/3/2019 0:00	46	49372	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
1/24/2017 0:00	154	96356	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2018 0:00	154	94032	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52346	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72271	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29948	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72533	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55718	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
2/6/2018 0:00	154	63364	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7435	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/22/2022 0:00	46	55719	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
10/7/2019 0:00	154	56376	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2017 0:00	154	30793	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59987	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40963	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3121	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/17/2022 0:00	154	8913	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14173	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84033	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/9/2019 0:00	154	16582	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3114	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42001	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/8/2019 0:00	46	76467	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC_SHORT	INORGANIC SHORT FORM	No
9/15/2017 0:00	154	37941	11		GWR	Ground Water Rule	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52561	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59985	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19706	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/7/2017 0:00	154	46885	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/12/2021 0:00	112	53201	6	37G016	RC	Routine / Compliance	RAD	RADIONUCLIDES	RAD	RADIONUCLIDES	No
8/8/2022 0:00	154	98765	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72273	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36225	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98942	11		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
8/25/2021 0:00	46	62890	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
1/5/2021 0:00	154	19705	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/6/2017 0:00	154	46786	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64443	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48538	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/14/2019 0:00	154	35061	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19257	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42013	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37535	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27524	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2017 0:00	154	30797	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40965	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2022 0:00	154	15967	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30943	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55713	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/4/2020 0:00	154	98275	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94795	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85681	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7042	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3125	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2017 0:00	154	51892	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/18/2022 0:00	154	9032	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/13/2019 0:00	154	34904	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7043	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2018 0:00	154	57142	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42008	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23701	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/7/2017 0:00	154	46883	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3113	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59991	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3126	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73057	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98513	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2017 0:00	154	51891	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72522	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	230	9617	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
7/3/2019 0:00	46	49374	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
7/30/2019 0:00	46	56075	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
4/5/2017 0:00	154	8927	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23691	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/9/2019 0:00	154	16583	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/1/2018 0:00	154	2054	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47866	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85689	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/24/2017 0:00	154	96351	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79272	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/4/2020 0:00	154	98273	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16153	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76471	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/25/2021 0:00	46	62889	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
9/22/2020 0:00	154	5251	11		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
7/6/2017 0:00	154	25181	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14167	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52553	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7048	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29945	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30961	14		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
7/6/2020 0:00	154	93974	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2018 0:00	154	2236	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90847	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84826	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44373	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29951	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19697	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37538	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56385	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2017 0:00	154	93597	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/11/2018 0:00	154	99161	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88682	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52554	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40975	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84021	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
3/10/2020 0:00	154	77165	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79265	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/6/2020 0:00	154	68212	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2019 0:00	154	16102	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37534	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2020 0:00	154	80855	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2019 0:00	154	24821	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2022 0:00	46	58401	12	ALM337	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
6/2/2020 0:00	154	89145	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39804	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93923	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90845	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2022 0:00	154	16023	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56078	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
10/1/2018 0:00	154	2051	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3128	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8915	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79264	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2019 0:00	46	47785	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC_SHORT	INORGANIC SHORT FORM	Yes
1/24/2017 0:00	154	96352	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94893	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/13/2019 0:00	154	34907	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37547	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27525	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84832	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/5/2017 0:00	154	25015	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2020 0:00	154	77061	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56079	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
11/1/2021 0:00	154	59988	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2018 0:00	154	63127	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2018 0:00	154	11518	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/3/2017 0:00	154	41252	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32602	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47871	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11073	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2020 0:00	154	77069	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2022 0:00	154	15969	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90839	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/10/2020 0:00	154	77164	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/1/2019 0:00	46	56043	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
6/5/2018 0:00	154	84031	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80494	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94896	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76473	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90846	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69708	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88681	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85692	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48541	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2019 0:00	154	16091	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93932	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93922	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/15/2017 0:00	154	37946	Dist		R	Repeat Coliform	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/5/2020 0:00	154	84941	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27511	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68389	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3112	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2022 0:00	154	98762	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30944	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19263	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7433	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29953	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42002	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16161	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/1/2019 0:00	46	56046	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
1/18/2022 0:00	154	69703	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2017 0:00	154	25184	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/15/2017 0:00	154	37945	Dist		R	Repeat Coliform	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16154	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73048	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72265	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/7/2017 0:00	154	46884	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2018 0:00	154	63363	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85682	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56374	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/1/2018 0:00	154	2057	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29942	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/13/2018 0:00	154	8522	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79273	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98925	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37546	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/3/2020 0:00	154	89331	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8916	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89133	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56383	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52343	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48547	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84836	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23704	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/9/2022 0:00	154	12462	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3273	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56051	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52356	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/14/2019 0:00	154	35068	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2019 0:00	154	21013	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/21/2022 0:00	46	47887	13	BAL875	RC	Routine / Compliance	VOC	VOLATILE ORGANIC CONTAMINANTS	VOC1	VOLATILE ORGANIC	No
7/30/2019 0:00	46	56070	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
12/5/2018 0:00	154	11516	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23707	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3193	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/11/2022 0:00	154	94894	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/4/2019 0:00	154	24706	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20873	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/21/2021 0:00	230	26443	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
1/18/2022 0:00	154	69704	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8925	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
3/9/2021 0:00	46	16423	6	37G016	RC	Routine / Compliance	VOC	VOLATILE ORGANIC CONTAMINANTS	VOC1	VOLATILE ORGANIC	No
12/6/2022 0:00	154	15971	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16165	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/9/2022 0:00	154	12461	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2017 0:00	154	41411	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36235	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2018 0:00	154	7421	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3191	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14168	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32594	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44367	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19701	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14166	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48532	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/4/2019 0:00	154	24708	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/24/2019 0:00	186	29162	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	ASB	ASBESTOS	No
8/6/2018 0:00	154	93931	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59984	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/10/2020 0:00	154	77162	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37533	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52347	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56373	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37536	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19694	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16164	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/15/2017 0:00	154	37944	Dist		R	Repeat Coliform	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2017 0:00	154	30791	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2017 0:00	154	40961	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37541	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48536	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32597	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52345	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84825	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19266	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52352	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56824	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44376	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8912	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89141	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2018 0:00	154	57145	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89146	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/2/2021 0:00	154	27554	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89143	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76479	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/14/2019 0:00	154	35066	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93926	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3117	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2019 0:00	46	48003	7	37G017	RC	Routine / Compliance	VOC	VOLATILE ORGANIC CONTAMINANTS	VOC1	VOLATILE ORGANIC	No
3/7/2022 0:00	154	76481	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/16/2018 0:00	46	53228	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
4/6/2020 0:00	154	80865	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14162	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3271	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3275	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39811	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2017 0:00	154	93595	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14176	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/6/2017 0:00	154	46783	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11067	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/9/2022 0:00	154	12463	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37545	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	Yes
12/6/2022 0:00	154	15973	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19691	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/8/2022 0:00	154	12195	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79277	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2020 0:00	154	93972	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/5/2018 0:00	154	84022	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/9/2019 0:00	154	16584	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2021 0:00	46	16424	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
6/4/2019 0:00	154	38142	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32606	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/11/2019 0:00	46	67610	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
6/14/2022 0:00	154	90834	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64438	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47864	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76482	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48533	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56041	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85697	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/4/2020 0:00	154	84822	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27515	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/6/2020 0:00	154	68214	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68316	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/1/2018 0:00	154	2058	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56045	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27513	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/9/2022 0:00	154	99003	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73047	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88691	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68384	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/14/2019 0:00	154	48301	14		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
9/13/2017 0:00	154	37542	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/3/2017 0:00	154	41253	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2021 0:00	46	16420	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
10/17/2022 0:00	154	8914	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2021 0:00	46	16425	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC_SHORT	INORGANIC SHORT FORM	No
3/6/2017 0:00	154	3188	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14171	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2020 0:00	154	94192	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56074	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
12/5/2017 0:00	154	51896	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38152	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8917	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32598	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16162	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85687	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
3/31/2021 0:00	46	21637	8		RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	HERB1	CHLOROPHENOXY HERBICIDES	No
11/6/2017 0:00	154	46782	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23702	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2021 0:00	154	56091	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/5/2017 0:00	154	51893	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76475	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64224	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56076	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
11/5/2019 0:00	154	60144	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37532	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29955	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2020 0:00	154	80861	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98933	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2019 0:00	154	16101	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85685	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55343	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
3/2/2021 0:00	154	27552	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/9/2022 0:00	154	12465	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	46	82553	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
9/8/2020 0:00	154	3266	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19268	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3277	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/6/2017 0:00	154	46785	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/3/2020 0:00	154	89332	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2019 0:00	154	16104	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68312	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44363	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/18/2022 0:00	154	9031	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2020 0:00	154	93971	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8914	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59995	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11072	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2018 0:00	154	57144	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7047	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/4/2020 0:00	154	98264	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/9/2022 0:00	154	12464	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56073	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
12/9/2019 0:00	154	64445	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56054	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/14/2019 0:00	154	35065	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56386	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36231	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56043	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2020 0:00	154	77066	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2017 0:00	154	30798	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/12/2021 0:00	112	53203	8		RC	Routine / Compliance	RAD	RADIONUCLIDES	RAD	RADIONUCLIDES	No
7/7/2021 0:00	154	44366	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2020 0:00	154	77062	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2019 0:00	46	58222	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
7/5/2017 0:00	154	25014	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64221	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64442	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80503	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98941	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
8/23/2022 0:00	46	55733	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
11/2/2020 0:00	154	11063	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7055	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/3/2017 0:00	154	93594	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64441	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	154	60145	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/6/2017 0:00	154	46781	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2017 0:00	154	25185	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32593	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56382	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98525	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47876	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88692	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98934	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2018 0:00	154	94033	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/7/2020 0:00	154	68382	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2020 0:00	154	93964	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44364	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3186	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68324	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/6/2017 0:00	154	20031	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
11/8/2022 0:00	154	12196	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2022 0:00	154	3127	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19254	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/4/2021 0:00	154	19582	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68318	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47873	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/14/2019 0:00	154	35064	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/3/2017 0:00	154	41267	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
2/6/2017 0:00	154	98524	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2018 0:00	154	94041	14		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
3/7/2022 0:00	154	76486	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/13/2018 0:00	154	8523	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/6/2020 0:00	154	68211	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/9/2019 0:00	154	16586	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23692	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64431	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73053	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2018 0:00	154	63123	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/17/2022 0:00	154	8916	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68323	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72527	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55716	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
3/7/2022 0:00	154	76478	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56829	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/9/2022 0:00	154	12468	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2022 0:00	154	16021	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52355	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/23/2022 0:00	46	55731	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
12/6/2022 0:00	154	15962	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44368	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37543	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
2/5/2019 0:00	154	21012	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55744	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/2/2021 0:00	154	47867	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/1/2019 0:00	46	56044	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
10/2/2018 0:00	154	2233	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/8/2019 0:00	154	56452	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/10/2020 0:00	154	77163	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56069	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
6/4/2019 0:00	154	38141	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2018 0:00	154	2231	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/2/2020 0:00	154	89135	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/31/2021 0:00	46	21638	8		RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	PEST1	GENERAL PESTICIDE SUITE	No
7/6/2020 0:00	154	93963	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36232	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72532	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	230	23693	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
1/3/2017 0:00	154	93592	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56071	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
10/7/2019 0:00	154	56372	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/2/2018 0:00	154	2237	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/13/2017 0:00	154	37522	11		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
11/8/2022 0:00	154	12193	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39808	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47861	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2017 0:00	154	25183	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14172	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56059	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/7/2018 0:00	154	94035	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/6/2017 0:00	154	3184	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2022 0:00	154	15972	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44374	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73042	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8913	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/7/2020 0:00	154	80924	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2019 0:00	154	24826	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8911	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64434	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72525	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/1/2021 0:00	154	27521	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7054	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/4/2021 0:00	154	56047	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8923	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98936	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/9/2021 0:00	46	16427	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	AR	ARSENIC	No
6/6/2018 0:00	154	84165	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
10/8/2019 0:00	46	76468	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC_SHORT	INORGANIC SHORT FORM	No
11/3/2020 0:00	154	11141	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
10/4/2021 0:00	154	56044	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56828	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/9/2022 0:00	154	12469	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/2/2021 0:00	154	27555	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56066	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/8/2022 0:00	154	98924	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38147	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76477	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/17/2022 0:00	154	8923	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/16/2019 0:00	154	56453	9		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
5/13/2019 0:00	154	34901	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/18/2022 0:00	154	9034	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/7/2022 0:00	154	72526	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/7/2021 0:00	154	44365	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/1/2019 0:00	46	56050	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
10/17/2022 0:00	154	8925	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/8/2020 0:00	154	3263	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/4/2020 0:00	154	98272	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68321	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/25/2021 0:00	46	62889	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
12/5/2017 0:00	154	51895	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30946	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2018 0:00	154	98921	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2018 0:00	154	68311	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/8/2019 0:00	154	29957	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/2/2018 0:00	154	56821	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16166	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/16/2018 0:00	46	53228	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
2/1/2021 0:00	154	23694	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85693	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/11/2020 0:00	46	29567	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
4/5/2017 0:00	154	8918	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42003	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/9/2019 0:00	154	64435	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2018 0:00	154	63367	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/31/2019 0:00	46	56062	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
11/2/2020 0:00	154	11077	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64228	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/24/2017 0:00	154	96357	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2018 0:00	46	33720	6	37G016	RC	Routine / Compliance	SOC	SYNTHETIC ORGANIC CONTAMINANTS	PEST1	GENERAL PESTICIDE SUITE	No
2/5/2020 0:00	154	72342	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32591	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/5/2019 0:00	154	60146	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90831	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73043	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/11/2018 0:00	154	99162	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2022 0:00	154	15964	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80505	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/2/2018 0:00	154	88696	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69713	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79268	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/5/2017 0:00	154	25012	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2018 0:00	154	63126	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/1/2021 0:00	154	23706	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2017 0:00	154	30945	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/4/2022 0:00	154	80501	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69702	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/18/2022 0:00	154	69711	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2022 0:00	154	16022	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

SamCollectDate	LabNum	SampleNumber	SrcNum	SrcDOEId	SamPurposeCode	SamPurposeName	AnalyteGroupCode	AnalyteGroupName	TestPanelCode	TestPanelName	Exceedances
8/13/2019 0:00	154	48546	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/6/2021 0:00	154	32603	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98523	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2018 0:00	154	63368	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38151	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90842	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/21/2022 0:00	46	47888	7	37G017	RC	Routine / Compliance	VOC	VOLATILE ORGANIC CONTAMINANTS	VOC1	VOLATILE ORGANIC	No
7/6/2017 0:00	154	25186	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
1/5/2021 0:00	154	19704	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/4/2019 0:00	154	38155	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2017 0:00	154	98514	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/9/2022 0:00	154	12466	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/5/2019 0:00	154	24822	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/25/2021 0:00	230	23728	6	37G016	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
2/1/2021 0:00	154	23703	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11065	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/7/2019 0:00	154	56375	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/1/2018 0:00	154	2056	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/14/2019 0:00	46	60000	7	37G017	RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	IOC_SHORT	INORGANIC SHORT FORM	No
1/7/2019 0:00	154	16095	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64225	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/3/2020 0:00	154	98084	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/13/2019 0:00	154	48542	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2018 0:00	154	63362	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/2/2021 0:00	154	47868	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72274	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79271	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2017 0:00	154	25182	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11071	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/5/2017 0:00	154	8926	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/7/2020 0:00	154	80925	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2019 0:00	154	20874	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59993	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/1/2019 0:00	154	42015	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/9/2022 0:00	154	85696	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36233	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
3/7/2022 0:00	154	76483	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/4/2020 0:00	154	72276	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11062	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55343	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	HAA5	HALO-ACETIC ACIDS	No
6/1/2021 0:00	154	39805	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/11/2019 0:00	156	87002	9		RC	Routine / Compliance	RAD	RADIONUCLIDES	RAD	RADIONUCLIDES	No
6/1/2021 0:00	154	39812	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2018 0:00	154	11355	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/24/2022 0:00	46	55727	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
1/3/2018 0:00	154	57141	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/4/2017 0:00	154	51673	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36223	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/14/2022 0:00	154	90835	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/5/2020 0:00	154	84942	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/7/2017 0:00	154	30792	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2021 0:00	154	39814	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64229	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52567	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/6/2018 0:00	154	93928	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/3/2021 0:00	154	36222	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/2/2018 0:00	154	73045	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/3/2019 0:00	46	49371	Dist		RC	Routine / Compliance	DBP	DISINFECTION BY PRODUCTS	THM	TOTAL TRIHALOMETHANE	No
12/6/2021 0:00	154	64233	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19267	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/7/2020 0:00	154	16163	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/17/2022 0:00	154	8922	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64223	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/31/2019 0:00	46	56061	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
8/7/2018 0:00	154	94034	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7044	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2020 0:00	154	93961	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
6/1/2017 0:00	154	19262	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
8/8/2022 0:00	154	98763	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/10/2019 0:00	154	52558	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/6/2020 0:00	154	93962	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
9/7/2021 0:00	154	52349	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11068	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/7/2018 0:00	154	79275	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2018 0:00	154	63125	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
5/2/2017 0:00	154	14175	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
7/30/2019 0:00	46	56068	Dist		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	LCR	LEAD COPPER	No
2/7/2022 0:00	154	72534	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/5/2018 0:00	154	63124	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
2/6/2018 0:00	154	63366	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/2/2020 0:00	154	11074	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
4/7/2020 0:00	154	80891	8		RC	Routine / Compliance	IOC	INORGANIC CONTAMINANTS	NIT	NITRATE SUITE	No
5/12/2021 0:00	46	33157	11		RC	Routine / Compliance	VOC	VOLATILE ORGANIC CONTAMINANTS	VOC1	VOLATILE ORGANIC	No
4/6/2021 0:00	154	32599	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
12/6/2021 0:00	154	64231	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
11/1/2021 0:00	154	59982	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No
10/5/2020 0:00	154	7056	Dist		RC	Routine / Compliance	MICRO	MICROBIOLOGICAL	COLI_AP	ABSENCE / PRESENCE	No

City of SUNNYSIDE WASHINGTON

17

Sanitary Survey Data Report

HLA Engineering and Land Surveying, Inc.

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Administrative Data

WS Id: 85400 3 WS Name: SUNNYSIDE CITY OF Owner Name: SUNNYSIDE, CITY OF

Group: A Type: Comm Group Active Date: 01/01/1970 Region: Eastern County: YAKIMA

Primary Contact Name: Daniel R. Tiliano Phone: (509) 837-5206 Cell: (503) 804-0521 Fax:

Primary Contact Email: dxxxxxxo@sunnyside-wa.gov Owner Email: sxxxxxr@sunnyside-wa.gov

Delivery Address: City: State: Zip code:

Mailing Address: 818 E Edison City: Sunnyside State: WA Zip code: 98944

Sanitary Survey Notes

Comment Focus	Comment Date	Author
Source	*01/16/2014*	*K. Anderson*

S01, S03, S04, & S05 have been decomissioned per the water system.

Comment Focus	Comment Date	Author
General	*05/14/2002*	*DWAIN Conversion*

CvtDWPRO - UNSPECIFIED # APPRVD. SERV. PER DS SO3 WELL 3 INACTIVATED 12/19/95 PER T. JUSTUS. S09 (WELL 9)& S10 (WELL 4A REPLACEMENT OF WELL 4) ADDED PER TJ 11/9/98.

Planning

Plan Date: Out of Compliance

Last Plan Date: 05/09/2018

Next Plan Due Date: 05/09/2024

Type of Plan: Water System Plan

Operator Certification

Number of Mandatory Positions for the WS Id: 2

Operator Compliance Status: In Compliance

Mandatory	Pos. Num.	Operator Name (Last, First, MI)	Min. Cert. Req'd	Certification Held	Operator Number	Evening / Weekend Phone Number	EMail	Has CCS
Yes	1	Tiliano, Daniel R	WDM 3	WDM 3	010899	(xxx)-xxx-xxxx	dxxxxxxo@sunnysid	Yes
No		Barnett, Glenn E			012732	(xxx)-xxx-xxxx	gxxxxxxt@sunnyside	

Compliance

Action	DOH Program	Status	Issue Date	Survey Date
Directive	Sanitary Survey	Completed	12/23/2015	06/18/2015

Comments: 06/18/2015: SS by Andres Cervantes PE.
Also noted: SO9 and S13 stop overfilling the oil fuel on the generators, Stop parking leaky equipment within the SCA of S13. 03/29/2016: Completed with everything. Spoke with Kirk. He is having trouble sending photos. 03/29/2016: Received photos verifying deficiencies have been corrected.

Vio - 12/23/15	San Surv-Sig Def Source	SSNC/Vio Status: RTC
Vio - 12/23/15	San Surv-Sig Def Fin Water Storage	SSNC/Vio Status: RTC
Vio - 12/23/15	San Surv-Oth Find Fin Water Storage	SSNC/Vio Status: RTC

Milestones Description:	Comply By Date	Completed Date
SO9 - Seal the wellhead watertight. Repair or replace the electrical conduit.	02/12/2016	03/29/2016

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Grandview Reservoirs - Repair or replace the hatch covers on the reservoirs. Holes have rusted through the covers and the gaskets need to be replaced.	02/12/2016	03/29/2016
SO7- Install a screen or spring loaded flap gate on the end of the discharge to waste pipes for the pump control valves.	02/12/2016	03/29/2016

Action	DOH Program	Status	Issue Date	Survey Date
Directive	Sanitary Survey	Completed	05/18/2021	08/05/2020

Vio - 03/10/21	San Surv-Sig Def Source	SSNC/Vio Status: Actual
Vio - 03/10/21	San Surv-Sig Def Fin Water Storage	SSNC/Vio Status: Actual
Vio - 03/10/21	San Surv-Oth Find Fin Water Storage	SSNC/Vio Status: Actual

Milestones Description:	Comply By Date	Completed Date
Replace missing bolt at S13	04/24/2021	05/24/2021
Seal holes in reservoir hatches - have AC review.	04/24/2021	05/24/2021
Inspect and provide photos for Grandview Reservoir 3 and Reservoir 4 (skyline).	04/24/2021	05/24/2021

Source Information

Source Inventory

Src Num	Source Name	Status	Type	Susc	Use	Depth to First Open Interval	Capacity (GPM)	Source Metered	Well Tag ID
01	Well #1	Decom	Well	X	P	166	500.0	Undefined	
03	Well #3	Decom	Well	X	S	1162	900.0	No	
04	Well #4	Decom	Well	M	S	1576	900.0	No	
05	Well #5	Decom	Well	L	E	458	700.0	Yes	
06	Well #6 - AFL811	Act	Well	M	P	760	650.0	Yes	AFL811
07	Well #7	Act	Well	H	P	1057	1,100.0	Yes	
08	Well #8 - AFL812	Act	Well	H	P	440	750.0	Yes	AFL812
09	Well #9 - AFK905	Act	Well	L	P	919	1,500.0	Yes	AFK905
10	Well #10 - AFL815	Act	Well	L	E	1701	1,000.0	Yes	AFL815
11	Well #11 - AKN517	Act	Well	M	P	377	500.0	Yes	AKN517
12	Well #12 - ALM337	Act	Well in Well Field	L	P	383	350.0	Yes	ALM337
13	Well #13 - BAL875	Act	Well in Well Field	L	P	351	650.0	Yes	BAL875
14	Wellfield / S12, S13	Act	Well Field	L	P	351	1,000.0	Yes	

Source Location

Src Num	Source Name	Qtr / Qtr	Sect	Township	Range	Lat / Long	SWTR
01	Well #1	NESW	25	10	22E	46.321952 / -120.012351	Does Not Apply
03	Well #3	SENW	25	10	22E	46.325561 / -120.012318	Does Not Apply
04	Well #4	SENW	25	10	22E	46.325561 / -120.012318	Does Not Apply
05	Well #5	SWNW	25	10	22E	46.325019 / -120.019884	Does Not Apply
06	Well #6 - AFL811	NWSW	30	10	22E	46.321382 / -119.998873	Does Not Apply
07	Well #7	SWNW	36	10	22E	46.311056 / -120.018528	Does Not Apply
08	Well #8 - AFL812	NENE	26	10	22E	46.329102 / -120.022968	Does Not Apply

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

09	Well #9 - AFK905	SWNE	29	10	23E	46.325540 / -119.968071	Does Not Apply
10	Well #10 - AFL815	SENW	25	10	22E	46.326832 / -120.011156	Does Not Apply
11	Well #11 - AKN517	SENW	25	10	22E	46.322120 / -120.016000	
12	Well #12 - ALM337	NWNE	27	10	22E	46.330848 / -120.046875	
13	Well #13 - BAL875	NWNE	27	10	22E	46.328751 / -120.049394	
14	Wellfield / S12, S13	NENW	27	10	22E	46.329330 / -120.054260	

Water Treatment Plant / Source treatment

Plant Id	Source #	Src Name	Treat Purpose	Treatment Required	Treatment Type	Applicable Rule	Reason of Treatment	Approval Status
85400001	06	Well #6 - AFL811	DISINFECTION	No	CHLORINATION, GASEOUS	Purveyor Option	Preventative	AppvConDoc
85400002	07	Well #7	DISINFECTION	No	CHLORINATION, GASEOUS	Purveyor Option	Preventative	AppvConDoc
85400003	08	Well #8 - AFL812	DISINFECTION	No	CHLORINATION, GASEOUS	Purveyor Option	Preventative	Appv
85400004	09	Well #9 - AFK905	DISINFECTION	No	CHLORINATION, GASEOUS	Purveyor Option	Preventative	UnAppv
85400005	05	Well #5	DISINFECTION	No	CHLORINATION, GASEOUS	Purveyor Option		UnAppv
85400006	10	Well #10 - AFL815	DISINFECTION	No	CHLORINATION, GASEOUS	Purveyor Option		UnAppv
85400007	11	Well #11 - AKN517	DISINFECTION	No	CHLORINATION, HYPOCHLORITE	Purveyor Option		UnAppv
85400008	12	Well #12 - ALM337	DISINFECTION	No	CHLORINATION, ON-SITE GENERATION	Purveyor Option		Appv

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

85400009	13	Well #13 - BAL875	DISINFECTION	No	CHLORINATION, ON-SITE GENERATION	Purveyor Option		Appv

Plant ID: 85400001

Measurements per month	28	Date Activated	
Performance required:	No Performance Required		
Maximum Flow Rate (gpm)	700.0	Residual Required (mg/L)	
Comments			

Plant ID: 85400002

Measurements per month	28	Date Activated	
Performance required:	No Performance Required		
Maximum Flow Rate (gpm)	1057.0	Residual Required (mg/L)	
Comments			

Plant ID: 85400003

Measurements per month	20	Date Activated	
Performance required:	No Performance Required		
Maximum Flow Rate (gpm)	750.0	Residual Required (mg/L)	
Comments			

Plant ID: 85400004

Measurements per month	20	Date Activated	
Performance required:	No Performance Required		
Maximum Flow Rate (gpm)	1500.0	Residual Required (mg/L)	
Comments			

Plant ID: 85400005

Measurements per month	20	Date Activated	01/01/2014
Performance required:	No Performance Required		
Maximum Flow Rate (gpm)		Residual Required (mg/L)	
Comments			

Disinfection Treatment Report

	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023
Operation	X	X	X	X	X	X	X	X	X	X	X	X
Report	X	X			X	X	X	X	X	X	X	

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Water Quality

COLIFORM SUMMARY / 2 - Years

	10/23	9/23	8/23	7/23	6/23	5/23	4/23	3/23	2/23	1/23	12/22	11/22
Routine Sample												
SamReq		15	15	15	15	15	15	15	15	15	15	15
SamTaken		0	16	15	15	15	15	20	15	15	15	15
TC												
EC												
FC												
Repeat Sample												
SamReq												
SamTaken												
TC												
EC												
FC												
Incidents Actual												
E.Coli (Acute)												
TTT PS (Non Acute)												
TTT R (MajorRep)												
Mon (MajorMon)												
RTCRA												
TTV-A												
TTV-CA												
TTV-S												

85400 10/16/2022

	10/22	9/22	8/22	7/22	6/22	5/22	4/22	3/22	2/22	1/22	12/21	11/21
Routine Sample												
SamReq	15	15	15	15	15	15	15	15	15	15	15	15
SamTake	15	15	15	15	15	15	15	15	15	15	15	15
TC												
EC												
FC												
Repeat Sample												
SamReq												
SamTake												
TC												
EC												
FC												

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Incidents Actual												
E.Coli												
TTT PS												
TTT R												
Mon												
RTCRA												
TTV-A												
TTV-CA												
TTV-S												

Sam Collect Date	Sam Location	Lab Sam	Purpose	TC	EColi	Fecal
08/01/2023	606 SAN CLEMENTE AVE	154 48977	RC	A		
08/01/2023	735 SCOON RD	154 48978	RC	A		
08/01/2023	555 W SOUTH HILL RD	154 48981	RC	A		
08/01/2023	1750 SHELLER RD	154 48982	RC	A		
08/01/2023	550 MIDUALE RD	154 48983	RC	A		
08/01/2023	809 NW CRESCENT AVE	154 48984	RC	A		
08/01/2023	1209 VISTA AVE	154 48971	RC	A		
08/01/2023	110 SOUTH HILL RD	154 48972	RC	A		
08/01/2023	605 SKYLINE DR	154 48973	RC	A		
08/01/2023	818 E EDISON AVE	154 48974	RC	A		
08/01/2023	2200 YVH	154 48975	RC	A		
08/01/2023	SUNNYVIEW PARK	154 48976	RC	A		
08/01/2023	2001 YVH	154 48985	RC	A		
08/01/2023	3201 PICARD PL	154 48986	RC	A		
08/01/2023	340 W GRAND VIEW	154 48987	RC	A		
08/01/2023	811 DAYTON DR	154 48988	RC	A		
07/18/2023	1209 VISTA AVE	154 46931	RC	A		
07/18/2023	605 SKYLINE DR	154 46932	RC	A		
07/18/2023	555 W SOUTH HILL RD	154 46933	RC	A		
07/18/2023	550 MIDUALL RD	154 46934	RC	A		
07/18/2023	340 W GRAND VIEW AVE	154 46935	RC	A		
07/18/2023	110 SOUTH HILL RD	154 46936	RC	A		
07/18/2023	2200 YVH	154 47146	RC	A		
07/18/2023	818 E EDISON AVE	154 47147	RC	A		
07/18/2023	735 SCOON RD	154 47148	RC	A		
07/18/2023	811 DAYTON DR	154 46937	RC	A		

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Sam Collect Date	Sam Location	Lab Sam	Purpose	TC	EColi	Fecal
07/18/2023	809 NW CRESCENT AVE	154 46938	RC	A		
07/18/2023	606 SAN CLEMENTE AVE	154 47141	RC	A		
07/18/2023	3201 PICARD PL	154 47142	RC	A		
07/18/2023	1750 SHELLER RD	154 47143	RC	A		
07/18/2023	2001 YVH	154 47144	RC	A		
06/12/2023	1209 VISTA AVE	154 42608	RC	A		
06/12/2023	110 SOUTH HILL RD	154 42602	RC	A		
06/12/2023	2200 YVH	154 42603	RC	A		
06/12/2023	818 E EDISON AVE	154 42604	RC	A		
06/12/2023	3201 PICARD PL	154 42605	RC	A		
06/12/2023	735 SCOON RD	154 42606	RC	A		
06/12/2023	605 SKYLINE DR	154 42607	RC	A		
06/12/2023	340 W GRAND VIEW AVE	154 42614	RC	A		
06/12/2023	1750 SHELLER RD	154 42615	RC	A		
06/12/2023	606 SAN CLEMENTE	154 42616	RC	A		
06/12/2023	811 DAYTON DR	154 42617	RC	A		
06/12/2023	809 NW CRESCENT AVE	154 42618	RC	A		
06/12/2023	555 W SOUTH HILL RD	154 42601	RC	A		
06/12/2023	2100	154 42611	RC	A		
06/12/2023	550 MIDUALL RD	154 42612	RC	A		
05/02/2023	1209 VISTA AVE	154 37211	RC	A		
05/02/2023	605 SKYLINE DR	154 37212	RC	A		
05/02/2023	110 SOUTH HILL RD	154 37213	RC	A		
05/02/2023	818 E EDISON AVE	154 37214	RC	A		
05/02/2023	340 W GRAND VIEW AVE	154 37215	RC	A		
05/02/2023	2001 YVH	154 37216	RC	A		
05/02/2023	555 W SOUTH HILL RD	154 37217	RC	A		
05/02/2023	3201 PICARD PL	154 37218	RC	A		
05/02/2023	809 NW CRESCENT AVE	154 37219	RC	A		
05/02/2023	735 SCOON RD	154 37221	RC	A		
05/02/2023	550 MIDUALL RD	154 37222	RC	A		
05/02/2023	1750 SHELLER RD	154 37223	RC	A		
05/02/2023	606 SAN CLEMENTE AVE	154 37224	RC	A		
05/02/2023	811 DAYTON DR	154 37225	RC	A		
05/02/2023	2200 YVH	154 37226	RC	A		

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Sam Collect Date	Sam Location	Lab Sam	Purpose	TC	EColi	Fecal
04/05/2023	TAP	230 09574	RC	A		
04/03/2023	TAP	230 09413	RC	A		
04/03/2023	TAP	230 09414	RC	A		
04/03/2023	TAP	230 09415	RC	A		
04/03/2023	TAP	230 09416	RC	A		
04/03/2023	TAP	230 09417	RC	A		
04/03/2023	TAP	230 09424	RC	A		
04/03/2023	TAP	230 09425	RC	A		
04/03/2023	TAP	230 09426	RC	A		
04/03/2023	TAP	230 09418	RC	A		
04/03/2023	TAP	230 09419	RC	A		
04/03/2023	TAP	230 09420	RC	A		
04/03/2023	TAP	230 09421	RC	A		
04/03/2023	TAP	230 09422	RC	A		
04/03/2023	TAP	230 09423	RC	A		
03/07/2023	1750 SHELLER RD	154 29001	RC	A		
03/07/2023	2001 YVH	154 29002	RC	A		
03/07/2023	3201 PICARD PL	154 29003	RC	A		
03/07/2023	809 NW CRESCENT AVE	154 29004	RC	A		
03/07/2023	2200 YVH	154 29005	RC	A		
03/07/2023	606 SAN CLEMENTE AVE	154 29006	RC	A		
03/07/2023	735 SCOON RD	154 29007	RC	A		
03/07/2023	818 E EDISON AVE	154 29008	RC	A		
03/06/2023	340 W GRAND VIEW	154 28934	RC	A		
03/06/2023	555 W SOUTH HILL RD	154 28935	RC	A		
03/06/2023	110 SOUTH HILL RD	154 28936	RC	A		
03/06/2023	550 MIDUALL RD	154 28937	RC	A		
03/06/2023	1209 VISTA AVE	154 28931	RC	A		
03/06/2023	811 DAYTON DR	154 28932	RC	A		
03/06/2023	605 SKYLINE DR	154 28933	RC	A		
03/03/2023	BLOW OFF BLAIN 6TH	109 07201	RC	A		
03/03/2023	SERVICE @ ST 29 58	109 07202	RC	A		
03/03/2023	HYDRANT @ ST 31 72	109 07203	RC	A		
03/03/2023	BLOW OFF WAREHOUSE	109 07204	RC	A		
03/03/2023	HYDRANT ST 27 60 RT	109 07205	RC	A		

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Sam Collect Date	Sam Location	Lab Sam	Purpose	TC	EColi	Fecal
02/08/2023	606 SAN CLEMENTE	154 25366	RC	A		
02/08/2023	3201 PICARD PL	154 25367	RC	A		
02/08/2023	818 E EDISON AVE	154 25368	RC	A		
02/08/2023	2200 YVH	154 25361	RC	A		
02/08/2023	1750 SHELLER RD	154 25362	RC	A		
02/08/2023	809 NW CRESCENT	154 25363	RC	A		
02/08/2023	735 SCOON	154 25364	RC	A		
02/08/2023	2001 YVH	154 25365	RC	A		
02/07/2023	811 DAYTON	154 25112	RC	A		
02/06/2023	550 MIDUALL RD	154 24871	RC	A		
02/06/2023	340 W GRAND VIEW	154 24872	RC	A		
02/06/2023	110 SOUTH HILL RD	154 24873	RC	A		
02/06/2023	605 SKYLINE DR	154 24874	RC	A		
02/06/2023	555 W SOUTH HILL RD	154 24875	RC	A		
02/06/2023	1209 VISTA	154 25111	RC	A		
01/10/2023	809 NW CRESCENT	154 20656	RC	A		
01/10/2023	2001 YVH	154 20657	RC	A		
01/10/2023	818 E EDISON AVE	154 20658	RC	A		
01/10/2023	735 SCOON RD	154 20659	RC	A		
01/10/2023	3201 PICARD PL	154 20661	RC	A		
01/10/2023	1209 VISTA AVE	154 20662	RC	A		
01/10/2023	811 DAYTON DR	154 20655	RC	A		
01/10/2023	605 SKYLINE DR	154 20651	RC	A		
01/10/2023	606 SAN CLEMENTE AVE	154 20652	RC	A		

INORGANIC CHEMICALS (IOC)

History - IOC - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
06	Well #6 - AFL811	W	Act	P	046 16420	3/9/2021	AR	1 of 1
06	Well #6 - AFL811	W	Act	P	046 16421	3/9/2021	IOC_SHOR	1 of 10
06	Well #6 - AFL811	W	Act	P	046 16422	3/9/2021	IOC_SHOR	1 of 10
06	Well #6 - AFL811	W	Act	P	046 76466	10/8/2019	AR	1 of 1
06	Well #6 - AFL811	W	Act	P	046 76467	10/8/2019	IOC_SHOR	1 of 10

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

INORGANIC CHEMICALS (IOC)

History - IOC - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
06	Well #6 - AFL811	W	Act	P	046 47785	7/2/2019	IOC_SHOR	1 of 10
06	Well #6 - AFL811	W	Act	P	046 37782	7/6/2016	IOC	29 of 43
06	Well #6 - AFL811	W	Act	P	046 30243	6/7/2016	AR	1 of 1
06	Well #6 - AFL811	W	Act	P	046 47388	10/1/2015	IOC_SHOR	1 of 10
06	Well #6 - AFL811	W	Act	P	046 20888	5/11/2015	IOC	2 of 43
06	Well #6 - AFL811	W	Act	P	046 20888	5/11/2015	IOC_SHOR	2 of 10
07	Well #7	W	Act	P	046 16424	3/9/2021	AR	1 of 1
07	Well #7	W	Act	P	046 16425	3/9/2021	IOC_SHOR	1 of 10
07	Well #7	W	Act	P	046 82553	11/5/2019	AR	1 of 1
07	Well #7	W	Act	P	046 60000	8/14/2019	IOC_SHOR	1 of 10
07	Well #7	W	Act	P	046 45214	10/7/2014	IOC	28 of 43
08	Well #8 - AFL812	W	Act	P	046 21635	3/31/2021	AR	1 of 1
08	Well #8 - AFL812	W	Act	P	046 21636	3/31/2021	AR	1 of 1
08	Well #8 - AFL812	W	Act	P	046 67610	9/11/2019	AR	1 of 1
08	Well #8 - AFL812	W	Act	P	046 30241	6/7/2016	IOC	28 of 43
09	Well #9 - AFK905	W	Act	P	046 16426	3/9/2021	IOC_SHOR	1 of 10
09	Well #9 - AFK905	W	Act	P	046 16427	3/9/2021	AR	1 of 1
09	Well #9 - AFK905	W	Act	P	046 82554	11/5/2019	AR	1 of 1
09	Well #9 - AFK905	W	Act	P	046 76468	10/8/2019	IOC_SHOR	1 of 10
09	Well #9 - AFK905	W	Act	P	046 17779	4/7/2016	IOC	28 of 43
09	Well #9 - AFK905	W	Act	P	046 47389	10/1/2015	IOC_SHOR	1 of 10
09	Well #9 - AFK905	W	Act	P	046 20910	5/11/2015	IOC	2 of 43
09	Well #9 - AFK905	W	Act	P	046 20910	5/11/2015	IOC_SHOR	2 of 10
11	Well #11 - AKN517	W	Act	P	046 69662	9/21/2021	IOC	29 of 43
11	Well #11 - AKN517	W	Act	P	046 76469	10/8/2019	AR	1 of 1
12	Well #12 - ALM337	WW	Act	P	046 58401	9/8/2022	AR	1 of 1
13	Well #13 - BAL875	WW	Act	P	046 58401	9/8/2022	AR	1 of 1
14	Wellfield / S12, S13	WF	Act	P	046 67611	9/11/2019	AR	1 of 1
14	Wellfield / S12, S13	WF	Act	P	046 44712	8/1/2016	IOC	28 of 43

Detail - IOC

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Source 06

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	IOC	046	37782	07/06/2016	well 6

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0004	ARSENIC	EQ	mg/L	0.0010	0.0080	N	0.0103	N	0.0104
0005	BARIUM	EQ	mg/L	0.1000	0.0290	N	1.9999	N	2.0000
0006	CADMIUM	LT	mg/L	0.0010	0.0020	N	0.0049	N	0.0050
0007	CHROMIUM	LT	mg/L	0.0070	0.0200	N	0.0999	N	0.1000
0011	MERCURY	LT	mg/L	0.0002	0.0004	N	0.0019	N	0.0020
0012	SELENIUM	LT	mg/L	0.0020	0.0100	N	0.0499	N	0.0500
0110	BERYLLIUM	LT	mg/L	0.0003	0.0008	N	0.0039	N	0.0040
0111	NICKEL	LT	mg/L	0.0050	0.1000	N	0.0999	N	0.1000
0112	ANTIMONY	LT	mg/L	0.0030	0.0060	N	0.0059	N	0.0060
0113	THALLIUM	LT	mg/L	0.0010	0.0020	N	0.0019	N	0.0020
0116	CYANIDE	LT	mg/L	0.0500	0.0100	N	0.1999	N	0.2000
0019	FLUORIDE	EQ	mg/L	0.2000	0.3600	N	1.9999	N	4.0000
0114	NITRITE-N	LT	mg/L	0.1000	0.2000	N	0.4999	N	1.0000
0020	NITRATE-N	LT	mg/L	0.5000	0.2000	N	4.9990	N	10.0000
0161	TOTAL NITRATE/NITRITE	LT	mg/L	0.5000	0.5000	N		N	
0008	IRON	EQ	mg/L	0.1000	0.1000	N		N	
0010	MANGANESE	EQ	mg/L	0.0100	0.0430	N		N	
0013	SILVER	LT	mg/L	0.1000	0.1000	N		N	
0021	CHLORIDE	EQ	mg/L	20.0000	7.2000	N		N	
0022	SULFATE	EQ	mg/L	50.0000	31.5000	N		N	
0024	ZINC	LT	mg/L	0.2000	0.2000	N		N	
0014	SODIUM	EQ	mg/L	5.0000	12.8000	N		N	
0015	HARDNESS	EQ	mg/L	10.0000	127.4000	N		N	
0016	CONDUCTIVITY	EQ	Umhos/c	70.0000	328.0000	N		N	
0017	TURBIDITY	EQ	NTU	0.1000	0.2200	N		N	
0018	COLOR	EQ	CU	15.0000	11.0000	N		N	
0026	TDS-TOTAL DISSOLVED	EQ	mg/L	100.0000	243.0000	N		N	
0009	LEAD	LT	mg/L	0.0010	0.0010	N	9999.0000	N	
0023	COPPER	LT	mg/L	0.0200	0.0200	N	9999.0000	N	
0171	ORTHOPHOSPHATE	NA	mg/L	0.1000		N		N	
0172	SILICA	NA	mg/L	1.0000		N		N	
0402	ALUMINUM	NA	mg/L	0.0500		N		N	
0403	ALKALINITY-LAB	NA	mg/L	5.0000		N		N	
0404	MAGNESIUM	NA	mg/L	0.1000		N		N	
0405	CALCIUM	NA	mg/L	0.0500		N		N	
0406	AMMONIA	NA	mg/L	1.0000		N		N	
0407	CHLORINE DIOXIDE	NA	mg/L	0.8000		N		N	
0408	OZONE	NA	mg/L	0.2000		N		N	
0409	PH	NA	PH			N		N	
0410	CHLORAMINES	NA	mg/L			N		N	
0099	INACTIVATION RATIO	NA	None			N		N	
0100	RESIDUAL CHLORINE	NA	mg/L	0.2000		N		N	
0115	ASBESTOS	NA	MFL	0.2000		N	6.9990	N	7.0000

Result Range:

EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Source 07

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	IOC	046	45214	10/07/2014	well 7

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0004	ARSENIC	LT	mg/L	0.0010	0.0030	N	0.0103	N	0.0104
0005	BARIUM	EQ	mg/L	0.1000	0.0170	N	1.9999	N	2.0000
0006	CADMIUM	LT	mg/L	0.0010	0.0020	N	0.0049	N	0.0050
0007	CHROMIUM	LT	mg/L	0.0070	0.0200	N	0.0999	N	0.1000
0011	MERCURY	LT	mg/L	0.0002	0.0004	N	0.0019	N	0.0020
0012	SELENIUM	LT	mg/L	0.0020	0.0100	N	0.0499	N	0.0500
0110	BERYLLIUM	EQ	mg/L	0.0003	0.0010	N	0.0039	N	0.0040
0111	NICKEL	LT	mg/L	0.0050	0.1000	N	0.0999	N	0.1000
0112	ANTIMONY	LT	mg/L	0.0030	0.0060	N	0.0059	N	0.0060
0113	THALLIUM	LT	mg/L	0.0010	0.0020	N	0.0019	N	0.0020
0116	CYANIDE	LT	mg/L	0.0500	0.0100	N	0.1999	N	0.2000
0019	FLUORIDE	EQ	mg/L	0.2000	0.3500	N	1.9999	N	4.0000
0114	NITRITE-N	LT	mg/L	0.1000	0.2000	N	0.4999	N	1.0000
0020	NITRATE-N	LT	mg/L	0.5000	0.2000	N	4.9990	N	10.0000
0161	TOTAL NITRATE/NITRITE	LT	mg/L	0.5000	0.5000	N		N	
0008	IRON	LT	mg/L	0.1000	0.1000	N		N	
0010	MANGANESE	EQ	mg/L	0.0100	0.0280	N		N	
0013	SILVER	LT	mg/L	0.1000	0.1000	N		N	
0021	CHLORIDE	EQ	mg/L	20.0000	6.9300	N		N	
0022	SULFATE	EQ	mg/L	50.0000	0.7000	N		N	
0024	ZINC	LT	mg/L	0.2000	0.2000	N		N	
0014	SODIUM	EQ	mg/L	5.0000	19.1000	N		N	
0015	HARDNESS	EQ	mg/L	10.0000	95.7000	N		N	
0016	CONDUCTIVITY	EQ	Umhos/c	70.0000	299.0000	N		N	
0017	TURBIDITY	EQ	NTU	0.1000	0.5200	N		N	
0018	COLOR	EQ	CU	15.0000	5.0000	N		N	
0026	TDS-TOTAL DISSOLVED	NA	mg/L	100.0000		N		N	
0009	LEAD	LT	mg/L	0.0010	0.0010	N	9999.0000	N	
0023	COPPER	EQ	mg/L	0.0200	0.0210	N	9999.0000	N	
0171	ORTHOPHOSPHATE	NA	mg/L	0.1000		N		N	
0172	SILICA	NA	mg/L	1.0000		N		N	
0402	ALUMINUM	NA	mg/L	0.0500		N		N	
0403	ALKALINITY-LAB	NA	mg/L	5.0000		N		N	
0404	MAGNESIUM	NA	mg/L	0.1000		N		N	
0405	CALCIUM	NA	mg/L	0.0500		N		N	
0406	AMMONIA	NA	mg/L	1.0000		N		N	
0407	CHLORINE DIOXIDE	NA	mg/L	0.8000		N		N	
0408	OZONE	NA	mg/L	0.2000		N		N	
0409	PH	NA	PH			N		N	
0410	CHLORAMINES	NA	mg/L			N		N	
0099	INACTIVATION RATIO	NA	None			N		N	
0100	RESIDUAL CHLORINE	NA	mg/L	0.2000		N		N	
0115	ASBESTOS	NA	MFL	0.2000		N	6.9990	N	7.0000

Result Range:

EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Source 08

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	IOC	046	30241	06/07/2016	well 8 hb

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0004	ARSENIC	EQ	mg/L	0.0010	0.0030	N	0.0103	N	0.0104
0005	BARIUM	EQ	mg/L	0.1000	0.0980	N	1.9999	N	2.0000
0006	CADMIUM	LT	mg/L	0.0010	0.0020	N	0.0049	N	0.0050
0007	CHROMIUM	EQ	mg/L	0.0070	0.0010	N	0.0999	N	0.1000
0011	MERCURY	LT	mg/L	0.0002	0.0004	N	0.0019	N	0.0020
0012	SELENIUM	LT	mg/L	0.0020	0.0100	N	0.0499	N	0.0500
0110	BERYLLIUM	LT	mg/L	0.0003	0.0008	N	0.0039	N	0.0040
0111	NICKEL	LT	mg/L	0.0050	0.1000	N	0.0999	N	0.1000
0112	ANTIMONY	LT	mg/L	0.0030	0.0060	N	0.0059	N	0.0060
0113	THALLIUM	LT	mg/L	0.0010	0.0020	N	0.0019	N	0.0020
0116	CYANIDE	LT	mg/L	0.0500	0.0100	N	0.1999	N	0.2000
0019	FLUORIDE	EQ	mg/L	0.2000	0.4000	N	1.9999	N	4.0000
0114	NITRITE-N	LT	mg/L	0.1000	0.2000	N	0.4999	N	1.0000
0020	NITRATE-N	EQ	mg/L	0.5000	1.7000	N	4.9990	N	10.0000
0161	TOTAL NITRATE/NITRITE	EQ	mg/L	0.5000	1.7000	N		N	
0008	IRON	LT	mg/L	0.1000	0.1000	N		N	
0010	MANGANESE	EQ	mg/L	0.0100	0.0010	N		N	
0013	SILVER	LT	mg/L	0.1000	0.1000	N		N	
0021	CHLORIDE	EQ	mg/L	20.0000	10.0000	N		N	
0022	SULFATE	EQ	mg/L	50.0000	33.1000	N		N	
0024	ZINC	LT	mg/L	0.2000	0.2000	N		N	
0014	SODIUM	EQ	mg/L	5.0000	18.9000	N		N	
0015	HARDNESS	EQ	mg/L	10.0000	155.5000	N		N	
0016	CONDUCTIVITY	EQ	Umhos/c	70.0000	398.0000	N		N	
0017	TURBIDITY	EQ	NTU	0.1000	0.4700	N		N	
0018	COLOR	LT	CU	15.0000	15.0000	N		N	
0026	TDS-TOTAL DISSOLVED	NA	mg/L	100.0000		N		N	
0009	LEAD	LT	mg/L	0.0010	0.0010	N	9999.0000	N	
0023	COPPER	LT	mg/L	0.0200	0.0200	N	9999.0000	N	
0171	ORTHOPHOSPHATE	NA	mg/L	0.1000		N		N	
0172	SILICA	NA	mg/L	1.0000		N		N	
0402	ALUMINUM	NA	mg/L	0.0500		N		N	
0403	ALKALINITY-LAB	NA	mg/L	5.0000		N		N	
0404	MAGNESIUM	NA	mg/L	0.1000		N		N	
0405	CALCIUM	NA	mg/L	0.0500		N		N	
0406	AMMONIA	NA	mg/L	1.0000		N		N	
0407	CHLORINE DIOXIDE	NA	mg/L	0.8000		N		N	
0408	OZONE	NA	mg/L	0.2000		N		N	
0409	PH	NA	PH			N		N	
0410	CHLORAMINES	NA	mg/L			N		N	
0099	INACTIVATION RATIO	NA	None			N		N	
0100	RESIDUAL CHLORINE	NA	mg/L	0.2000		N		N	
0115	ASBESTOS	NA	MFL	0.2000		N	6.9990	N	7.0000

Result Range:

EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Source 09

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	IOC	046	17779	04/07/2016	well 9

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0004	ARSENIC	EQ	mg/L	0.0010	0.0050	N	0.0103	N	0.0104
0005	BARIUM	EQ	mg/L	0.1000	0.0560	N	1.9999	N	2.0000
0006	CADMIUM	LT	mg/L	0.0010	0.0020	N	0.0049	N	0.0050
0007	CHROMIUM	LT	mg/L	0.0070	0.0200	N	0.0999	N	0.1000
0011	MERCURY	LT	mg/L	0.0002	0.0004	N	0.0019	N	0.0020
0012	SELENIUM	EQ	mg/L	0.0020	0.0080	N	0.0499	N	0.0500
0110	BERYLLIUM	LT	mg/L	0.0003	0.0008	N	0.0039	N	0.0040
0111	NICKEL	LT	mg/L	0.0050	0.1000	N	0.0999	N	0.1000
0112	ANTIMONY	LT	mg/L	0.0030	0.0060	N	0.0059	N	0.0060
0113	THALLIUM	LT	mg/L	0.0010	0.0020	N	0.0019	N	0.0020
0116	CYANIDE	LT	mg/L	0.0500	0.0100	N	0.1999	N	0.2000
0019	FLUORIDE	EQ	mg/L	0.2000	0.3600	N	1.9999	N	4.0000
0114	NITRITE-N	LT	mg/L	0.1000	0.2000	N	0.4999	N	1.0000
0020	NITRATE-N	EQ	mg/L	0.5000	0.7500	N	4.9990	N	10.0000
0161	TOTAL NITRATE/NITRITE	EQ	mg/L	0.5000	0.7500	N		N	
0008	IRON	LT	mg/L	0.1000	0.1000	N		N	
0010	MANGANESE	EQ	mg/L	0.0100	0.0040	N		N	
0013	SILVER	LT	mg/L	0.1000	0.1000	N		N	
0021	CHLORIDE	EQ	mg/L	20.0000	9.3000	N		N	
0022	SULFATE	EQ	mg/L	50.0000	29.1000	N		N	
0024	ZINC	LT	mg/L	0.2000	0.2000	N		N	
0014	SODIUM	EQ	mg/L	5.0000	18.7000	N		N	
0015	HARDNESS	EQ	mg/L	10.0000	112.7000	N		N	
0016	CONDUCTIVITY	EQ	Umhos/c	70.0000	336.0000	N		N	
0017	TURBIDITY	EQ	NTU	0.1000	0.1500	N		N	
0018	COLOR	LT	CU	15.0000	15.0000	N		N	
0026	TDS-TOTAL DISSOLVED	NA	mg/L	100.0000		N		N	
0009	LEAD	LT	mg/L	0.0010	0.0010	N	9999.0000	N	
0023	COPPER	EQ	mg/L	0.0200	0.0080	N	9999.0000	N	
0171	ORTHOPHOSPHATE	NA	mg/L	0.1000		N		N	
0172	SILICA	NA	mg/L	1.0000		N		N	
0402	ALUMINUM	NA	mg/L	0.0500		N		N	
0403	ALKALINITY-LAB	NA	mg/L	5.0000		N		N	
0404	MAGNESIUM	NA	mg/L	0.1000		N		N	
0405	CALCIUM	NA	mg/L	0.0500		N		N	
0406	AMMONIA	NA	mg/L	1.0000		N		N	
0407	CHLORINE DIOXIDE	NA	mg/L	0.8000		N		N	
0408	OZONE	NA	mg/L	0.2000		N		N	
0409	PH	NA	PH			N		N	
0410	CHLORAMINES	NA	mg/L			N		N	
0099	INACTIVATION RATIO	NA	None			N		N	
0100	RESIDUAL CHLORINE	NA	mg/L	0.2000		N		N	
0115	ASBESTOS	NA	MFL	0.2000		N	6.9990	N	7.0000

Result Range:

EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Source 11

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	IOC	046	69662	09/21/2021	210 s 7th

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0004	ARSENIC	EQ	mg/L	0.0010	0.0027	N	0.0103	N	0.0104
0005	BARIUM	EQ	mg/L	0.1000	0.1020	N	1.9999	N	2.0000
0006	CADMIUM	LT	mg/L	0.0010	0.0010	N	0.0049	N	0.0050
0007	CHROMIUM	EQ	mg/L	0.0070	0.0025	N	0.0999	N	0.1000
0011	MERCURY	LT	mg/L	0.0002	0.0002	N	0.0019	N	0.0020
0012	SELENIUM	LT	mg/L	0.0020	0.0020	N	0.0499	N	0.0500
0110	BERYLLIUM	LT	mg/L	0.0003	0.0003	N	0.0039	N	0.0040
0111	NICKEL	EQ	mg/L	0.0050	0.0012	N	0.0999	N	0.1000
0112	ANTIMONY	LT	mg/L	0.0030	0.0030	N	0.0059	N	0.0060
0113	THALLIUM	LT	mg/L	0.0010	0.0010	N	0.0019	N	0.0020
0116	CYANIDE	LT	mg/L	0.0500	0.0500	N	0.1999	N	0.2000
0019	FLUORIDE	EQ	mg/L	0.2000	0.4500	N	1.9999	N	4.0000
0114	NITRITE-N	LT	mg/L	0.1000	0.1000	N	0.4999	N	1.0000
0020	NITRATE-N	EQ	mg/L	0.5000	2.2000	N	4.9990	N	10.0000
0161	TOTAL NITRATE/NITRITE	EQ	mg/L	0.5000	2.2000	N		N	
0008	IRON	LT	mg/L	0.1000	0.1000	N		N	
0010	MANGANESE	LT	mg/L	0.0100	0.0100	N		N	
0013	SILVER	LT	mg/L	0.1000	0.1000	N		N	
0021	CHLORIDE	EQ	mg/L	20.0000	11.4000	N		N	
0022	SULFATE	EQ	mg/L	50.0000	32.0000	N		N	
0024	ZINC	LT	mg/L	0.2000	0.2000	N		N	
0014	SODIUM	LT	mg/L	5.0000	5.0000	N		N	
0015	HARDNESS	EQ	mg/L	10.0000	154.0000	N		N	
0016	CONDUCTIVITY	EQ	Umhos/c	70.0000	373.0000	N		N	
0017	TURBIDITY	LT	NTU	0.1000	0.1000	N		N	
0018	COLOR	LT	CU	15.0000	15.0000	N		N	
0026	TDS-TOTAL DISSOLVED	EQ	mg/L	100.0000	283.0000	N		N	
0009	LEAD	LT	mg/L	0.0010	0.0010	N	9999.0000	N	
0023	COPPER	LT	mg/L	0.0200	0.0200	N	9999.0000	N	
0171	ORTHOPHOSPHATE	NA	mg/L	0.1000		N		N	
0172	SILICA	NA	mg/L	1.0000		N		N	
0402	ALUMINUM	NA	mg/L	0.0500		N		N	
0403	ALKALINITY-LAB	NA	mg/L	5.0000		N		N	
0404	MAGNESIUM	NA	mg/L	0.1000		N		N	
0405	CALCIUM	NA	mg/L	0.0500		N		N	
0406	AMMONIA	NA	mg/L	1.0000		N		N	
0407	CHLORINE DIOXIDE	NA	mg/L	0.8000		N		N	
0408	OZONE	NA	mg/L	0.2000		N		N	
0409	PH	NA	PH			N		N	
0410	CHLORAMINES	NA	mg/L			N		N	
0099	INACTIVATION RATIO	NA	None			N		N	
0100	RESIDUAL CHLORINE	NA	mg/L	0.2000		N		N	
0115	ASBESTOS	NA	MFL	0.2000		N	6.9990	N	7.0000

Result Range:

EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Source 14

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well Field	IOC	046	44712	08/01/2016	source 14

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0004	ARSENIC	EQ	mg/L	0.0010	0.0060	N	0.0103	N	0.0104
0005	BARIUM	EQ	mg/L	0.1000	0.0330	N	1.9999	N	2.0000
0006	CADMIUM	LT	mg/L	0.0010	0.0020	N	0.0049	N	0.0050
0007	CHROMIUM	LT	mg/L	0.0070	0.0200	N	0.0999	N	0.1000
0011	MERCURY	LT	mg/L	0.0002	0.0004	N	0.0019	N	0.0020
0012	SELENIUM	LT	mg/L	0.0020	0.0100	N	0.0499	N	0.0500
0110	BERYLLIUM	LT	mg/L	0.0003	0.0008	N	0.0039	N	0.0040
0111	NICKEL	LT	mg/L	0.0050	0.1000	N	0.0999	N	0.1000
0112	ANTIMONY	LT	mg/L	0.0030	0.0060	N	0.0059	N	0.0060
0113	THALLIUM	LT	mg/L	0.0010	0.0020	N	0.0019	N	0.0020
0116	CYANIDE	LT	mg/L	0.0500	0.0100	N	0.1999	N	0.2000
0019	FLUORIDE	EQ	mg/L	0.2000	0.3500	N	1.9999	N	4.0000
0114	NITRITE-N	LT	mg/L	0.1000	0.2000	N	0.4999	N	1.0000
0020	NITRATE-N	LT	mg/L	0.5000	0.2000	N	4.9990	N	10.0000
0161	TOTAL NITRATE/NITRITE	LT	mg/L	0.5000	0.5000	N		N	
0008	IRON	LT	mg/L	0.1000	0.1000	N		N	
0010	MANGANESE	LT	mg/L	0.0100	0.0100	N		N	
0013	SILVER	LT	mg/L	0.1000	0.1000	N		N	
0021	CHLORIDE	EQ	mg/L	20.0000	8.1500	N		N	
0022	SULFATE	EQ	mg/L	50.0000	29.5300	N		N	
0024	ZINC	EQ	mg/L	0.2000	0.0060	N		N	
0014	SODIUM	EQ	mg/L	5.0000	18.0000	N		N	
0015	HARDNESS	EQ	mg/L	10.0000	103.6000	N		N	
0016	CONDUCTIVITY	EQ	Umhos/c	70.0000	312.0000	N		N	
0017	TURBIDITY	EQ	NTU	0.1000	0.1600	N		N	
0018	COLOR	LT	CU	15.0000	15.0000	N		N	
0026	TDS-TOTAL DISSOLVED	NA	mg/L	100.0000		N		N	
0009	LEAD	LT	mg/L	0.0010	0.0010	N	9999.0000	N	
0023	COPPER	EQ	mg/L	0.0200	0.0100	N	9999.0000	N	
0171	ORTHOPHOSPHATE	NA	mg/L	0.1000		N		N	
0172	SILICA	NA	mg/L	1.0000		N		N	
0402	ALUMINUM	NA	mg/L	0.0500		N		N	
0403	ALKALINITY-LAB	NA	mg/L	5.0000		N		N	
0404	MAGNESIUM	NA	mg/L	0.1000		N		N	
0405	CALCIUM	NA	mg/L	0.0500		N		N	
0406	AMMONIA	NA	mg/L	1.0000		N		N	
0407	CHLORINE DIOXIDE	NA	mg/L	0.8000		N		N	
0408	OZONE	NA	mg/L	0.2000		N		N	
0409	PH	NA	PH			N		N	
0410	CHLORAMINES	NA	mg/L			N		N	
0099	INACTIVATION RATIO	NA	None			N		N	
0100	RESIDUAL CHLORINE	NA	mg/L	0.2000		N		N	
0115	ASBESTOS	NA	MFL	0.2000		N	6.9990	N	7.0000

Result Range:

EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

Detail - NIT

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Source 06 **Source Status - Act** **Source Type - Well**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
230 23641	08/24/2022	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
230 23728	08/25/2021	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 11141	11/03/2020	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 02311	10/03/2018	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 41262	10/03/2017	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 80061	10/11/2016	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
046 37782	07/06/2016	0020	NITRATE-N	LT	mg/L	0.50000	0.20000	N	4.99900	N	10.00000
154 19711	09/17/2015	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 61981	09/04/2014	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000

Source 07 **Source Status - Act** **Source Type - Well**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
230 26443	09/21/2021	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 05252	09/22/2020	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
230 30939	11/05/2019	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 98941	09/10/2018	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 37521	09/13/2017	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 74931	09/07/2016	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 30491	11/30/2015	0020	NITRATE-N	EQ	mg/L	0.50000	0.20000	N	4.99900	N	10.00000
046 45214	10/07/2014	0020	NITRATE-N	LT	mg/L	0.50000	0.20000	N	4.99900	N	10.00000
154 43681	05/13/2014	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000

Source 08 **Source Status - Act** **Source Type - Well**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
230 14501	05/24/2023	0020	NITRATE-N	EQ	mg/L	0.50000	2.19000	N	4.99900	N	10.00000
230 09645	04/06/2022	0020	NITRATE-N	EQ	mg/L	0.50000	2.14000	N	4.99900	N	10.00000
230 09617	04/06/2021	0020	NITRATE-N	EQ	mg/L	0.50000	2.14000	N	4.99900	N	10.00000
154 80891	04/07/2020	0020	NITRATE-N	EQ	mg/L	0.50000	1.70000	N	4.99900	N	10.00000
154 28121	03/27/2019	0020	NITRATE-N	EQ	mg/L	0.50000	1.70000	N	4.99900	N	10.00000
154 84165	06/06/2018	0020	NITRATE-N	EQ	mg/L	0.50000	1.70000	N	4.99900	N	10.00000
154 20031	06/06/2017	0020	NITRATE-N	EQ	mg/L	0.50000	1.80000	N	4.99900	N	10.00000
046 30241	06/07/2016	0020	NITRATE-N	EQ	mg/L	0.50000	1.70000	N	4.99900	N	10.00000
154 55981	05/10/2016	0020	NITRATE-N	EQ	mg/L	0.50000	1.80000	N	4.99900	N	10.00000
154 00321	05/11/2015	0020	NITRATE-N	EQ	mg/L	0.50000	2.00000	N	4.99900	N	10.00000
154 43682	05/13/2014	0020	NITRATE-N	EQ	mg/L	0.50000	1.67000	N	4.99900	N	10.00000

Source 09 **Source Status - Act** **Source Type - Well**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
230 23693	08/24/2022	0020	NITRATE-N	EQ	mg/L	0.50000	1.02000	N	4.99900	N	10.00000
230 23729	08/25/2021	0020	NITRATE-N	EQ	mg/L	0.50000	1.07000	N	4.99900	N	10.00000
154 11142	11/03/2020	0020	NITRATE-N	EQ	mg/L	0.50000	0.90000	N	4.99900	N	10.00000
154 56453	10/16/2019	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 02312	10/03/2018	0020	NITRATE-N	EQ	mg/L	0.50000	0.70000	N	4.99900	N	10.00000
154 41267	10/03/2017	0020	NITRATE-N	EQ	mg/L	0.50000	0.70000	N	4.99900	N	10.00000
154 80062	10/11/2016	0020	NITRATE-N	EQ	mg/L	0.50000	0.81000	N	4.99900	N	10.00000
046 17779	04/07/2016	0020	NITRATE-N	EQ	mg/L	0.50000	0.75000	N	4.99900	N	10.00000

154 14261	08/13/2015	0020	NITRATE-N	EQ	mg/L	0.50000	0.60000	N	4.99900	N	10.00000
154 56651	08/05/2014	0020	NITRATE-N	EQ	mg/L	0.50000	0.80000	N	4.99900	N	10.00000

Source 11 **Source Status - Act** **Source Type - Well**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
230 14502	05/24/2023	0020	NITRATE-N	EQ	mg/L	0.50000	2.24000	N	4.99900	N	10.00000
046 69662	09/21/2021	0020	NITRATE-N	EQ	mg/L	0.50000	2.20000	N	4.99900	N	10.00000
230 26442	09/21/2021	0020	NITRATE-N	EQ	mg/L	0.50000	2.15000	N	4.99900	N	10.00000
154 05251	09/22/2020	0020	NITRATE-N	EQ	mg/L	0.50000	2.30000	N	4.99900	N	10.00000
154 52611	09/11/2019	0020	NITRATE-N	EQ	mg/L	0.50000	2.06000	N	4.99900	N	10.00000
154 98942	09/10/2018	0020	NITRATE-N	EQ	mg/L	0.50000	1.60000	N	4.99900	N	10.00000
154 37522	09/13/2017	0020	NITRATE-N	EQ	mg/L	0.50000	1.80000	N	4.99900	N	10.00000
154 74932	09/07/2016	0020	NITRATE-N	EQ	mg/L	0.50000	2.00000	N	4.99900	N	10.00000
154 27341	11/09/2015	0020	NITRATE-N	EQ	mg/L	0.50000	1.90000	N	4.99900	N	10.00000
154 19712	09/17/2015	0020	NITRATE-N	EQ	mg/L	0.50000	1.70000	N	4.99900	N	10.00000
154 61982	09/04/2014	0020	NITRATE-N	EQ	mg/L	0.50000	1.82000	N	4.99900	N	10.00000

Source 12 **Source Status - Act** **Source Type - Well in Well Field**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
154 74933	09/07/2016	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000

Source 13 **Source Status - Act** **Source Type - Well in Well Field**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
154 74933	09/07/2016	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000

Source 14 **Source Status - Act** **Source Type - Well Field**

Lab/Sample Number	Sample Collect Date	Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
230 23640	08/24/2022	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
230 23727	08/25/2021	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 99021	08/10/2020	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 48301	08/14/2019	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 94041	08/07/2018	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
154 30961	08/08/2017	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000
046 44712	08/01/2016	0020	NITRATE-N	LT	mg/L	0.50000	0.20000	N	4.99900	N	10.00000
154 19713	09/17/2015	0020	NITRATE-N	LT	mg/L	0.50000	0.50000	N	4.99900	N	10.00000

Result Range:

EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

ARSENIC

Detail - Arsenic

Source	Source Type	Source Use	Lab/Sample Number	Sample Collect Date	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
06	Well	P	046 16420	03/09/2021	EQ	mg/L	0.00100	0.00800	N	0.01030	N	0.01040
07	Well	P	046 16424	03/09/2021	LT	mg/L	0.00100	0.00100	N	0.01030	N	0.01040

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

08	Well	P	046 21635	03/31/2021	EQ	mg/L	0.00100	0.00240	N	0.01030	N	0.01040
09	Well	P	046 16427	03/09/2021	EQ	mg/L	0.00100	0.00610	N	0.01030	N	0.01040
10	Well	E	081 78033	08/06/2001	LT	mg/L	0.00100	0.01000	N	0.01030	N	0.01040
11	Well	P	046 69662	09/21/2021	EQ	mg/L	0.00100	0.00270	N	0.01030	N	0.01040
12	Well in Well Field	P	046 58401	09/08/2022	EQ	mg/L	0.00100	0.00620	N	0.01030	N	0.01040
12	Well in Well Field	P	046 58401	09/08/2022	EQ	mg/L	0.00100	0.00620	N	0.01030	N	0.01040
13	Well in Well Field	P	046 58401	09/08/2022	EQ	mg/L	0.00100	0.00620	N	0.01030	N	0.01040
13	Well in Well Field	P	046 58401	09/08/2022	EQ	mg/L	0.00100	0.00620	N	0.01030	N	0.01040
14	Well Field	P	046 67611	09/11/2019	EQ	mg/L	0.00100	0.00500	N	0.01030	N	0.01040

VOLATILE ORGANIC CHEMICALS (VOC)

History - VOC - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
06	Well #6 - AFL811	W	Act	P	046 16423	03/09/2021	VOC1	61 of 64
06	Well #6 - AFL811	W	Act	P	046 11689	03/23/2015	VOC1	61 of 64
07	Well #7	W	Act	P	046 47888	07/21/2022	VOC1	61 of 64
07	Well #7	W	Act	P	046 48003	07/02/2019	VOC1	61 of 64
07	Well #7	W	Act	P	046 37783	07/06/2016	VOC1	61 of 64
08	Well #8 - AFL812	W	Act	P	046 76886	10/03/2018	VOC1	61 of 64
09	Well #9 - AFK905	W	Act	P	046 33158	05/12/2021	VOC1	61 of 64
09	Well #9 - AFK905	W	Act	P	046 20911	05/11/2015	VOC1	61 of 64
11	Well #11 - AKN517	W	Act	P	046 33157	05/12/2021	VOC1	61 of 64
11	Well #11 - AKN517	W	Act	P	046 20912	05/11/2015	VOC1	61 of 64
13	Well #13 - BAL875	WW	Act	P	046 47887	07/21/2022	VOC1	61 of 64
14	Wellfield / S12, S13	WF	Act	P	046 30242	06/07/2016	VOC1	61 of 64

Detail - VOC

Source 08

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	VOC1	046	76886	10/03/2018	well 8

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0027	CHLOROFORM	EQ	ug/L	0.5000	3.3000	N	9,999.0000	N	
0028	BROMODICHLOROMETHANE	EQ	ug/L	0.5000	2.7000	N	9,999.0000	N	
0029	DIBROMOCHLOROMETHANE	EQ	ug/L	0.5000	2.1000	N	9,999.0000	N	
0030	BROMOFORM	EQ	ug/L	0.5000	1.1000	N	9,999.0000	N	

0031	TOTAL TRIHALOMETHANE	EQ	ug/L		9.2000	N	60.4000	N	80.4000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

Source 11

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	VOC1	046	20912	05/11/2015	well 11

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0027	CHLOROFORM	EQ	ug/L	0.5000	4.6000	N	9,999.0000	N	
0031	TOTAL TRIHALOMETHANE	EQ	ug/L		4.6000	N	60.4000	N	80.4000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

SYNTHETIC ORGANIC CHEMICALS (SOC)

History - SOC - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
06	Well #6 - AFL811	W	Act	P	046 33720	05/09/2018	HERB1	11 of 18
06	Well #6 - AFL811	W	Act	P	046 33720	05/09/2018	INSECT1	7 of 10
06	Well #6 - AFL811	W	Act	P	046 33720	05/09/2018	PEST1	30 of 67
07	Well #7	W	Act	P	046 33721	05/09/2018	HERB1	11 of 18
07	Well #7	W	Act	P	046 33721	05/09/2018	INSECT1	7 of 10
07	Well #7	W	Act	P	046 33721	05/09/2018	PEST1	30 of 67
08	Well #8 - AFL812	W	Act	P	046 21637	03/31/2021	HERB1	14 of 18
08	Well #8 - AFL812	W	Act	P	046 21638	03/31/2021	PEST1	51 of 67
08	Well #8 - AFL812	W	Act	P	046 19552	04/12/2017	HERB1	12 of 18
08	Well #8 - AFL812	W	Act	P	046 19598	05/07/2014	HERB1	14 of 18
09	Well #9 - AFK905	W	Act	P	046 30221	05/09/2022	HERB1	14 of 18
09	Well #9 - AFK905	W	Act	P	046 30221	05/09/2022	PEST1	51 of 67
11	Well #11 - AKN517	W	Act	P	046 17775	04/07/2016	HERB1	11 of 18
11	Well #11 - AKN517	W	Act	P	046 17775	04/07/2016	PEST1	31 of 67
14	Wellfield / S12, S13	WF	Act	P	046 24429	05/10/2016	HERB1	11 of 18
14	Wellfield / S12, S13	WF	Act	P	046 24429	05/10/2016	PEST1	31 of 67

Detail - SOC

Source 08

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	HERB1	046	21637	03/31/2021	well 8

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0225	DCPA ACID METABOLITES	EQ	ug/L	0.1000	0.3200	Y	0.0999	N	

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND - No Detect

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Halo Acetic Acids (HAA5)

History - DBP - Analyte Group

Src Num	Lab / Sample Num	Collect Date	Test Panel	AnalytesName	Result Range	Result Qty
Dist	046 55342	08/24/2022	HAA5	BROMOCHLOROACETIC ACID	LT	1.00000
Dist	046 55342	08/24/2022	HAA5	DIBROMOACETIC ACID	LT	1.00000
Dist	046 55342	08/24/2022	HAA5	DICHLOROACETIC ACID	LT	1.00000
Dist	046 55342	08/24/2022	HAA5	MONOBROMOACETIC ACID	LT	1.00000
Dist	046 55342	08/24/2022	HAA5	MONOCHLOROACETIC ACID	LT	2.00000
Dist	046 55342	08/24/2022	HAA5	TRICHLOROACETIC ACID	LT	1.00000
Dist	046 55343	08/24/2022	HAA5	BROMOCHLOROACETIC ACID	LT	1.00000
Dist	046 55343	08/24/2022	HAA5	DIBROMOACETIC ACID	LT	1.00000
Dist	046 55343	08/24/2022	HAA5	DICHLOROACETIC ACID	LT	1.00000
Dist	046 55343	08/24/2022	HAA5	MONOBROMOACETIC ACID	LT	1.00000
Dist	046 55343	08/24/2022	HAA5	MONOCHLOROACETIC ACID	LT	2.00000
Dist	046 55343	08/24/2022	HAA5	TRICHLOROACETIC ACID	LT	1.00000
Dist	046 62889	08/25/2021	HAA5	BROMOCHLOROACETIC ACID	LT	1.00000
Dist	046 62889	08/25/2021	HAA5	DIBROMOACETIC ACID	LT	1.00000
Dist	046 62889	08/25/2021	HAA5	DICHLOROACETIC ACID	LT	1.00000
Dist	046 62889	08/25/2021	HAA5	MONOBROMOACETIC ACID	LT	1.00000
Dist	046 62889	08/25/2021	HAA5	MONOCHLOROACETIC ACID	LT	2.00000
Dist	046 62889	08/25/2021	HAA5	TRICHLOROACETIC ACID	LT	1.00000
Dist	046 62890	08/25/2021	HAA5	BROMOCHLOROACETIC ACID	LT	1.00000
Dist	046 62890	08/25/2021	HAA5	DIBROMOACETIC ACID	LT	1.00000
Dist	046 62890	08/25/2021	HAA5	DICHLOROACETIC ACID	LT	1.00000
Dist	046 62890	08/25/2021	HAA5	MONOBROMOACETIC ACID	LT	1.00000
Dist	046 62890	08/25/2021	HAA5	MONOCHLOROACETIC ACID	LT	2.00000
Dist	046 62890	08/25/2021	HAA5	TRICHLOROACETIC ACID	LT	1.00000
Dist	046 29566	05/11/2020	HAA5	BROMOCHLOROACETIC ACID	LT	1.00000
Dist	046 29566	05/11/2020	HAA5	DIBROMOACETIC ACID	LT	1.00000
Dist	046 29566	05/11/2020	HAA5	DICHLOROACETIC ACID	LT	1.00000
Dist	046 29566	05/11/2020	HAA5	MONOBROMOACETIC ACID	LT	1.00000
Dist	046 29566	05/11/2020	HAA5	MONOCHLOROACETIC ACID	LT	2.00000
Dist	046 29566	05/11/2020	HAA5	TRICHLOROACETIC ACID	LT	1.00000
Dist	046 29567	05/11/2020	HAA5	BROMOCHLOROACETIC ACID	LT	1.00000
Dist	046 29567	05/11/2020	HAA5	DIBROMOACETIC ACID	LT	1.00000
Dist	046 29567	05/11/2020	HAA5	DICHLOROACETIC ACID	LT	1.00000
Dist	046 29567	05/11/2020	HAA5	MONOBROMOACETIC ACID	LT	1.00000
Dist	046 29567	05/11/2020	HAA5	MONOCHLOROACETIC ACID	LT	2.00000
Dist	046 29567	05/11/2020	HAA5	TRICHLOROACETIC ACID	LT	1.00000
Dist	046 49372	07/03/2019	HAA5	BROMOCHLOROACETIC ACID	LT	1.00000
Dist	046 49372	07/03/2019	HAA5	DIBROMOACETIC ACID	LT	1.00000
Dist	046 49372	07/03/2019	HAA5	DICHLOROACETIC ACID	LT	1.00000

Dist	046 49372	07/03/2019	HAA5	MONOBROMOACETIC ACID	LT	1.00000
Dist	046 49372	07/03/2019	HAA5	MONOCHLOROACETIC ACID	LT	2.00000
Dist	046 49372	07/03/2019	HAA5	TRICHLOROACETIC ACID	LT	1.00000
Dist	046 49373	07/03/2019	HAA5	BROMOCHLOROACETIC ACID	LT	1.00000
Dist	046 49373	07/03/2019	HAA5	DIBROMOACETIC ACID	LT	1.00000
Dist	046 49373	07/03/2019	HAA5	DICHLOROACETIC ACID	LT	1.00000
Dist	046 49373	07/03/2019	HAA5	MONOBROMOACETIC ACID	LT	1.00000
Dist	046 49373	07/03/2019	HAA5	MONOCHLOROACETIC ACID	LT	2.00000
Dist	046 49373	07/03/2019	HAA5	TRICHLOROACETIC ACID	LT	1.00000
						56.00000

Total Trihalomethane (THM)

History - DBP - Analyte Group

Src Num	Lab / Sample Num	Collect Date	Test Panel	AnalytesName	Result Range	Result Qty	TrigInd
Dist	046 55342	08/24/2022	THM	TOTAL TRIHALOMETHANE	ND		N
Dist	046 55343	08/24/2022	THM	TOTAL TRIHALOMETHANE	ND		N
Dist	046 62889	08/25/2021	THM	TOTAL TRIHALOMETHANE	ND		N
Dist	046 62890	08/25/2021	THM	TOTAL TRIHALOMETHANE	ND		N
Dist	046 29566	05/11/2020	THM	TOTAL TRIHALOMETHANE	ND		N
Dist	046 29567	05/11/2020	THM	TOTAL TRIHALOMETHANE	ND		N
Dist	046 49371	07/03/2019	THM	TOTAL TRIHALOMETHANE	ND		N
Dist	046 49374	07/03/2019	THM	TOTAL TRIHALOMETHANE	ND		N

RADIONUCLIDES (RAD)

History - RAD - Analyte Group

Src Num	Source Name	Source Type	Source Status	Source Use	Lab / Sample Num	Collect Date	Test Panel	Analytes Tested
06	Well #6 - AFL811	W	Act	P	112 53201	05/12/2021	RAD	2 of 13
06	Well #6 - AFL811	W	Act	P	156 20889	05/11/2015	RAD	3 of 13
07	Well #7	W	Act	P	112 53202	05/12/2021	RAD	2 of 13
07	Well #7	W	Act	P	156 20890	05/11/2015	RAD	3 of 13
08	Well #8 - AFL812	W	Act	P	112 53203	05/12/2021	RAD	2 of 13
08	Well #8 - AFL812	W	Act	P	156 20892	05/11/2015	RAD	3 of 13
09	Well #9 - AFK905	W	Act	P	156 87001	09/11/2019	RAD	1 of 13
09	Well #9 - AFK905	W	Act	P	156 87002	09/11/2019	RAD	2 of 13
09	Well #9 - AFK905	W	Act	P	156 92001	05/09/2018	RAD	2 of 13
09	Well #9 - AFK905	W	Act	P	156 20891	05/11/2015	RAD	3 of 13
11	Well #11 - AKN517	W	Act	P	156 88001	04/06/2022	RAD	2 of 13
11	Well #11 - AKN517	W	Act	P	156 67496	11/03/2016	RAD	3 of 13
11	Well #11 - AKN517	W	Act	P	156 17775	04/07/2016	RAD	3 of 13
14	Wellfield / S12, S13	WF	Act	P	156 03801	07/05/2023	RAD	2 of 13

14	Wellfield / S12, S13	WF	Act	P	156 60024	10/03/2017	RAD	3 of 13

Detail - RAD

Source 06

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	RAD	156	20889	05/11/2015	well 6 hb

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0042	GROSS BETA	EQ	pCi/L	4.0000	4.1800	N	49.9999	N	50.0000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

Source 07

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	RAD	156	20890	05/11/2015	well 7 hb

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0042	GROSS BETA	EQ	pCi/L	4.0000	6.9000	N	49.9999	N	50.0000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

Source 08

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	RAD	156	20892	05/11/2015	well 8 hb

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0042	GROSS BETA	EQ	pCi/L	4.0000	4.8300	N	49.9999	N	50.0000
0165	GROSS ALPHA	EQ	pCi/L	3.0000	1.3600	N	14.9999	N	

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

Source 09

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	RAD	156	92001	05/09/2018	well 9

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0165	GROSS ALPHA	EQ	pCi/L	3.0000	7.3700	N	14.9999	N	

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

Source 11

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well	RAD	156	88001	04/06/2022	ng

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0042	GROSS BETA	EQ	pCi/L	4.0000	5.1700	N	49.9999	N	50.0000
0165	GROSS ALPHA	EQ	pCi/L	3.0000	0.2350	N	14.9999	N	

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

Sanitary Survey Data Report / Packet

As Of: 10/16/2023

Source 14

Source Status	Source Type	Test Panel	Lab Number	Sample Number	Collect Date	Sample Location
Act	Well Field	RAD	156	03801	07/05/2023	well 14

Analyte DOH #	Analyte Name	Result Range	Units	SRL	Result Qty	Trigger Ind	Trigger Value	MCL Ind	MCL Value
0165	GROSS ALPHA	EQ	pCi/L	3.0000	2.8500	N	14.9999	N	
0166	RADIUM 228	EQ	pCi/L	1.0000	0.5300	N	4.9999	N	5.0000

Result Range:
EQ - Equal To LT - Less Than GT - Greater Than NA - Not Analyzed ND -- No Detect

LEAD AND COPPER (LCR)

Monitoring Level	Start	End	Pb 90th	Pb Hi	Cu 90th	Cu Hi	Sam Reqt	Sam Taken	AL Pb Inc	AL Cu Inc	Mon Inc
Base3Y	01/2023	12/2025					30	0			
First6Mo	07/1992	12/1992					60	83			
Second6Mo	01/1993	06/1993					60	73			
Second6Mo	07/1993	12/1993					30	73			
Base3Y	01/2002	12/2004	.0019	.0032	.0698	.1250	30	32			
Base3Y	01/2020	12/2022	.0019	.0132	.0821	1.3200	30	30			
AnnualRed	01/1994	12/1994					30	33			
AnnualRed	01/1995	12/1995					30	34			
Base3Y	01/1996	12/1998					30	0			
Base3Y	01/1999	12/2001	.0030	.2400	.2000	.3600	30	35			
Base3Y	01/2017	12/2019	.0020	.0080	.0790	.1310	30	33			
Base3Y	01/2014	12/2016	.0010	.0020	.0710	.1070	30	34			
Base3Y	01/2008	12/2010	.0020	.0320	.1210	.1800	30	31			
Base3Y	01/2011	12/2013	.0010	.0050	.0870	.1280	30	33			
Base3Y	01/2005	12/2007	.0020	.0020	.0700	.3500	30	37			

***** End Of Report *****

City of SUNNYSIDE WASHINGTON

18

Hydraulic Modeling Results

HLA Engineering and Land Surveying, Inc.

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
869	J-342	986.59	Zone 3	0.0	1,050.44	28
696	J-270	923.59	Zone 2	3.0	1,004.43	35
739	J-290	835.45	Zone 1	6.0	917.4	35
1740	J-689	850.25	Zone 1	6.0	934.13	36
738	J-289	832.29	Zone 1	6.0	917.41	37
530	J-193	918.74	Zone 2	3.0	1,004.29	37
664	J-255	839.88	Zone 1	6.0	926.26	37
658	J-251	960.93	Zone 3	3.0	1,051.01	39
1003	J-394	911.9	Zone 2	3.0	1,003.93	40
659	J-252	959.72	Zone 3	3.0	1,051.84	40
587	J-221	961.84	Zone 3	3.0	1,054.28	40
756	J-298	954.21	Zone 3	3.0	1,046.90	40
1729	J-685	840.28	Zone 1	6.0	933.49	40
223	J-43	946.58	Zone 3	3.0	1,040.66	41
368	J-115	943.93	Zone 3	3.0	1,040.39	42
631	J-240	942.7	Zone 3	3.0	1,040.72	42
1308	J-518	906.8	Zone 2	3.0	1,005.06	43
565	J-211	946.79	Zone 3	3.0	1,045.14	43
1477	J-589	941.57	Zone 3	3.0	1,040.39	43
1088	J-428	828.32	Zone 1	6.0	927.46	43
632	J-241	939.86	Zone 3	3.0	1,039.25	43
367	J-114	939.72	Zone 3	3.0	1,040.39	44
4015	J-765	953.95	Zone 3	3.0	1,055.46	44
876	J-344	949.03	Zone 3	3.0	1,050.67	44
564	J-210	940.7	Zone 3	3.0	1,042.72	44
892	J-351	934.36	Zone 3	3.0	1,038.32	45
1452	J-578	934.92	Zone 3	3.0	1,040.39	46
4394	J-1081	916	Zone 2	0.0	1,022.29	46
586	J-220	947.93	Zone 3	3.0	1,054.71	46
377	J-119	808.24	Zone 1	0.0	915.09	46
757	J-299	938.06	Zone 3	3.0	1,046.90	47
1592	J-632	907.34	Zone 2	3.0	1,018.17	48
4421	J-1087	912	Zone 2	0.0	1,023.20	48
453	J-155	924.05	Zone 3	3.0	1,036.42	49
446	J-151	801.5	Zone 1	0.0	915.29	49
1451	J-577	926.09	Zone 3	6.0	1,040.40	49
304	J-83	802.83	Zone 1	6.0	917.63	50
1286	J-510	816.01	Zone 1	6.0	932.28	50
820	J-321	800.91	Zone 1	6.0	917.63	51
634	J-242	800.1	Zone 1	0.0	917.19	51
324	J-91	885.9	Zone 2	3.0	1,003.06	51
526	J-191	814.99	Zone 1	6.0	932.95	51
917	J-361	939.94	Zone 3	3.0	1,058.21	51
714	J-278	800.89	Zone 1	11.0	919.31	51
1318	J-523	919.36	Zone 3	3.0	1,038.57	52
1641	J-652	916.64	Zone 3	3.0	1,036.41	52
4290	J-777	920	Zone 3	3.0	1,040.39	52
140	J-13	915.88	Zone 3	3.0	1,036.41	52
4389	J-1080	914	Zone 3	0.0	1,034.74	52
232	J-46	881.45	Zone 2	3.0	1,002.34	52
695	J-269	940.04	Zone 3	3.0	1,061.16	52
4416	J-1086	912	Zone 3	0.0	1,035.98	54
837	J-327	879.18	Zone 2	3.0	1,003.29	54
910	J-359	798.46	Zone 1	6.0	922.6	54
949	J-374	877.55	Zone 2	3.0	1,001.85	54
1340	J-533	810.3	Zone 1	6.0	935.41	54
4376	J-1077	816	Zone 1	0.0	943.05	55
540	J-198	874.09	Zone 2	3.0	1,002.35	55
729	J-284	811.68	Zone 1	6.0	940.39	56
149	J-18	796	Zone 1	0.0	926.69	57
4403	J-1083	806	Zone 1	0.0	936.73	57
702	J-273	803.82	Zone 1	6.0	935.42	57
529	J-192	931.71	Zone 3	3.0	1,063.91	57
4412	J-1085	808	Zone 1	0.0	941.43	58
1146	J-451	870.76	Zone 2	3.0	1,004.21	58
908	J-358	870.8	Zone 2	3.0	1,004.29	58
575	J-215	801.56	Zone 1	6.0	935.42	58
1842	J-722	792.71	Zone 1	6.0	926.79	58
836	J-326	869.54	Zone 2	3.0	1,003.96	58
789	J-312	869.47	Zone 2	3.0	1,004.72	59
4609	J-1107	782	Zone 1	28.0	917.61	59
1510	J-599	868.48	Zone 2	3.0	1,004.60	59
674	J-259	868.28	Zone 2	3.0	1,004.44	59
1037	J-408	868.58	Zone 2	3.0	1,005.06	59
229	J-44	789.88	Zone 1	0.0	926.62	59
3993	J-763	780.72	Zone 1	6.0	917.64	59
1482	J-591	901.63	Zone 3	3.0	1,038.56	59

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1646	J-655	868.44	Zone 2	3.0	1,006.06	60
961	J-380	780.05	Zone 1	6.0	917.69	60
730	J-285	802.24	Zone 1	6.0	940.39	60
4294	J-778	902.2	Zone 3	3.0	1,040.39	60
924	J-363	866.17	Zone 2	3.0	1,004.49	60
699	J-271	928.39	Zone 3	3.0	1,067.18	60
701	J-272	796.4	Zone 1	6.0	935.42	60
652	J-247	877.38	Zone 2	3.0	1,016.62	60
1860	J-727	787.1	Zone 1	0.0	926.79	60
231	J-45	781.06	ɔn-FF Junctiɔ	6.0	920.93	61
468	J-162	897.72	Zone 3	3.0	1,037.79	61
211	J-36	861.51	Zone 2	3.0	1,002.34	61
1157	J-455	867.66	Zone 2	3.0	1,008.90	61
895	J-352	781.23	Zone 1	6.0	922.6	61
523	J-190	791.42	Zone 1	6.0	932.86	61
150	J-19	784.82	Zone 1	6.0	926.79	61
1621	J-643	785.63	Zone 1	6.0	929.81	62
1865	J-730	785.29	Zone 1	6.0	929.81	63
487	J-173	785.26	Zone 1	6.0	929.81	63
4287	J-776	870.7	Zone 2	3.0	1,015.57	63
486	J-172	784.46	Zone 1	0.0	929.81	63
212	J-37	856.94	Zone 2	3.0	1,002.34	63
490	J-175	784.39	Zone 1	0.0	929.81	63
473	J-164	784.33	Zone 1	6.0	929.87	63
1332	J-529	909.15	Zone 3	3.0	1,054.71	63
489	J-174	783.98	Zone 1	6.0	929.81	63
1484	J-592	787.17	Zone 1	6.0	933.15	63
1863	J-729	783.55	Zone 1	6.0	929.81	63
1104	J-433	783.09	Zone 1	6.0	929.44	63
1156	J-454	867.34	Zone 2	3.0	1,013.73	63
546	J-202	786.99	Zone 1	6.0	933.49	63
1862	J-728	783.22	Zone 1	6.0	929.81	63
985	J-390	786.06	Zone 1	6.0	932.75	63
408	J-132	788.66	Zone 1	6.0	935.42	63
545	J-201	787.35	Zone 1	6.0	934.13	64
509	J-183	785.36	Zone 1	6.0	932.57	64
1355	J-539	784.4	Zone 1	6.0	931.82	64
1770	J-697	907.69	Zone 3	3.0	1,055.27	64
1064	J-418	789.29	Zone 1	6.0	936.91	64
4057	J-769	779.99	Zone 1	6.0	927.68	64
508	J-182	783.84	Zone 1	6.0	931.93	64
483	J-170	781.61	Zone 1	6.0	929.81	64
1620	J-642	781.52	Zone 1	6.0	929.81	64
484	J-171	781.15	Zone 1	6.0	929.81	64
920	J-362	784.76	Zone 1	6.0	933.62	64
1820	J-714	782.68	Zone 1	6.0	931.82	65
1065	J-419	787.6	Zone 1	6.0	936.9	65
988	J-391	786.1	Zone 1	6.0	935.54	65
1160	J-457	783.96	Zone 1	6.0	933.43	65
460	J-159	772.82	Zone 1	6.0	922.54	65
1380	J-552	772.41	Zone 1	6.0	922.49	65
1287	J-511	781.93	Zone 1	6.0	932.11	65
1334	J-530	782.86	Zone 1	6.0	933.3	65
253	J-58	782.32	Zone 1	6.0	933.43	65
872	J-343	771.28	Zone 1	6.0	922.51	65
1492	J-595	771.34	Zone 1	6.0	922.64	65
1159	J-456	781.84	Zone 1	0.0	933.43	66
1051	J-414	776.75	Zone 1	6.0	929.82	66
465	J-161	782.17	Zone 1	6.0	935.56	66
4000	J-764	775.86	Zone 1	6.0	929.82	67
653	J-248	861.2	Zone 2	3.0	1,016.18	67
451	J-154	917.11	Zone 3	0.0	1,072.51	67
1379	J-551	767	Zone 1	6.0	922.51	67
784	J-309	775.3	Zone 1	6.0	930.84	67
459	J-158	766.86	Zone 1	6.0	922.54	67
261	J-62	774.14	Zone 1	0.0	929.82	67
4039	J-768	773.93	Zone 1	6.0	929.82	67
1491	J-594	766.89	Zone 1	6.0	922.81	67
1771	J-698	899.31	Zone 3	3.0	1,055.27	67
262	J-63	773.85	Zone 1	6.0	929.82	67
1025	J-402	846.25	Zone 2	3.0	1,002.34	68
1415	J-564	775	Zone 1	6.0	931.54	68
753	J-296	765.42	Zone 1	6.0	922.48	68
370	J-116	772.61	Zone 1	0.0	929.83	68
371	J-117	772.41	Zone 1	6.0	929.82	68
511	J-184	765.02	Zone 1	6.0	922.68	68
1086	J-427	772.72	Zone 1	6.0	930.54	68

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
512	J-185	765.23	Zone 1	6.0	923.1	68
592	J-222	771.92	Zone 1	6.0	929.82	68
497	J-177	771.9	Zone 1	6.0	929.83	68
1818	J-713	771.68	Zone 1	6.0	929.82	68
853	J-335	772.29	Zone 1	6.0	930.54	68
1184	J-464	772.09	Zone 1	6.0	930.54	69
1085	J-426	771.74	Zone 1	6.0	930.54	69
852	J-334	771.54	Zone 1	6.0	930.54	69
477	J-166	772.69	Zone 1	6.0	931.84	69
1141	J-448	762.86	Zone 1	6.0	922.63	69
3881	J-762	842.15	Zone 2	0.0	1,002.34	69
1040	J-409	770.05	Zone 1	6.0	930.66	69
1148	J-452	768.97	Zone 1	6.0	929.82	70
543	J-200	769.02	Zone 1	6.0	929.93	70
862	J-339	843.43	Zone 2	3.0	1,004.41	70
855	J-336	761.44	Zone 1	11.0	922.54	70
1625	J-645	769.82	Zone 1	11.0	931.09	70
1149	J-453	768.5	Zone 1	6.0	929.82	70
1144	J-450	761.01	Zone 1	6.0	922.63	70
863	J-340	842.65	Zone 2	3.0	1,004.33	70
1883	J-738	768.15	Zone 1	6.0	929.89	70
542	J-199	768	Zone 1	6.0	929.93	70
1744	J-690	767.68	Zone 1	6.0	929.87	70
1291	J-513	767.57	Zone 1	11.0	929.82	70
4071	J-772	768.5	Zone 1	6.0	930.84	70
617	J-234	769.11	Zone 1	6.0	931.54	70
1597	J-635	768.24	Zone 1	6.0	930.71	70
1890	J-741	767.33	Zone 1	6.0	929.94	70
1353	J-538	768.07	Zone 1	6.0	930.79	70
662	J-254	766.81	Zone 1	6.0	929.84	71
661	J-253	766.74	Zone 1	6.0	929.84	71
246	J-55	766.68	Zone 1	0.0	929.84	71
778	J-307	766.21	Zone 1	6.0	929.87	71
616	J-233	767.73	Zone 1	6.0	931.54	71
273	J-69	766.03	Zone 1	6.0	929.84	71
1138	J-446	758.18	Zone 1	6.0	922.63	71
1187	J-465	765.11	Zone 1	6.0	929.83	71
940	J-370	765.04	Zone 1	6.0	929.85	71
1608	J-640	757.4	Zone 1	6.0	922.48	71
1053	J-415	764.75	Zone 1	11.0	929.84	71
777	J-306	764.63	Zone 1	6.0	929.87	71
335	J-94	764.81	Zone 1	6.0	930.12	72
264	J-64	818.53	Zone 2	3.0	984.1	72
134	J-11	764.9	Zone 1	6.0	930.47	72
135	J-12	764.86	Zone 1	0.0	930.47	72
214	J-38	838.58	Zone 2	0.0	1,004.29	72
478	J-167	765.97	Zone 1	6.0	931.75	72
972	J-385	764.65	Zone 1	6.0	930.47	72
234	J-47	764.01	Zone 1	6.0	929.87	72
1330	J-528	765.61	Zone 1	6.0	931.54	72
4407	J-1084	808	Zone 2	0.0	973.97	72
971	J-384	764.39	Zone 1	6.0	930.47	72
1049	J-413	763.79	Zone 1	6.0	929.87	72
941	J-371	763.73	Zone 1	6.0	929.85	72
598	J-223	763.68	Zone 1	6.0	929.84	72
787	J-311	764.66	Zone 1	6.0	930.85	72
235	J-48	763.68	Zone 1	6.0	929.87	72
599	J-224	763.62	Zone 1	6.0	929.84	72
847	J-331	764.22	Zone 1	6.0	930.47	72
1143	J-449	756.17	Zone 1	6.0	922.63	72
754	J-297	755.98	Zone 1	6.0	922.48	72
1919	J-752	763.36	Zone 1	6.0	929.98	72
613	J-231	764.7	Zone 1	6.0	931.55	72
243	J-53	763.46	Zone 1	6.0	930.47	72
1301	J-517	762.7	Zone 1	6.0	929.88	72
1918	J-751	762.79	Zone 1	6.0	929.98	72
4549	J-1096	755	Zone 1	0.0	922.5	72
1710	J-679	762.24	Zone 1	6.0	929.96	73
362	J-111	762.16	Zone 1	6.0	929.89	73
614	J-232	763.81	Zone 1	6.0	931.54	73
786	J-310	763.11	Zone 1	6.0	930.85	73
4067	J-771	763.04	Zone 1	6.0	930.84	73
1713	J-680	762.05	Zone 1	6.0	929.91	73
1219	J-483	763.84	Zone 1	6.0	931.77	73
443	J-150	761.97	Zone 1	6.0	929.94	73
712	J-277	762.28	Zone 1	6.0	930.26	73
608	J-230	763.34	Zone 1	6.0	931.55	73

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1230	J-488	761.79	Zone 1	6.0	930.05	73
1238	J-492	761.54	Zone 1	6.0	929.87	73
1140	J-447	754.27	Zone 1	6.0	922.63	73
1374	J-549	761.52	Zone 1	6.0	929.89	73
1169	J-460	761.47	Zone 1	6.0	929.88	73
361	J-110	761.45	Zone 1	6.0	929.89	73
901	J-354	761.42	Zone 1	6.0	929.87	73
783	J-308	761.91	Zone 1	6.0	930.84	73
428	J-141	761.1	Zone 1	6.0	930.12	73
517	J-187	831.17	Zone 2	3.0	1,000.21	73
429	J-142	761.01	Zone 1	11.0	930.17	73
520	J-188	761.52	Zone 1	6.0	930.88	73
1540	J-611	753.15	Zone 1	6.0	922.69	73
379	J-120	760.3	Zone 1	6.0	929.88	73
711	J-276	760.57	Zone 1	6.0	930.26	73
1758	J-694	760.57	Zone 1	6.0	930.32	73
794	J-314	760.1	Zone 1	6.0	929.91	73
707	J-275	761.13	Zone 1	6.0	930.99	73
380	J-121	760	Zone 1	6.0	929.88	73
1439	J-574	757.48	Zone 1	6.0	927.4	74
980	J-387	759.77	Zone 1	6.0	929.88	74
1289	J-512	760.78	Zone 1	6.0	930.91	74
993	J-393	763.13	Zone 1	6.0	933.44	74
4323	J-779	759.7	Zone 1	0.0	930.08	74
373	J-118	752.16	Zone 1	6.0	922.69	74
1886	J-739	759.83	Zone 1	6.0	930.46	74
1877	J-735	759.5	Zone 1	6.0	930.13	74
554	J-206	751.96	Zone 1	6.0	922.63	74
1547	J-614	759.77	Zone 1	6.0	930.48	74
1373	J-548	759.17	Zone 1	6.0	929.89	74
926	J-364	751.82	Zone 1	6.0	922.55	74
1019	J-400	759.3	Zone 1	6.0	930.03	74
607	J-229	760.86	Zone 1	6.0	931.6	74
648	J-245	751.96	Zone 1	6.0	922.71	74
502	J-179	759.11	Zone 1	6.0	930.04	74
553	J-205	751.67	Zone 1	6.0	922.63	74
1803	J-707	758.89	Zone 1	6.0	930.02	74
937	J-369	758.89	Zone 1	6.0	930.07	74
382	J-122	758.81	Zone 1	6.0	930.02	74
1017	J-399	758.57	Zone 1	6.0	929.89	74
494	J-176	751.2	Zone 1	6.0	922.71	74
1367	J-545	758.23	Zone 1	6.0	929.89	74
687	J-265	751.07	Zone 1	6.0	922.75	74
1113	J-436	758.21	Zone 1	6.0	929.91	74
521	J-189	758.99	Zone 1	6.0	930.91	74
1678	J-668	761.44	Zone 1	6.0	933.44	74
503	J-180	758.02	Zone 1	6.0	930.04	74
1274	J-505	757.96	Zone 1	6.0	930	74
1174	J-462	757.85	Zone 1	6.0	929.89	74
1016	J-398	757.85	Zone 1	6.0	929.89	74
412	J-133	759.08	Zone 1	6.0	931.25	74
1282	J-508	759.33	Zone 1	6.0	931.55	75
215	J-39	831.81	Zone 2	3.0	1,004.29	75
1114	J-437	757.45	Zone 1	6.0	929.96	75
1462	J-581	757.45	Zone 1	6.0	929.98	75
667	J-257	757.17	Zone 1	6.0	929.99	75
666	J-256	757.17	Zone 1	6.0	930	75
903	J-355	758.02	Zone 1	6.0	930.94	75
769	J-302	758.4	Zone 1	6.0	931.33	75
1463	J-582	756.91	Zone 1	6.0	929.98	75
954	J-377	756.79	Zone 1	6.0	930	75
1090	J-429	756.71	Zone 1	6.0	929.99	75
1164	J-458	756.68	Zone 1	6.0	930.01	75
1698	J-676	758.21	Zone 1	6.0	931.76	75
1667	J-663	756.19	Zone 1	11.0	929.91	75
1132	J-443	756.97	Zone 1	6.0	930.79	75
296	J-80	755.54	Zone 1	6.0	929.42	75
319	J-89	757.82	Zone 1	6.0	931.87	75
1316	J-522	756.18	Zone 1	6.0	930.24	75
1555	J-617	756.03	Zone 1	6.0	930.49	75
672	J-258	755.31	Zone 1	6.0	930.03	76
1455	J-579	756.18	Zone 1	6.0	931.13	76
4495	J-1088	762	Zone 1	580.0	937.2	76
1679	J-669	756.84	Zone 1	6.0	932.1	76
1061	J-417	754.53	Zone 1	6.0	930	76
1725	J-683	747.01	Zone 1	6.0	922.5	76
1672	J-665	754.74	Zone 1	6.0	930.27	76

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1383	J-553	754.43	Zone 1	6.0	929.99	76
1172	J-461	747.16	Zone 1	6.0	922.72	76
4589	J-1103	762	Zone 1	0.0	937.86	76
933	J-368	753.24	Zone 1	6.0	929.75	76
551	J-204	754.93	Zone 1	6.0	931.72	76
1474	J-587	753.61	Zone 1	6.0	930.52	77
806	J-317	754.76	Zone 1	6.0	931.72	77
890	J-350	755.15	Zone 1	6.0	932.21	77
4398	J-1082	806	Zone 2	0.0	983.11	77
423	J-139	752.35	Zone 1	6.0	929.72	77
1327	J-526	755.68	Zone 1	6.0	933.07	77
619	J-235	745.34	Zone 1	6.0	922.74	77
480	J-168	745.32	Zone 1	11.0	922.73	77
4372	J-1076	816	Zone 2	0.0	993.43	77
951	J-375	756.43	Zone 1	6.0	933.89	77
1659	J-661	752.25	Zone 1	6.0	929.71	77
1181	J-463	753.87	Zone 1	6.0	931.5	77
772	J-303	755.8	Zone 1	6.0	933.53	77
1035	J-407	748.96	Zone 1	6.0	926.7	77
735	J-288	751.83	Zone 1	6.0	929.67	77
1824	J-716	752.07	Zone 1	6.0	930.05	77
1137	J-445	744.52	Zone 1	6.0	922.63	77
1564	J-621	752.91	Zone 1	6.0	931.19	77
1557	J-618	744.55	Zone 1	6.0	922.87	77
583	J-219	751.27	Zone 1	6.0	929.71	77
1899	J-745	757.61	Zone 1	585.0	936.07	77
1220	J-484	753.27	Zone 1	6.0	931.75	77
1685	J-672	752.59	Zone 1	6.0	931.13	77
1522	J-604	751.92	Zone 1	6.0	930.49	77
1580	J-627	752.91	Zone 1	6.0	931.51	77
1658	J-660	750.96	Zone 1	6.0	929.59	77
1854	J-726	745.59	Zone 1	6.0	924.28	77
1823	J-715	750.94	Zone 1	6.0	929.71	77
1582	J-628	744.01	Zone 1	6.0	922.84	77
1495	J-596	754.51	Zone 1	6.0	933.56	77
1634	J-649	750.61	Zone 1	6.0	929.67	77
686	J-264	743.51	Zone 1	11.0	922.75	78
1654	J-658	750.08	Zone 1	6.0	929.43	78
1663	J-662	750.29	Zone 1	6.0	929.66	78
557	J-208	743.18	Zone 1	6.0	922.63	78
4586	J-1102	758	Zone 1	0.0	937.56	78
952	J-376	754.29	Zone 1	6.0	933.89	78
322	J-90	751.86	Zone 1	6.0	931.49	78
1328	J-527	752.98	Zone 1	6.0	932.78	78
1837	J-720	750.86	Zone 1	6.0	930.68	78
968	J-383	750.27	Zone 1	6.0	930.11	78
690	J-266	749.67	Zone 1	6.0	929.55	78
1413	J-563	751.6	Zone 1	6.0	931.49	78
1801	J-706	751.26	Zone 1	6.0	931.19	78
1475	J-588	750.61	Zone 1	6.0	930.56	78
749	J-294	750.5	Zone 1	6.0	930.55	78
1429	J-569	750.8	Zone 1	6.0	930.92	78
1279	J-507	749.04	Zone 1	6.0	929.27	78
1347	J-535	878.6	Zone 3	3.0	1,058.89	78
556	J-207	742.23	Zone 1	6.0	922.63	78
506	J-181	749.23	Zone 1	6.0	929.65	78
1322	J-524	749.1	Zone 1	6.0	929.55	78
1228	J-487	750.01	Zone 1	6.0	930.52	78
906	J-357	751.21	Zone 1	6.0	931.72	78
1653	J-657	748.85	Zone 1	6.0	929.44	78
308	J-85	741.95	Zone 1	6.0	922.64	78
990	J-392	745.86	Zone 1	6.0	926.66	78
1892	J-742	744.63	Zone 1	6.0	925.49	78
963	J-381	745.75	Zone 1	6.0	926.66	78
1605	J-639	880.3	Zone 3	3.0	1,061.28	78
905	J-356	750.58	Zone 1	6.0	931.72	78
1795	J-704	750.49	Zone 1	6.0	931.72	78
1872	J-733	753.59	Zone 1	11.0	934.85	78
217	J-40	744.91	Zone 1	6.0	926.19	78
1489	J-593	751.49	Zone 1	6.0	932.78	78
750	J-295	749.25	Zone 1	6.0	930.55	78
1261	J-501	747.99	Zone 1	6.0	929.39	78
655	J-249	741.28	Zone 1	11.0	922.7	78
146	J-16	743.33	Zone 1	6.0	925.02	79
420	J-137	744.79	Zone 1	6.0	926.49	79
1215	J-481	747.33	Zone 1	6.0	929.12	79
812	J-320	748.63	Zone 1	6.0	930.49	79

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1532	J-608	746.67	Zone 1	6.0	928.59	79
1028	J-404	747.66	Zone 1	6.0	929.6	79
1681	J-670	748.23	Zone 1	6.0	930.27	79
97	J-2	743.39	Zone 1	6.0	925.51	79
1006	J-395	876.76	Zone 3	3.0	1,058.89	79
1826	J-717	752.51	Zone 1	6.0	934.64	79
1702	J-677	747.92	Zone 1	6.0	930.09	79
977	J-386	748.31	Zone 1	6.0	930.55	79
1214	J-480	746.73	Zone 1	6.0	929.04	79
475	J-165	749.2	Zone 1	6.0	931.53	79
1404	J-561	746.62	Zone 1	6.0	929.06	79
307	J-84	740.12	Zone 1	6.0	922.64	79
329	J-92	748.97	Zone 1	0.0	931.53	79
1033	J-406	744.2	Zone 1	6.0	926.89	79
147	J-17	742.27	Zone 1	6.0	925.01	79
281	J-74	746.13	Zone 1	6.0	928.96	79
434	J-144	748.64	Zone 1	6.0	931.53	79
1311	J-519	748.61	Zone 1	6.0	931.53	79
278	J-72	753	Zone 1	6.0	935.97	79
1430	J-570	750.84	Zone 1	6.0	933.83	79
865	J-341	745.68	Zone 1	6.0	928.74	79
435	J-145	748.27	Zone 1	6.0	931.38	79
1276	J-506	749.63	Zone 1	6.0	932.78	79
1244	J-494	748.28	Zone 1	6.0	931.48	79
1259	J-500	745.69	Zone 1	6.0	928.98	79
1127	J-442	745.34	Zone 1	6.0	928.77	79
1720	J-682	745.34	Zone 1	6.0	928.77	79
1558	J-619	739.31	Zone 1	6.0	922.85	79
1217	J-482	745.04	Zone 1	6.0	928.6	79
1124	J-441	747	Zone 1	6.0	930.58	79
421	J-138	742.68	Zone 1	6.0	926.26	79
1357	J-540	745.36	Zone 1	6.0	928.95	79
1924	J-753	750.93	Zone 1	0.0	934.63	79
432	J-143	747.73	Zone 1	6.0	931.43	79
1370	J-547	752.56	Zone 1	6.0	936.27	79
1873	J-734	752.51	Zone 1	6.0	936.27	80
656	J-250	738.9	Zone 1	6.0	922.7	80
885	J-347	746.86	Zone 1	6.0	930.68	80
1906	J-749	750.88	Zone 1	6.0	934.87	80
1269	J-504	744.7	Zone 1	6.0	928.71	80
1789	J-702	738.61	Zone 1	6.0	922.63	80
1263	J-502	747.28	Zone 1	6.0	931.33	80
4499	J-1090	753.1	Zone 1	0.0	937.2	80
4022	J-767	749.21	Zone 1	6.0	933.41	80
1398	J-560	746.27	Zone 1	6.0	930.55	80
1234	J-490	744.25	Zone 1	6.0	928.59	80
1683	J-671	746.14	Zone 1	6.0	930.51	80
3865	J-761	750.48	Zone 1	6.0	934.87	80
1313	J-520	745.18	Zone 1	11.0	929.61	80
964	J-382	742.2	Zone 1	6.0	926.66	80
117	J-4	746.2	Zone 1	17.0	930.68	80
643	J-244	746.11	Zone 1	6.0	930.63	80
1245	J-495	746.97	Zone 1	6.0	931.51	80
1423	J-566	750.24	Zone 1	6.0	934.79	80
1751	J-691	749.09	Zone 1	6.0	933.72	80
678	J-261	743.46	Zone 1	6.0	928.49	80
1265	J-503	743.4	Zone 1	6.0	928.43	80
1435	J-573	743.45	Zone 1	6.0	928.64	80
1200	J-472	739.82	Zone 1	6.0	925	80
810	J-319	741.63	Zone 1	6.0	926.83	80
1116	J-438	743.35	Zone 1	6.0	928.57	80
1134	J-444	743.4	Zone 1	6.0	928.64	80
677	J-260	743.26	Zone 1	6.0	928.5	80
1636	J-650	742.41	Zone 1	6.0	927.8	80
680	J-262	748.64	Zone 1	6.0	934.06	80
829	J-324	743.86	Zone 1	6.0	929.42	80
809	J-318	741.27	Zone 1	6.0	926.84	80
626	J-237	741.91	Zone 1	6.0	927.48	80
1119	J-439	741.13	Zone 1	6.0	926.75	80
775	J-305	746.08	Zone 1	6.0	931.72	80
448	J-152	742.09	Zone 1	11.0	927.73	80
683	J-263	747.35	Zone 1	6.0	933.19	80
310	J-86	748.64	Zone 1	6.0	934.52	80
888	J-349	740.86	Zone 1	6.0	926.83	80
1501	J-597	742.81	Zone 1	6.0	928.81	80
1369	J-546	750.83	Zone 1	6.0	936.86	80
1835	J-719	743.3	Zone 1	6.0	929.34	80

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1223	J-485	742.08	Zone 1	6.0	928.16	81
742	J-291	742.08	Zone 1	0.0	928.17	81
859	J-337	744.11	Zone 1	6.0	930.26	81
1692	J-673	745.36	Zone 1	6.0	931.59	81
886	J-348	744.45	Zone 1	6.0	930.68	81
1376	J-550	741.43	Zone 1	6.0	927.68	81
639	J-243	745.93	Zone 1	6.0	932.19	81
288	J-76	741.78	Zone 1	0.0	928.11	81
897	J-353	816.01	Zone 2	3.0	1,002.34	81
287	J-75	741.76	Zone 1	0.0	928.11	81
878	J-345	742.41	Zone 1	6.0	928.78	81
860	J-338	743.9	Zone 1	6.0	930.33	81
1195	J-470	742.74	Zone 1	6.0	929.31	81
1077	J-423	741.43	Zone 1	6.0	928.17	81
625	J-236	740.77	Zone 1	6.0	927.67	81
1192	J-468	740.65	Zone 1	6.0	927.54	81
931	J-367	745	Zone 1	0.0	931.9	81
1637	J-651	740.85	Zone 1	6.0	927.77	81
605	J-228	741.76	Zone 1	6.0	928.78	81
291	J-78	743.73	Zone 1	6.0	930.83	81
1905	J-748	743.84	Zone 1	11.0	930.94	81
764	J-300	740.77	Zone 1	6.0	927.92	81
1191	J-467	740.46	Zone 1	6.0	927.62	81
581	J-218	743.58	Zone 1	6.0	930.75	81
1901	J-746	737.77	Zone 1	6.0	924.95	81
1524	J-605	740.44	Zone 1	6.0	927.63	81
290	J-77	743.59	Zone 1	6.0	930.8	81
1251	J-498	740.77	Zone 1	6.0	928.02	81
1731	J-686	743.4	Zone 1	6.0	930.68	81
1236	J-491	740.25	Zone 1	6.0	927.63	81
1738	J-688	743.07	Zone 1	6.0	930.46	81
4281	J-774	740.2	Zone 1	6.0	927.64	81
774	J-304	744.21	Zone 1	6.0	931.72	81
578	J-216	741.88	Zone 1	6.0	929.42	81
514	J-186	743.31	Zone 1	6.0	930.84	81
604	J-227	741.44	Zone 1	6.0	928.99	81
1629	J-646	744.05	Zone 1	6.0	931.75	81
159	J-23	765.71	Zone 1	6.0	953.44	81
240	J-51	742.71	Zone 1	6.0	930.48	81
1194	J-469	742.74	Zone 1	6.0	930.58	81
831	J-325	742.74	Zone 1	6.0	930.69	81
629	J-239	739.19	Zone 1	6.0	927.14	81
237	J-49	742.74	Zone 1	6.0	930.76	81
238	J-50	742.74	Zone 1	6.0	930.76	81
1697	J-675	743.72	Zone 1	6.0	931.75	81
1466	J-584	741.42	Zone 1	6.0	929.48	81
1845	J-723	736.99	Zone 1	6.0	925.14	81
1870	J-732	740.93	Zone 1	6.0	929.09	81
579	J-217	741.18	Zone 1	6.0	929.42	81
241	J-52	742.24	Zone 1	6.0	930.49	81
414	J-134	747.43	Zone 1	6.0	935.79	81
1479	J-590	741.23	Zone 1	6.0	929.66	82
1206	J-476	736.55	Zone 1	6.0	924.99	82
270	J-67	742.03	Zone 1	11.0	930.53	82
1693	J-674	743.45	Zone 1	6.0	931.94	82
1944	J-759	743.2	Zone 1	11.0	931.75	82
1648	J-656	738.56	Zone 1	6.0	927.17	82
1676	J-667	734.22	Zone 1	6.0	922.85	82
1210	J-479	738.51	Zone 1	6.0	927.14	82
1941	J-758	743.1	Zone 1	11.0	931.75	82
1568	J-623	738.48	Zone 1	6.0	927.17	82
628	J-238	738.42	Zone 1	6.0	927.14	82
3845	J-760	750.61	Zone 1	11.0	939.34	82
1544	J-612	740.14	Zone 1	6.0	928.87	82
1903	J-747	742.95	Zone 1	6.0	931.71	82
1030	J-405	738.8	Zone 1	6.0	927.67	82
1567	J-622	738.3	Zone 1	6.0	927.17	82
1840	J-721	738.2	Zone 1	6.0	927.17	82
1708	J-678	733.6	Zone 1	6.0	922.69	82
1752	J-692	747	Zone 1	0.0	936.11	82
1471	J-585	734.01	Zone 1	6.0	923.17	82
4515	J-1092	747.54	Zone 1	0.0	936.75	82
1925	J-754	750.61	Zone 1	6.0	939.89	82
131	J-10	740.12	Zone 1	6.0	929.42	82
1545	J-613	739.58	Zone 1	6.0	928.96	82
1932	J-756	750.61	Zone 1	0.0	940.01	82
388	J-125	741.03	Zone 1	6.0	930.47	82

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1043	J-410	738.15	Zone 1	6.0	927.67	82
1426	J-568	733.2	Zone 1	6.0	922.73	82
1881	J-737	737.8	Zone 1	6.0	927.35	82
1102	J-432	742	Zone 1	6.0	931.57	82
1299	J-516	741.1	Zone 1	6.0	930.68	82
437	J-146	740.95	Zone 1	6.0	930.57	82
1675	J-666	733.2	Zone 1	6.0	922.84	82
849	J-332	746.05	Zone 1	6.0	935.79	82
4278	J-773	737.7	Zone 1	6.0	927.44	82
1879	J-736	732.61	Zone 1	6.0	922.67	82
438	J-147	740.44	Zone 1	6.0	930.59	82
1013	J-397	737.29	Zone 1	6.0	927.52	82
1209	J-478	736.84	Zone 1	6.0	927.15	82
4592	J-1104	755	Zone 1	0.0	945.36	82
1197	J-471	736.51	Zone 1	6.0	926.9	82
722	J-282	745.37	Zone 1	6.0	935.79	82
850	J-333	745.36	Zone 1	6.0	935.79	82
1012	J-396	737.16	Zone 1	6.0	927.62	82
1551	J-615	738.14	Zone 1	6.0	928.71	82
338	J-95	738.97	Zone 1	0.0	929.54	82
344	J-99	738.94	Zone 1	11.0	929.53	82
1777	J-700	736.32	Zone 1	6.0	926.91	82
801	J-316	739.06	Zone 1	6.0	929.72	82
1552	J-616	738.02	Zone 1	6.0	928.73	83
1296	J-515	732.43	Zone 1	6.0	923.21	83
732	J-286	732.06	Zone 1	11.0	922.84	83
1519	J-603	739.63	Zone 1	6.0	930.42	83
4652	J-1110	740	<None>	0.0	930.79	83
4594	J-1105	753	Zone 1	0.0	943.8	83
1072	J-420	735.63	Zone 1	6.0	926.54	83
347	J-101	738.69	Zone 1	6.0	929.63	83
744	J-292	738.48	Zone 1	0.0	929.42	83
1465	J-583	738.51	Zone 1	6.0	929.47	83
418	J-136	731.84	Zone 1	11.0	922.82	83
1110	J-435	738.54	Zone 1	6.0	929.57	83
353	J-105	738.49	Zone 1	6.0	929.58	83
339	J-96	738.44	Zone 1	6.0	929.54	83
1284	J-509	738.31	Zone 1	6.0	929.42	83
341	J-97	738.48	Zone 1	6.0	929.6	83
982	J-388	737.32	Zone 1	6.0	928.56	83
301	J-81	738.15	Zone 1	6.0	929.4	83
1518	J-602	738.59	Zone 1	6.0	929.93	83
1021	J-401	735.53	Zone 1	6.0	926.9	83
4019	J-766	735.41	Zone 1	6.0	926.81	83
220	J-41	744.34	Zone 1	11.0	935.79	83
692	J-267	735.95	Zone 1	6.0	927.4	83
693	J-268	735.94	Zone 1	6.0	927.4	83
396	J-128	750.51	Zone 1	6.0	941.99	83
1623	J-644	738.16	Zone 1	6.0	929.69	83
883	J-346	731.23	Zone 1	6.0	922.76	83
1570	J-624	737.9	Zone 1	6.0	929.45	83
4512	J-1091	745.21	Zone 1	0.0	936.77	83
1786	J-701	737.9	Zone 1	6.0	929.47	83
315	J-87	738.18	Zone 1	11.0	929.76	83
1189	J-466	735	Zone 1	6.0	926.66	83
1930	J-755	738.15	Zone 1	6.0	929.81	83
1754	J-693	744.06	Zone 1	6.0	935.79	83
957	J-379	735.06	Zone 1	6.0	926.83	83
1793	J-703	731.07	Zone 1	6.0	922.84	83
316	J-88	737.88	Zone 1	6.0	929.76	83
800	J-315	737.82	Zone 1	6.0	929.72	83
4519	J-1093	743.57	Zone 1	0.0	935.48	83
1764	J-695	734.97	Zone 1	11.0	926.89	83
1562	J-620	736.68	Zone 1	6.0	928.63	83
745	J-293	737.43	Zone 1	6.0	929.42	83
399	J-129	756.54	Zone 1	6.0	948.57	83
405	J-131	751.84	Zone 1	6.0	944	83
1440	J-575	735.21	Zone 1	6.0	927.4	83
402	J-130	758.75	Zone 1	6.0	950.95	83
956	J-378	734.58	Zone 1	6.0	926.81	83
499	J-178	737.52	Zone 1	6.0	929.75	83
393	J-127	753.96	Zone 1	6.0	946.23	83
1203	J-474	732.67	Zone 1	6.0	924.98	83
1166	J-459	735.53	Zone 1	6.0	927.9	83
766	J-301	737.16	Zone 1	6.0	929.54	83
417	J-135	730.38	Zone 1	6.0	922.85	83
1345	J-534	736.92	Zone 1	6.0	929.42	83

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
983	J-389	735.55	Zone 1	6.0	928.09	83
1350	J-537	736.49	Zone 1	6.0	929.16	83
1656	J-659	759.91	Zone 1	6.0	952.65	83
1812	J-710	736.65	Zone 1	6.0	929.42	83
567	J-212	736.94	Zone 1	6.0	929.74	83
1121	J-440	729.8	Zone 1	6.0	922.72	83
1386	J-554	735.48	Zone 1	6.0	928.41	83
1365	J-544	735.52	Zone 1	6.0	928.47	83
1096	J-431	732.03	Zone 1	6.0	925.04	84
568	J-213	736.71	Zone 1	6.0	929.73	84
1869	J-731	735.5	Zone 1	6.0	928.57	84
1026	J-403	809.22	Zone 2	3.0	1,002.34	84
1396	J-559	735.76	Zone 1	6.0	928.95	84
1390	J-557	735.14	Zone 1	6.0	928.66	84
1733	J-687	729.64	Zone 1	6.0	923.3	84
129	J-9	731.23	Zone 1	6.0	924.98	84
259	J-61	729.44	Zone 1	6.0	923.22	84
4062	J-770	733.19	Zone 1	6.0	927.13	84
1045	J-411	730.92	Zone 1	6.0	924.97	84
1472	J-586	729	Zone 1	6.0	923.17	84
1083	J-425	735.52	Zone 1	6.0	929.72	84
720	J-281	732.9	Zone 1	6.0	927.13	84
1325	J-525	733.87	Zone 1	6.0	928.35	84
128	J-8	730.45	Zone 1	6.0	924.97	84
1425	J-567	727.97	Zone 1	6.0	922.73	84
1387	J-555	733.66	Zone 1	6.0	928.45	84
1814	J-711	731.89	Zone 1	6.0	926.69	84
1447	J-576	732.18	Zone 1	6.0	927.19	84
1364	J-543	733.42	Zone 1	0.0	928.46	84
1643	J-653	729.91	Zone 1	6.0	924.96	84
1395	J-558	733.64	Zone 1	6.0	928.69	84
258	J-60	728.06	Zone 1	6.0	923.22	84
1337	J-531	731.91	Zone 1	6.0	927.14	84
1849	J-724	729.68	Zone 1	6.0	925.03	85
1360	J-541	733.03	Zone 1	6.0	928.5	85
359	J-109	733.88	Zone 1	6.0	929.42	85
1389	J-556	732.94	Zone 1	6.0	928.57	85
1816	J-712	730.93	Zone 1	6.0	926.81	85
792	J-313	729.08	Zone 1	6.0	924.98	85
1829	J-718	729.05	Zone 1	6.0	924.96	85
268	J-66	733.52	Zone 1	11.0	929.58	85
1614	J-641	727.93	Zone 1	6.0	924.16	85
1348	J-536	862.49	Zone 3	3.0	1,058.89	85
1047	J-412	730.47	Zone 1	6.0	926.92	85
255	J-59	730.35	Zone 1	0.0	926.94	85
1361	J-542	731.85	Zone 1	6.0	928.47	85
1207	J-477	728.36	Zone 1	6.0	924.99	85
1806	J-709	732.65	Zone 1	6.0	929.41	85
1201	J-473	728.22	Zone 1	6.0	925.01	85
4603	J-1106	727.57	<None>	0.0	924.52	85
538	J-197	725.71	Zone 1	6.0	923.23	85
1338	J-532	729.5	Zone 1	6.0	927.14	86
153	J-21	727.22	Zone 1	6.0	924.96	86
1204	J-475	727.2	Zone 1	6.0	924.98	86
570	J-214	727.11	Zone 1	6.0	924.97	86
152	J-20	727.1	Zone 1	6.0	924.96	86
1644	J-654	726.91	Zone 1	6.0	924.95	86
385	J-123	725.77	Zone 1	0.0	923.96	86
602	J-226	725.03	Zone 1	6.0	923.26	86
365	J-113	725.49	Zone 1	6.0	924.16	86
537	J-196	724.53	Zone 1	6.0	923.24	86
1527	J-606	728.7	Zone 1	6.0	927.42	86
386	J-124	725.08	Zone 1	6.0	923.96	86
364	J-112	725.35	Zone 1	6.0	924.25	86
1504	J-598	728.32	Zone 1	6.0	927.41	86
249	J-56	725.78	Zone 1	6.0	924.97	86
1458	J-580	724.55	Zone 1	6.0	923.96	86
160	J-24	756	Zone 1	0.0	955.51	86
250	J-57	725.34	Zone 1	6.0	924.97	86
358	J-108	729.69	Zone 1	6.0	929.43	86
1232	J-489	726.81	Zone 1	6.0	926.86	87
275	J-70	724.64	Zone 1	6.0	924.96	87
1419	J-565	729.09	Zone 1	6.0	929.43	87
276	J-71	724.33	Zone 1	6.0	924.96	87
727	J-283	726.93	Zone 1	6.0	927.85	87
1850	J-725	724.03	Zone 1	6.0	924.96	87
1075	J-422	728.45	Zone 1	6.0	929.41	87

Scenario: 2023 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
4582	J-1101	725	Zone 1	0.0	926.03	87
95	J-1	723.56	Zone 1	6.0	924.96	87
1888	J-740	721.77	Zone 1	6.0	923.3	87
1225	J-486	723.27	Zone 1	6.0	924.96	87
426	J-140	723.08	Zone 1	6.0	924.96	87
143	J-14	727.62	Zone 1	6.0	929.52	87
144	J-15	727.56	Zone 1	6.0	929.48	87
441	J-149	726.26	Zone 1	6.0	928.21	87
1584	J-629	727.33	Zone 1	6.0	929.42	87
1716	J-681	720.47	Zone 1	6.0	922.71	87
1775	J-699	719.81	Zone 1	6.0	922.72	88
1535	J-609	720.62	Zone 1	6.0	923.57	88
1572	J-625	719.38	Zone 1	0.0	922.62	88
1895	J-744	725.99	Zone 1	6.0	929.41	88
1909	J-750	725.69	Zone 1	6.0	929.41	88
440	J-148	725.39	Zone 1	6.0	929.43	88
1603	J-638	717.29	Zone 1	6.0	922.12	89
1632	J-648	717.57	Zone 1	6.0	922.62	89
1631	J-647	717.24	Zone 1	6.0	922.62	89
1595	J-634	716.59	Zone 1	6.0	922	89
1074	J-421	723.86	Zone 1	6.0	929.41	89
1805	J-708	723.7	Zone 1	6.0	929.41	89
1247	J-496	723.55	Zone 1	6.0	929.41	89
841	J-328	723.19	Zone 1	6.0	929.41	89
842	J-329	723.06	Zone 1	6.0	929.41	89
1894	J-743	723.06	Zone 1	6.0	929.41	89
944	J-373	722.76	Zone 1	6.0	929.41	89
548	J-203	722.73	Zone 1	6.0	929.41	89
943	J-372	722.4	Zone 1	6.0	929.41	90
1432	J-571	715.43	Zone 1	6.0	922.49	90
1727	J-684	720.84	Zone 1	6.0	928.16	90
704	J-274	723	Zone 1	0.0	930.58	90
1433	J-572	714.74	Zone 1	6.0	922.49	90
1601	J-637	712.17	Zone 1	6.0	921.88	91
929	J-366	712.34	Zone 1	6.0	922.29	91
4580	J-1100	715	Zone 1	0.0	926.92	92
4326	J-780	708.6	Zone 1	0.0	921.94	92
390	J-126	709.87	Zone 1	6.0	923.42	92
1536	J-610	708.66	Zone 1	6.0	923.15	93
601	J-225	708.62	Zone 1	6.0	923.27	93
1590	J-631	705.33	Zone 1	6.0	921.77	94
1589	J-630	703.57	Zone 1	6.0	921.37	94
4284	J-775	703.3	Zone 1	6.0	921.79	95
928	J-365	703.38	Zone 1	6.0	922.29	95
1594	J-633	702.9	Zone 1	6.0	922	95
206	J-35	700.53	Zone 1	6.0	919.68	95
157	J-22	700.89	Zone 1	6.0	920.08	95
188	J-31	693.32	Zone 1	6.0	915.82	96
193	J-32	693.42	Zone 1	0.0	916.37	96
1936	J-757	690	Zone 1	585.0	913.23	97
198	J-33	690	Zone 1	6.0	913.49	97
166	J-25	690	Zone 1	6.0	914.06	97
176	J-27	692.53	Zone 1	6.0	917.07	97
171	J-26	690	Zone 1	6.0	914.64	97
203	J-34	692.77	Zone 1	6.0	917.7	97
185	J-30	693.31	Zone 1	6.0	918.35	97
179	J-28	690	Zone 1	6.0	915.22	97
182	J-29	693.61	Zone 1	6.0	919.01	98
1516	J-601	690.83	Zone 1	6.0	916.5	98
1515	J-600	688.56	Zone 1	6.0	916.5	99
1515	J-600	688.56	Zone 1	(N/A)	(N/A)	(N/A)

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
869	J-342	986.59	Zone 3	0.0	1,048.02	27
696	J-270	923.59	Zone 2	4.0	1,001.69	34
739	J-290	835.45	Zone 1	7.0	914.92	34
1740	J-689	850.25	Zone 1	7.0	928.6	34
738	J-289	832.29	Zone 1	7.0	914.92	36
530	J-193	918.74	Zone 2	4.0	1,001.49	36
664	J-255	839.88	Zone 1	7.0	917.31	34
658	J-251	960.93	Zone 3	4.0	1,047.91	38
1003	J-394	911.9	Zone 2	4.0	1,002.77	39
659	J-252	959.72	Zone 3	4.0	1,048.37	38
587	J-221	961.84	Zone 3	4.0	1,049.75	38
756	J-298	954.21	Zone 3	4.0	1,042.35	38
1729	J-685	840.28	Zone 1	7.0	926.96	38
223	J-43	946.58	Zone 3	4.0	1,034.70	38
368	J-115	943.93	Zone 3	4.0	1,034.35	39
631	J-240	942.7	Zone 3	4.0	1,034.78	40
1308	J-518	906.8	Zone 2	4.0	1,002.31	41
565	J-211	946.79	Zone 3	4.0	1,040.22	40
1477	J-589	941.57	Zone 3	4.0	1,034.35	40
1088	J-428	828.32	Zone 1	7.0	918.07	39
632	J-241	939.86	Zone 3	4.0	1,033.01	40
367	J-114	939.72	Zone 3	4.0	1,034.35	41
4015	J-765	953.95	Zone 3	4.0	1,050.79	42
876	J-344	949.03	Zone 3	4.0	1,047.08	42
564	J-210	940.7	Zone 3	4.0	1,037.26	42
892	J-351	934.36	Zone 3	4.0	1,031.89	42
1452	J-578	934.92	Zone 3	4.0	1,034.35	43
4394	J-1081	916	Zone 2	0.0	1,022.21	46
586	J-220	947.93	Zone 3	4.0	1,049.86	44
377	J-119	808.24	Zone 1	0.0	914.9	46
757	J-299	938.06	Zone 3	4.0	1,042.35	45
1592	J-632	907.34	Zone 2	4.0	1,017.28	48
4421	J-1087	912	Zone 2	0.0	1,023.13	48
453	J-155	924.05	Zone 3	4.0	1,029.65	46
446	J-151	801.5	Zone 1	0.0	914.91	49
1451	J-577	926.09	Zone 3	8.0	1,034.37	47
304	J-83	802.83	Zone 1	7.0	914.78	48
1286	J-510	816.01	Zone 1	7.0	925.48	47
820	J-321	800.91	Zone 1	7.0	914.82	49
634	J-242	800.1	Zone 1	0.0	915.04	50
324	J-91	885.9	Zone 2	4.0	1,000.57	50
526	J-191	814.99	Zone 1	7.0	925.2	48
917	J-361	939.94	Zone 3	4.0	1,051.45	48
714	J-278	800.89	Zone 1	15.0	914.73	49
1318	J-523	919.36	Zone 3	4.0	1,032.18	49
1641	J-652	916.64	Zone 3	4.0	1,029.64	49
4290	J-777	920	Zone 3	4.0	1,034.36	49
140	J-13	915.88	Zone 3	4.0	1,029.64	49
4389	J-1080	914	Zone 3	0.0	1,027.64	49
232	J-46	881.45	Zone 2	4.0	998.73	51
695	J-269	940.04	Zone 3	4.0	1,053.63	49
4416	J-1086	912	Zone 3	0.0	1,029.13	51
837	J-327	879.18	Zone 2	4.0	1,000.19	52
910	J-359	798.46	Zone 1	7.0	914.68	50
949	J-374	877.55	Zone 2	4.0	997.39	52
1340	J-533	810.3	Zone 1	7.0	929.56	52
4376	J-1077	816	Zone 1	0.0	943	55
540	J-198	874.09	Zone 2	4.0	998.74	54
729	J-284	811.68	Zone 1	7.0	938.33	55
149	J-18	796	Zone 1	0.0	917.43	53
4403	J-1083	806	Zone 1	0.0	936.55	56
702	J-273	803.82	Zone 1	7.0	929.56	54
529	J-192	931.71	Zone 3	4.0	1,055.67	54
4412	J-1085	808	Zone 1	0.0	941.27	58
1146	J-451	870.76	Zone 2	4.0	1,001.40	57
908	J-358	870.8	Zone 2	4.0	1,001.49	57
575	J-215	801.56	Zone 1	7.0	929.56	55
1842	J-722	792.71	Zone 1	7.0	917.46	54
836	J-326	869.54	Zone 2	4.0	1,001.07	57
789	J-312	869.47	Zone 2	4.0	1,002.07	57
4609	J-1107	782	Zone 1	37.0	914.73	57
1510	J-599	868.48	Zone 2	4.0	1,001.92	58
674	J-259	868.28	Zone 2	4.0	1,001.69	58
1037	J-408	868.58	Zone 2	4.0	1,002.31	58
229	J-44	789.88	Zone 1	0.0	917.41	55
3993	J-763	780.72	Zone 1	7.0	914.77	58
1482	J-591	901.63	Zone 3	4.0	1,032.17	56

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1646	J-655	868.44	Zone 2	4.0	1,003.02	58
961	J-380	780.05	Zone 1	7.0	914.79	58
730	J-285	802.24	Zone 1	7.0	938.33	59
4294	J-778	902.2	Zone 3	4.0	1,034.36	57
924	J-363	866.17	Zone 2	4.0	1,001.77	59
699	J-271	928.39	Zone 3	4.0	1,058.12	56
701	J-272	796.4	Zone 1	7.0	929.56	58
652	J-247	877.38	Zone 2	4.0	1,015.42	60
1860	J-727	787.1	Zone 1	0.0	917.46	56
231	J-45	781.06	ɔn-FF Junctiɔ	7.0	915.97	58
468	J-162	897.72	Zone 3	4.0	1,031.26	58
211	J-36	861.51	Zone 2	4.0	998.73	59
1157	J-455	867.66	Zone 2	4.0	1,006.34	60
895	J-352	781.23	Zone 1	7.0	913.79	57
523	J-190	791.42	Zone 1	7.0	925.05	58
150	J-19	784.82	Zone 1	7.0	917.46	57
1621	J-643	785.63	Zone 1	7.0	916.9	57
1865	J-730	785.29	Zone 1	7.0	916.9	57
487	J-173	785.26	Zone 1	7.0	916.9	57
4287	J-776	870.7	Zone 2	4.0	1,014.16	62
486	J-172	784.46	Zone 1	0.0	916.9	57
212	J-37	856.94	Zone 2	4.0	998.73	61
490	J-175	784.39	Zone 1	0.0	916.9	57
473	J-164	784.33	Zone 1	7.0	920.62	59
1332	J-529	909.15	Zone 3	4.0	1,049.86	61
489	J-174	783.98	Zone 1	7.0	916.9	58
1484	J-592	787.17	Zone 1	7.0	925.55	60
1863	J-729	783.55	Zone 1	7.0	916.9	58
1104	J-433	783.09	Zone 1	7.0	920.14	59
1156	J-454	867.34	Zone 2	4.0	1,012.01	63
546	J-202	786.99	Zone 1	7.0	926.97	61
1862	J-728	783.22	Zone 1	7.0	916.9	58
985	J-390	786.06	Zone 1	7.0	925.01	60
408	J-132	788.66	Zone 1	7.0	929.57	61
545	J-201	787.35	Zone 1	7.0	928.61	61
509	J-183	785.36	Zone 1	7.0	924.54	60
1355	J-539	784.4	Zone 1	7.0	923	60
1770	J-697	907.69	Zone 3	4.0	1,051.11	62
1064	J-418	789.29	Zone 1	7.0	932.19	62
4057	J-769	779.99	Zone 1	7.0	918.21	60
508	J-182	783.84	Zone 1	7.0	923.19	60
483	J-170	781.61	Zone 1	7.0	916.9	59
1620	J-642	781.52	Zone 1	7.0	916.9	59
484	J-171	781.15	Zone 1	7.0	916.9	59
920	J-362	784.76	Zone 1	7.0	926.39	61
1820	J-714	782.68	Zone 1	7.0	923	61
1065	J-419	787.6	Zone 1	7.0	932.18	63
988	J-391	786.1	Zone 1	7.0	932.14	63
1160	J-457	783.96	Zone 1	7.0	921.76	60
460	J-159	772.82	Zone 1	7.0	913.28	61
1380	J-552	772.41	Zone 1	7.0	913.17	61
1287	J-511	781.93	Zone 1	7.0	925.13	62
1334	J-530	782.86	Zone 1	7.0	927.52	63
253	J-58	782.32	Zone 1	7.0	921.76	60
872	J-343	771.28	Zone 1	7.0	913.21	61
1492	J-595	771.34	Zone 1	7.0	913.74	62
1159	J-456	781.84	Zone 1	0.0	921.76	61
1051	J-414	776.75	Zone 1	7.0	916.91	61
465	J-161	782.17	Zone 1	7.0	932.02	65
4000	J-764	775.86	Zone 1	7.0	916.91	61
653	J-248	861.2	Zone 2	4.0	1,014.88	66
451	J-154	917.11	Zone 3	0.0	1,065.43	64
1379	J-551	767	Zone 1	7.0	913.2	63
784	J-309	775.3	Zone 1	7.0	918.3	62
459	J-158	766.86	Zone 1	7.0	913.28	63
261	J-62	774.14	Zone 1	0.0	916.91	62
4039	J-768	773.93	Zone 1	7.0	916.91	62
1491	J-594	766.89	Zone 1	7.0	913.8	64
1771	J-698	899.31	Zone 3	4.0	1,051.11	66
262	J-63	773.85	Zone 1	7.0	916.91	62
1025	J-402	846.25	Zone 2	4.0	998.72	66
1415	J-564	775	Zone 1	7.0	919.19	62
753	J-296	765.42	Zone 1	7.0	913.16	64
370	J-116	772.61	Zone 1	0.0	916.92	62
371	J-117	772.41	Zone 1	7.0	916.92	63
511	J-184	765.02	Zone 1	7.0	913.65	64
1086	J-427	772.72	Zone 1	7.0	917.95	63

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
512	J-185	765.23	Zone 1	7.0	913.96	64
592	J-222	771.92	Zone 1	7.0	916.91	63
497	J-177	771.9	Zone 1	7.0	916.92	63
1818	J-713	771.68	Zone 1	7.0	916.91	63
853	J-335	772.29	Zone 1	7.0	917.95	63
1184	J-464	772.09	Zone 1	7.0	917.95	63
1085	J-426	771.74	Zone 1	7.0	917.95	63
852	J-334	771.54	Zone 1	7.0	917.95	63
477	J-166	772.69	Zone 1	7.0	922.58	65
1141	J-448	762.86	Zone 1	7.0	912.21	65
3881	J-762	842.15	Zone 2	0.0	998.73	68
1040	J-409	770.05	Zone 1	7.0	918.09	64
1148	J-452	768.97	Zone 1	7.0	916.91	64
543	J-200	769.02	Zone 1	7.0	917.04	64
862	J-339	843.43	Zone 2	4.0	1,001.65	68
855	J-336	761.44	Zone 1	15.0	913.25	66
1625	J-645	769.82	Zone 1	15.0	918.62	64
1149	J-453	768.5	Zone 1	7.0	916.91	64
1144	J-450	761.01	Zone 1	7.0	912.21	65
863	J-340	842.65	Zone 2	4.0	1,001.55	69
1883	J-738	768.15	Zone 1	7.0	917	64
542	J-199	768	Zone 1	7.0	917.04	64
1744	J-690	767.68	Zone 1	7.0	916.99	65
1291	J-513	767.57	Zone 1	15.0	916.92	65
4071	J-772	768.5	Zone 1	7.0	918.3	65
617	J-234	769.11	Zone 1	7.0	919.19	65
1597	J-635	768.24	Zone 1	7.0	921.49	66
1890	J-741	767.33	Zone 1	7.0	917.05	65
1353	J-538	768.07	Zone 1	7.0	918.24	65
662	J-254	766.81	Zone 1	7.0	917.01	65
661	J-253	766.74	Zone 1	7.0	917.01	65
246	J-55	766.68	Zone 1	0.0	917.01	65
778	J-307	766.21	Zone 1	7.0	916.99	65
616	J-233	767.73	Zone 1	7.0	919.19	66
273	J-69	766.03	Zone 1	7.0	917.01	65
1138	J-446	758.18	Zone 1	7.0	912.21	67
1187	J-465	765.11	Zone 1	7.0	916.94	66
940	J-370	765.04	Zone 1	7.0	917.02	66
1608	J-640	757.4	Zone 1	7.0	913.16	67
1053	J-415	764.75	Zone 1	15.0	916.95	66
777	J-306	764.63	Zone 1	7.0	916.99	66
335	J-94	764.81	Zone 1	7.0	917.47	66
264	J-64	818.53	Zone 2	4.0	959.24	61
134	J-11	764.9	Zone 1	7.0	917.92	66
135	J-12	764.86	Zone 1	0.0	917.92	66
214	J-38	838.58	Zone 2	0.0	1,001.49	70
478	J-167	765.97	Zone 1	7.0	921.99	68
972	J-385	764.65	Zone 1	7.0	917.92	66
234	J-47	764.01	Zone 1	7.0	917	66
1330	J-528	765.61	Zone 1	7.0	919.2	66
4407	J-1084	808	Zone 2	0.0	943.31	59
971	J-384	764.39	Zone 1	7.0	917.92	66
1049	J-413	763.79	Zone 1	7.0	917.01	66
941	J-371	763.73	Zone 1	7.0	917.02	66
598	J-223	763.68	Zone 1	7.0	916.96	66
787	J-311	764.66	Zone 1	7.0	918.33	66
235	J-48	763.68	Zone 1	7.0	917.01	66
599	J-224	763.62	Zone 1	7.0	916.96	66
847	J-331	764.22	Zone 1	7.0	917.92	67
1143	J-449	756.17	Zone 1	7.0	912.21	68
754	J-297	755.98	Zone 1	7.0	913.16	68
1919	J-752	763.36	Zone 1	7.0	917.08	67
613	J-231	764.7	Zone 1	7.0	919.2	67
243	J-53	763.46	Zone 1	7.0	917.92	67
1301	J-517	762.7	Zone 1	7.0	917.02	67
1918	J-751	762.79	Zone 1	7.0	917.08	67
4549	J-1096	755	Zone 1	0.0	913.19	68
1710	J-679	762.24	Zone 1	7.0	917.22	67
362	J-111	762.16	Zone 1	7.0	917.05	67
614	J-232	763.81	Zone 1	7.0	919.2	67
786	J-310	763.11	Zone 1	7.0	918.34	67
4067	J-771	763.04	Zone 1	7.0	918.3	67
1713	J-680	762.05	Zone 1	7.0	917.12	67
1219	J-483	763.84	Zone 1	7.0	922.9	69
443	J-150	761.97	Zone 1	7.0	917.17	67
712	J-277	762.28	Zone 1	7.0	917.69	67
608	J-230	763.34	Zone 1	7.0	919.2	67

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1230	J-488	761.79	Zone 1	7.0	917.37	67
1238	J-492	761.54	Zone 1	7.0	917.03	67
1140	J-447	754.27	Zone 1	7.0	912.21	68
1374	J-549	761.52	Zone 1	7.0	917.05	67
1169	J-460	761.47	Zone 1	7.0	917.05	67
361	J-110	761.45	Zone 1	7.0	917.05	67
901	J-354	761.42	Zone 1	7.0	917.02	67
783	J-308	761.91	Zone 1	7.0	918.31	68
428	J-141	761.1	Zone 1	7.0	917.48	68
517	J-187	831.17	Zone 2	4.0	992.72	70
429	J-142	761.01	Zone 1	15.0	917.55	68
520	J-188	761.52	Zone 1	7.0	918.37	68
1540	J-611	753.15	Zone 1	7.0	913.4	69
379	J-120	760.3	Zone 1	7.0	917.03	68
711	J-276	760.57	Zone 1	7.0	917.69	68
1758	J-694	760.57	Zone 1	7.0	917.78	68
794	J-314	760.1	Zone 1	7.0	917.08	68
707	J-275	761.13	Zone 1	7.0	918.49	68
380	J-121	760	Zone 1	7.0	917.03	68
1439	J-574	757.48	Zone 1	7.0	916.88	69
980	J-387	759.77	Zone 1	7.0	917.04	68
1289	J-512	760.78	Zone 1	7.0	918.4	68
993	J-393	763.13	Zone 1	7.0	921.77	69
4323	J-779	759.7	Zone 1	0.0	917.21	68
373	J-118	752.16	Zone 1	7.0	913.38	70
1886	J-739	759.83	Zone 1	7.0	917.92	68
1877	J-735	759.5	Zone 1	7.0	917.25	68
554	J-206	751.96	Zone 1	7.0	912.21	69
1547	J-614	759.77	Zone 1	7.0	917.94	68
1373	J-548	759.17	Zone 1	7.0	917.04	68
926	J-364	751.82	Zone 1	7.0	913.26	70
1019	J-400	759.3	Zone 1	7.0	917.18	68
607	J-229	760.86	Zone 1	7.0	919.27	69
648	J-245	751.96	Zone 1	7.0	913.32	70
502	J-179	759.11	Zone 1	7.0	917.37	68
553	J-205	751.67	Zone 1	7.0	912.21	69
1803	J-707	758.89	Zone 1	7.0	917.13	68
937	J-369	758.89	Zone 1	7.0	917.18	68
382	J-122	758.81	Zone 1	7.0	917.13	68
1017	J-399	758.57	Zone 1	7.0	917.05	69
494	J-176	751.2	Zone 1	7.0	913.32	70
1367	J-545	758.23	Zone 1	7.0	917.06	69
687	J-265	751.07	Zone 1	7.0	912.41	70
1113	J-436	758.21	Zone 1	7.0	917.21	69
521	J-189	758.99	Zone 1	7.0	918.4	69
1678	J-668	761.44	Zone 1	7.0	921.77	69
503	J-180	758.02	Zone 1	7.0	917.37	69
1274	J-505	757.96	Zone 1	7.0	917.13	69
1174	J-462	757.85	Zone 1	7.0	917.05	69
1016	J-398	757.85	Zone 1	7.0	917.07	69
412	J-133	759.08	Zone 1	7.0	918.84	69
1282	J-508	759.33	Zone 1	7.0	919.21	69
215	J-39	831.81	Zone 2	4.0	1,001.49	73
1114	J-437	757.45	Zone 1	7.0	917.22	69
1462	J-581	757.45	Zone 1	7.0	917.18	69
667	J-257	757.17	Zone 1	7.0	917.12	69
666	J-256	757.17	Zone 1	7.0	917.14	69
903	J-355	758.02	Zone 1	7.0	918.43	69
769	J-302	758.4	Zone 1	7.0	918.94	69
1463	J-582	756.91	Zone 1	7.0	917.18	69
954	J-377	756.79	Zone 1	7.0	917.13	69
1090	J-429	756.71	Zone 1	7.0	917.12	69
1164	J-458	756.68	Zone 1	7.0	917.38	70
1698	J-676	758.21	Zone 1	7.0	922.89	71
1667	J-663	756.19	Zone 1	15.0	917.41	70
1132	J-443	756.97	Zone 1	7.0	918.3	70
296	J-80	755.54	Zone 1	7.0	916.17	70
319	J-89	757.82	Zone 1	7.0	919.65	70
1316	J-522	756.18	Zone 1	7.0	920.84	71
1555	J-617	756.03	Zone 1	7.0	917.8	70
672	J-258	755.31	Zone 1	7.0	917.65	70
1455	J-579	756.18	Zone 1	7.0	918.7	70
4495	J-1088	762	Zone 1	781.0	924.72	70
1679	J-669	756.84	Zone 1	7.0	919.98	71
1061	J-417	754.53	Zone 1	7.0	917.13	70
1725	J-683	747.01	Zone 1	7.0	913.18	72
1672	J-665	754.74	Zone 1	7.0	918.02	71

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1383	J-553	754.43	Zone 1	7.0	917.11	70
1172	J-461	747.16	Zone 1	7.0	913.28	72
4589	J-1103	762	Zone 1	0.0	925.54	71
933	J-368	753.24	Zone 1	7.0	917.39	71
551	J-204	754.93	Zone 1	7.0	921.74	72
1474	J-587	753.61	Zone 1	7.0	917.8	71
806	J-317	754.76	Zone 1	7.0	921.82	72
890	J-350	755.15	Zone 1	7.0	920.16	71
4398	J-1082	806	Zone 2	0.0	955.56	65
423	J-139	752.35	Zone 1	7.0	917.39	71
1327	J-526	755.68	Zone 1	7.0	921.36	72
619	J-235	745.34	Zone 1	7.0	913.25	73
480	J-168	745.32	Zone 1	15.0	913.26	73
4372	J-1076	816	Zone 2	0.0	980.78	71
951	J-375	756.43	Zone 1	7.0	922.23	72
1659	J-661	752.25	Zone 1	7.0	917.39	71
1181	J-463	753.87	Zone 1	7.0	919.19	72
772	J-303	755.8	Zone 1	7.0	921.91	72
1035	J-407	748.96	Zone 1	7.0	916.61	73
735	J-288	751.83	Zone 1	7.0	917.74	72
1824	J-716	752.07	Zone 1	7.0	917.39	72
1137	J-445	744.52	Zone 1	7.0	912.21	73
1564	J-621	752.91	Zone 1	7.0	919.52	72
1557	J-618	744.55	Zone 1	7.0	913.13	73
583	J-219	751.27	Zone 1	7.0	917.39	72
1899	J-745	757.61	Zone 1	788.0	906.18	64
1220	J-484	753.27	Zone 1	7.0	922.88	73
1685	J-672	752.59	Zone 1	7.0	918.72	72
1522	J-604	751.92	Zone 1	7.0	917.8	72
1580	J-627	752.91	Zone 1	7.0	919.2	72
1658	J-660	750.96	Zone 1	7.0	917.63	72
1854	J-726	745.59	Zone 1	7.0	912.3	72
1823	J-715	750.94	Zone 1	7.0	917.39	72
1582	J-628	744.01	Zone 1	7.0	912.59	73
1495	J-596	754.51	Zone 1	7.0	921.99	72
1634	J-649	750.61	Zone 1	7.0	917.91	72
686	J-264	743.51	Zone 1	15.0	912.42	73
1654	J-658	750.08	Zone 1	7.0	917.63	72
1663	J-662	750.29	Zone 1	7.0	917.4	72
557	J-208	743.18	Zone 1	7.0	912.22	73
4586	J-1102	758	Zone 1	0.0	925.19	72
952	J-376	754.29	Zone 1	7.0	922.22	73
322	J-90	751.86	Zone 1	7.0	919.18	72
1328	J-527	752.98	Zone 1	7.0	921.3	73
1837	J-720	750.86	Zone 1	7.0	917.82	72
968	J-383	750.27	Zone 1	7.0	917.46	72
690	J-266	749.67	Zone 1	7.0	917.93	73
1413	J-563	751.6	Zone 1	7.0	919.18	73
1801	J-706	751.26	Zone 1	7.0	919.53	73
1475	J-588	750.61	Zone 1	7.0	917.81	72
749	J-294	750.5	Zone 1	7.0	917.81	72
1429	J-569	750.8	Zone 1	7.0	917.98	72
1279	J-507	749.04	Zone 1	7.0	917.48	73
1347	J-535	878.6	Zone 3	4.0	1,054.03	76
556	J-207	742.23	Zone 1	7.0	912.22	74
506	J-181	749.23	Zone 1	7.0	917.4	73
1322	J-524	749.1	Zone 1	7.0	918.44	73
1228	J-487	750.01	Zone 1	7.0	917.81	73
906	J-357	751.21	Zone 1	7.0	921.73	74
1653	J-657	748.85	Zone 1	7.0	917.77	73
308	J-85	741.95	Zone 1	7.0	912.23	74
990	J-392	745.86	Zone 1	7.0	915.56	73
1892	J-742	744.63	Zone 1	7.0	913.91	73
963	J-381	745.75	Zone 1	7.0	915.57	73
1605	J-639	880.3	Zone 3	4.0	1,055.99	76
905	J-356	750.58	Zone 1	7.0	921.73	74
1795	J-704	750.49	Zone 1	7.0	920.48	74
1872	J-733	753.59	Zone 1	15.0	921.23	73
217	J-40	744.91	Zone 1	7.0	914.57	73
1489	J-593	751.49	Zone 1	7.0	921.3	73
750	J-295	749.25	Zone 1	7.0	917.8	73
1261	J-501	747.99	Zone 1	7.0	917.75	73
655	J-249	741.28	Zone 1	15.0	913.24	74
146	J-16	743.33	Zone 1	7.0	913.17	73
420	J-137	744.79	Zone 1	7.0	916.35	74
1215	J-481	747.33	Zone 1	7.0	918.3	74
812	J-320	748.63	Zone 1	7.0	917.81	73

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1532	J-608	746.67	Zone 1	7.0	918.17	74
1028	J-404	747.66	Zone 1	7.0	917.4	73
1681	J-670	748.23	Zone 1	7.0	917.73	73
97	J-2	743.39	Zone 1	7.0	913.75	74
1006	J-395	876.76	Zone 3	4.0	1,054.03	77
1826	J-717	752.51	Zone 1	7.0	922.9	74
1702	J-677	747.92	Zone 1	7.0	917.64	73
977	J-386	748.31	Zone 1	7.0	917.8	73
1214	J-480	746.73	Zone 1	7.0	918.31	74
475	J-165	749.2	Zone 1	7.0	920.63	74
1404	J-561	746.62	Zone 1	7.0	917.43	74
307	J-84	740.12	Zone 1	7.0	912.23	74
329	J-92	748.97	Zone 1	0.0	920.63	74
1033	J-406	744.2	Zone 1	7.0	917.46	75
147	J-17	742.27	Zone 1	7.0	913.16	74
281	J-74	746.13	Zone 1	7.0	918.29	74
434	J-144	748.64	Zone 1	7.0	920.63	74
1311	J-519	748.61	Zone 1	7.0	920.58	74
278	J-72	753	Zone 1	7.0	922.18	73
1430	J-570	750.84	Zone 1	7.0	920.38	73
865	J-341	745.68	Zone 1	7.0	918.22	75
435	J-145	748.27	Zone 1	7.0	920.48	75
1276	J-506	749.63	Zone 1	7.0	921.31	74
1244	J-494	748.28	Zone 1	7.0	920.57	75
1259	J-500	745.69	Zone 1	7.0	917.74	74
1127	J-442	745.34	Zone 1	7.0	918.12	75
1720	J-682	745.34	Zone 1	7.0	917.04	74
1558	J-619	739.31	Zone 1	7.0	912.82	75
1217	J-482	745.04	Zone 1	7.0	918.18	75
1124	J-441	747	Zone 1	7.0	917.94	74
421	J-138	742.68	Zone 1	7.0	916.14	75
1357	J-540	745.36	Zone 1	7.0	918.07	75
1924	J-753	750.93	Zone 1	0.0	921.04	74
432	J-143	747.73	Zone 1	7.0	920.52	75
1370	J-547	752.56	Zone 1	7.0	922.44	74
1873	J-734	752.51	Zone 1	7.0	922.44	74
656	J-250	738.9	Zone 1	7.0	913.23	75
885	J-347	746.86	Zone 1	7.0	917.8	74
1906	J-749	750.88	Zone 1	7.0	921.24	74
1269	J-504	744.7	Zone 1	7.0	918.13	75
1789	J-702	738.61	Zone 1	7.0	912.22	75
1263	J-502	747.28	Zone 1	7.0	920.44	75
4499	J-1090	753.1	Zone 1	0.0	924.92	74
4022	J-767	749.21	Zone 1	7.0	922.09	75
1398	J-560	746.27	Zone 1	7.0	917.8	74
1234	J-490	744.25	Zone 1	7.0	918.09	75
1683	J-671	746.14	Zone 1	7.0	917.81	74
3865	J-761	750.48	Zone 1	7.0	921.24	74
1313	J-520	745.18	Zone 1	15.0	919.78	76
964	J-382	742.2	Zone 1	7.0	915.57	75
117	J-4	746.2	Zone 1	22.0	917.76	74
643	J-244	746.11	Zone 1	7.0	918.03	74
1245	J-495	746.97	Zone 1	7.0	920.76	75
1423	J-566	750.24	Zone 1	7.0	921.17	74
1751	J-691	749.09	Zone 1	7.0	922.48	75
678	J-261	743.46	Zone 1	7.0	918.17	76
1265	J-503	743.4	Zone 1	7.0	918.01	76
1435	J-573	743.45	Zone 1	7.0	917.81	75
1200	J-472	739.82	Zone 1	7.0	913.16	75
810	J-319	741.63	Zone 1	7.0	916.72	76
1116	J-438	743.35	Zone 1	7.0	917.94	76
1134	J-444	743.4	Zone 1	7.0	917.52	75
677	J-260	743.26	Zone 1	7.0	918.27	76
1636	J-650	742.41	Zone 1	7.0	916.73	75
680	J-262	748.64	Zone 1	7.0	920.54	74
829	J-324	743.86	Zone 1	7.0	916.17	75
809	J-318	741.27	Zone 1	7.0	916.91	76
626	J-237	741.91	Zone 1	7.0	917.51	76
1119	J-439	741.13	Zone 1	7.0	915.62	75
775	J-305	746.08	Zone 1	7.0	921.72	76
448	J-152	742.09	Zone 1	15.0	916.7	76
683	J-263	747.35	Zone 1	7.0	919.8	75
310	J-86	748.64	Zone 1	7.0	923.21	76
888	J-349	740.86	Zone 1	7.0	916.57	76
1501	J-597	742.81	Zone 1	7.0	917.32	76
1369	J-546	750.83	Zone 1	7.0	922.99	74
1835	J-719	743.3	Zone 1	7.0	917.22	75

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1223	J-485	742.08	Zone 1	7.0	917.92	76
742	J-291	742.08	Zone 1	0.0	917.92	76
859	J-337	744.11	Zone 1	7.0	917.75	75
1692	J-673	745.36	Zone 1	7.0	921.23	76
886	J-348	744.45	Zone 1	7.0	917.8	75
1376	J-550	741.43	Zone 1	7.0	917.88	76
639	J-243	745.93	Zone 1	7.0	918.95	75
288	J-76	741.78	Zone 1	0.0	917.88	76
897	J-353	816.01	Zone 2	4.0	998.73	79
287	J-75	741.76	Zone 1	0.0	917.88	76
878	J-345	742.41	Zone 1	7.0	917.06	76
860	J-338	743.9	Zone 1	7.0	917.81	75
1195	J-470	742.74	Zone 1	7.0	919.28	76
1077	J-423	741.43	Zone 1	7.0	916.79	76
625	J-236	740.77	Zone 1	7.0	917.64	77
1192	J-468	740.65	Zone 1	7.0	917.42	76
931	J-367	745	Zone 1	0.0	921.06	76
1637	J-651	740.85	Zone 1	7.0	916.69	76
605	J-228	741.76	Zone 1	7.0	916.98	76
291	J-78	743.73	Zone 1	7.0	917.81	75
1905	J-748	743.84	Zone 1	15.0	917.9	75
764	J-300	740.77	Zone 1	7.0	917.82	77
1191	J-467	740.46	Zone 1	7.0	917.3	77
581	J-218	743.58	Zone 1	7.0	918.22	76
1901	J-746	737.77	Zone 1	7.0	913.13	76
1524	J-605	740.44	Zone 1	7.0	916.69	76
290	J-77	743.59	Zone 1	7.0	917.79	75
1251	J-498	740.77	Zone 1	7.0	917.89	77
1731	J-686	743.4	Zone 1	7.0	917.73	75
1236	J-491	740.25	Zone 1	7.0	917.05	76
1738	J-688	743.07	Zone 1	7.0	917.98	76
4281	J-774	740.2	Zone 1	7.0	916.51	76
774	J-304	744.21	Zone 1	7.0	921.82	77
578	J-216	741.88	Zone 1	7.0	916.17	75
514	J-186	743.31	Zone 1	7.0	918.36	76
604	J-227	741.44	Zone 1	7.0	916.99	76
1629	J-646	744.05	Zone 1	7.0	922.87	77
159	J-23	765.71	Zone 1	7.0	936.39	74
240	J-51	742.71	Zone 1	7.0	917.46	76
1194	J-469	742.74	Zone 1	7.0	920.68	77
831	J-325	742.74	Zone 1	7.0	920.88	77
629	J-239	739.19	Zone 1	7.0	915.87	76
237	J-49	742.74	Zone 1	7.0	921.01	77
238	J-50	742.74	Zone 1	7.0	921.02	77
1697	J-675	743.72	Zone 1	7.0	922.87	78
1466	J-584	741.42	Zone 1	7.0	917.1	76
1845	J-723	736.99	Zone 1	7.0	913.32	76
1870	J-732	740.93	Zone 1	7.0	917	76
579	J-217	741.18	Zone 1	7.0	916.17	76
241	J-52	742.24	Zone 1	7.0	917.47	76
414	J-134	747.43	Zone 1	7.0	924.37	77
1479	J-590	741.23	Zone 1	7.0	917.28	76
1206	J-476	736.55	Zone 1	7.0	913.14	76
270	J-67	742.03	Zone 1	15.0	917.51	76
1693	J-674	743.45	Zone 1	7.0	921.67	77
1944	J-759	743.2	Zone 1	15.0	922.87	78
1648	J-656	738.56	Zone 1	7.0	916.23	77
1676	J-667	734.22	Zone 1	7.0	912.67	77
1210	J-479	738.51	Zone 1	7.0	916.11	77
1941	J-758	743.1	Zone 1	15.0	922.87	78
1568	J-623	738.48	Zone 1	7.0	916.25	77
628	J-238	738.42	Zone 1	7.0	915.88	77
3845	J-760	750.61	Zone 1	15.0	925.2	76
1544	J-612	740.14	Zone 1	7.0	916.85	76
1903	J-747	742.95	Zone 1	7.0	921.61	77
1030	J-405	738.8	Zone 1	7.0	916.23	77
1567	J-622	738.3	Zone 1	7.0	916.26	77
1840	J-721	738.2	Zone 1	7.0	916.27	77
1708	J-678	733.6	Zone 1	7.0	913.38	78
1752	J-692	747	Zone 1	0.0	924.75	77
1471	J-585	734.01	Zone 1	7.0	912.87	77
4515	J-1092	747.54	Zone 1	0.0	924.5	77
1925	J-754	750.61	Zone 1	7.0	925.69	76
131	J-10	740.12	Zone 1	7.0	916.17	76
1545	J-613	739.58	Zone 1	7.0	916.88	77
1932	J-756	750.61	Zone 1	0.0	925.8	76
388	J-125	741.03	Zone 1	7.0	917.45	76

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1043	J-410	738.15	Zone 1	7.0	916.23	77
1426	J-568	733.2	Zone 1	7.0	912.39	78
1881	J-737	737.8	Zone 1	7.0	916.15	77
1102	J-432	742	Zone 1	7.0	919.2	77
1299	J-516	741.1	Zone 1	7.0	917.66	76
437	J-146	740.95	Zone 1	7.0	917.54	76
1675	J-666	733.2	Zone 1	7.0	912.59	78
849	J-332	746.05	Zone 1	7.0	924.35	77
4278	J-773	737.7	Zone 1	7.0	916.26	77
1879	J-736	732.61	Zone 1	7.0	912.28	78
438	J-147	740.44	Zone 1	7.0	917.56	77
1013	J-397	737.29	Zone 1	7.0	916.17	77
1209	J-478	736.84	Zone 1	7.0	916.12	78
4592	J-1104	755	Zone 1	0.0	934.24	78
1197	J-471	736.51	Zone 1	7.0	916.21	78
722	J-282	745.37	Zone 1	7.0	924.35	77
850	J-333	745.36	Zone 1	7.0	924.35	77
1012	J-396	737.16	Zone 1	7.0	916.2	77
1551	J-615	738.14	Zone 1	7.0	916.71	77
338	J-95	738.97	Zone 1	0.0	916.78	77
344	J-99	738.94	Zone 1	15.0	916.78	77
1777	J-700	736.32	Zone 1	7.0	916	78
801	J-316	739.06	Zone 1	7.0	916.82	77
1552	J-616	738.02	Zone 1	7.0	916.71	77
1296	J-515	732.43	Zone 1	7.0	912.9	78
732	J-286	732.06	Zone 1	15.0	912.62	78
1519	J-603	739.63	Zone 1	7.0	917.41	77
4652	J-1110	740	<None>	0.0	917.65	77
4594	J-1105	753	Zone 1	0.0	932.43	78
1072	J-420	735.63	Zone 1	7.0	915.45	78
347	J-101	738.69	Zone 1	7.0	916.8	77
744	J-292	738.48	Zone 1	0.0	916.78	77
1465	J-583	738.51	Zone 1	7.0	917.08	77
418	J-136	731.84	Zone 1	15.0	912.54	78
1110	J-435	738.54	Zone 1	7.0	916.79	77
353	J-105	738.49	Zone 1	7.0	916.79	77
339	J-96	738.44	Zone 1	7.0	916.78	77
1284	J-509	738.31	Zone 1	7.0	916.17	77
341	J-97	738.48	Zone 1	7.0	916.79	77
982	J-388	737.32	Zone 1	7.0	916.6	78
301	J-81	738.15	Zone 1	7.0	916.78	77
1518	J-602	738.59	Zone 1	7.0	916.97	77
1021	J-401	735.53	Zone 1	7.0	916.16	78
4019	J-766	735.41	Zone 1	7.0	915.86	78
220	J-41	744.34	Zone 1	15.0	924.29	78
692	J-267	735.95	Zone 1	7.0	916.88	78
693	J-268	735.94	Zone 1	7.0	916.88	78
396	J-128	750.51	Zone 1	7.0	927.58	77
1623	J-644	738.16	Zone 1	7.0	916.81	77
883	J-346	731.23	Zone 1	7.0	912.45	78
1570	J-624	737.9	Zone 1	7.0	917.08	78
4512	J-1091	745.21	Zone 1	0.0	924.6	78
1786	J-701	737.9	Zone 1	7.0	917.1	78
315	J-87	738.18	Zone 1	15.0	916.84	77
1189	J-466	735	Zone 1	7.0	915.59	78
1930	J-755	738.15	Zone 1	7.0	916.86	77
1754	J-693	744.06	Zone 1	7.0	924.05	78
957	J-379	735.06	Zone 1	7.0	915.96	78
1793	J-703	731.07	Zone 1	7.0	912.61	79
316	J-88	737.88	Zone 1	7.0	916.84	77
800	J-315	737.82	Zone 1	7.0	916.82	77
4519	J-1093	743.57	Zone 1	0.0	923.66	78
1764	J-695	734.97	Zone 1	15.0	916.42	79
1562	J-620	736.68	Zone 1	7.0	916.6	78
745	J-293	737.43	Zone 1	7.0	916.78	78
399	J-129	756.54	Zone 1	7.0	933.58	77
405	J-131	751.84	Zone 1	7.0	929.41	77
1440	J-575	735.21	Zone 1	7.0	916.88	79
402	J-130	758.75	Zone 1	7.0	935.77	77
956	J-378	734.58	Zone 1	7.0	915.87	78
499	J-178	737.52	Zone 1	7.0	916.83	78
393	J-127	753.96	Zone 1	7.0	931.44	77
1203	J-474	732.67	Zone 1	7.0	913.13	78
1166	J-459	735.53	Zone 1	7.0	916.06	78
766	J-301	737.16	Zone 1	7.0	916.78	78
417	J-135	730.38	Zone 1	7.0	912.59	79
1345	J-534	736.92	Zone 1	7.0	916.18	78

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
983	J-389	735.55	Zone 1	7.0	916.32	78
1350	J-537	736.49	Zone 1	7.0	916.78	78
1656	J-659	759.91	Zone 1	7.0	937.34	77
1812	J-710	736.65	Zone 1	7.0	916.18	78
567	J-212	736.94	Zone 1	7.0	916.82	78
1121	J-440	729.8	Zone 1	7.0	912.37	79
1386	J-554	735.48	Zone 1	7.0	916.43	78
1365	J-544	735.52	Zone 1	7.0	916.38	78
1096	J-431	732.03	Zone 1	7.0	913.2	78
568	J-213	736.71	Zone 1	7.0	916.82	78
1869	J-731	735.5	Zone 1	7.0	916.5	78
1026	J-403	809.22	Zone 2	4.0	998.72	82
1396	J-559	735.76	Zone 1	7.0	916.67	78
1390	J-557	735.14	Zone 1	7.0	916.54	78
1733	J-687	729.64	Zone 1	7.0	911.1	79
129	J-9	731.23	Zone 1	7.0	913.13	79
259	J-61	729.44	Zone 1	7.0	912.86	79
4062	J-770	733.19	Zone 1	7.0	916.57	79
1045	J-411	730.92	Zone 1	7.0	913.12	79
1472	J-586	729	Zone 1	7.0	912.87	80
1083	J-425	735.52	Zone 1	7.0	916.82	78
720	J-281	732.9	Zone 1	7.0	916.56	79
1325	J-525	733.87	Zone 1	7.0	916.34	79
128	J-8	730.45	Zone 1	7.0	913.13	79
1425	J-567	727.97	Zone 1	7.0	912.39	80
1387	J-555	733.66	Zone 1	7.0	916.37	79
1814	J-711	731.89	Zone 1	7.0	915.72	80
1447	J-576	732.18	Zone 1	7.0	916.61	80
1364	J-543	733.42	Zone 1	0.0	916.37	79
1643	J-653	729.91	Zone 1	7.0	913.12	79
1395	J-558	733.64	Zone 1	7.0	916.51	79
258	J-60	728.06	Zone 1	7.0	912.86	80
1337	J-531	731.91	Zone 1	7.0	916.52	80
1849	J-724	729.68	Zone 1	7.0	913.2	79
1360	J-541	733.03	Zone 1	7.0	916.4	79
359	J-109	733.88	Zone 1	7.0	916.19	79
1389	J-556	732.94	Zone 1	7.0	916.44	79
1816	J-712	730.93	Zone 1	7.0	915.94	80
792	J-313	729.08	Zone 1	7.0	913.14	80
1829	J-718	729.05	Zone 1	7.0	913.12	80
268	J-66	733.52	Zone 1	15.0	916.45	79
1614	J-641	727.93	Zone 1	7.0	913.78	80
1348	J-536	862.49	Zone 3	4.0	1,054.03	83
1047	J-412	730.47	Zone 1	7.0	916.17	80
255	J-59	730.35	Zone 1	0.0	916.2	80
1361	J-542	731.85	Zone 1	7.0	916.38	80
1207	J-477	728.36	Zone 1	7.0	913.14	80
1806	J-709	732.65	Zone 1	7.0	916.16	79
1201	J-473	728.22	Zone 1	7.0	913.16	80
4603	J-1106	727.57	<None>	0.0	912.11	80
538	J-197	725.71	Zone 1	7.0	912.84	81
1338	J-532	729.5	Zone 1	7.0	916.52	81
153	J-21	727.22	Zone 1	7.0	913.12	80
1204	J-475	727.2	Zone 1	7.0	913.13	80
570	J-214	727.11	Zone 1	7.0	913.12	80
152	J-20	727.1	Zone 1	7.0	913.12	80
1644	J-654	726.91	Zone 1	7.0	913.12	81
385	J-123	725.77	Zone 1	0.0	913.51	81
602	J-226	725.03	Zone 1	7.0	912.83	81
365	J-113	725.49	Zone 1	7.0	913.78	81
537	J-196	724.53	Zone 1	7.0	912.84	81
1527	J-606	728.7	Zone 1	7.0	916.91	81
386	J-124	725.08	Zone 1	7.0	913.51	82
364	J-112	725.35	Zone 1	7.0	913.92	82
1504	J-598	728.32	Zone 1	7.0	916.89	82
249	J-56	725.78	Zone 1	7.0	913.13	81
1458	J-580	724.55	Zone 1	7.0	913.51	82
160	J-24	756	Zone 1	0.0	940	80
250	J-57	725.34	Zone 1	7.0	913.13	81
358	J-108	729.69	Zone 1	7.0	916.19	81
1232	J-489	726.81	Zone 1	7.0	916.44	82
275	J-70	724.64	Zone 1	7.0	913.12	82
1419	J-565	729.09	Zone 1	7.0	916.19	81
276	J-71	724.33	Zone 1	7.0	913.12	82
727	J-283	726.93	Zone 1	7.0	917.51	82
1850	J-725	724.03	Zone 1	7.0	913.12	82
1075	J-422	728.45	Zone 1	7.0	916.16	81

Scenario: 2023 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
4582	J-1101	725	Zone 1	0.0	913.36	81
95	J-1	723.56	Zone 1	7.0	913.12	82
1888	J-740	721.77	Zone 1	7.0	913.09	83
1225	J-486	723.27	Zone 1	7.0	913.12	82
426	J-140	723.08	Zone 1	7.0	913.12	82
143	J-14	727.62	Zone 1	7.0	916.34	82
144	J-15	727.56	Zone 1	7.0	916.28	82
441	J-149	726.26	Zone 1	7.0	918	83
1584	J-629	727.33	Zone 1	7.0	916.18	82
1716	J-681	720.47	Zone 1	7.0	910.38	82
1775	J-699	719.81	Zone 1	7.0	912.37	83
1535	J-609	720.62	Zone 1	7.0	912.99	83
1572	J-625	719.38	Zone 1	0.0	910.28	83
1895	J-744	725.99	Zone 1	7.0	916.16	82
1909	J-750	725.69	Zone 1	7.0	916.16	82
440	J-148	725.39	Zone 1	7.0	919.34	84
1603	J-638	717.29	Zone 1	7.0	909.68	83
1632	J-648	717.57	Zone 1	7.0	910.27	83
1631	J-647	717.24	Zone 1	7.0	910.28	84
1595	J-634	716.59	Zone 1	7.0	909.58	83
1074	J-421	723.86	Zone 1	7.0	916.16	83
1805	J-708	723.7	Zone 1	7.0	916.16	83
1247	J-496	723.55	Zone 1	7.0	916.17	83
841	J-328	723.19	Zone 1	7.0	916.16	83
842	J-329	723.06	Zone 1	7.0	916.16	84
1894	J-743	723.06	Zone 1	7.0	916.17	84
944	J-373	722.76	Zone 1	7.0	916.16	84
548	J-203	722.73	Zone 1	7.0	916.16	84
943	J-372	722.4	Zone 1	7.0	916.16	84
1432	J-571	715.43	Zone 1	7.0	910.12	84
1727	J-684	720.84	Zone 1	7.0	917.78	85
704	J-274	723	Zone 1	0.0	920.64	86
1433	J-572	714.74	Zone 1	7.0	910.12	85
1601	J-637	712.17	Zone 1	7.0	909.31	85
929	J-366	712.34	Zone 1	7.0	910.33	86
4580	J-1100	715	Zone 1	0.0	914.1	86
4326	J-780	708.6	Zone 1	0.0	909.5	87
390	J-126	709.87	Zone 1	7.0	913.13	88
1536	J-610	708.66	Zone 1	7.0	912.43	88
601	J-225	708.62	Zone 1	7.0	912.83	88
1590	J-631	705.33	Zone 1	7.0	909.14	88
1589	J-630	703.57	Zone 1	7.0	908.48	89
4284	J-775	703.3	Zone 1	7.0	909.22	89
928	J-365	703.38	Zone 1	7.0	910.33	90
1594	J-633	702.9	Zone 1	7.0	909.62	89
206	J-35	700.53	Zone 1	7.0	905.54	89
157	J-22	700.89	Zone 1	7.0	906.23	89
188	J-31	693.32	Zone 1	7.0	898.82	89
193	J-32	693.42	Zone 1	0.0	899.78	89
1936	J-757	690	Zone 1	789.0	894.33	88
198	J-33	690	Zone 1	7.0	894.77	89
166	J-25	690	Zone 1	7.0	895.76	89
176	J-27	692.53	Zone 1	7.0	900.99	90
171	J-26	690	Zone 1	7.0	896.76	89
203	J-34	692.77	Zone 1	7.0	902.1	91
185	J-30	693.31	Zone 1	7.0	903.23	91
179	J-28	690	Zone 1	7.0	897.79	90
182	J-29	693.61	Zone 1	7.0	904.37	91
1516	J-601	690.83	Zone 1	7.0	900	91
1515	J-600	688.56	Zone 1	7.0	900	91
1515	J-600	688.56	Zone 1	(N/A)	(N/A)	(N/A)

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
869	J-342	986.59	Zone 3	0.0	1,048.61	27
696	J-270	923.59	Zone 2	4.0	1,001.81	34
739	J-290	835.45	Zone 1	7.0	915.71	35
1740	J-689	850.25	Zone 1	7.0	930.42	35
738	J-289	832.29	Zone 1	7.0	915.71	36
530	J-193	918.74	Zone 2	4.0	1,001.66	36
664	J-255	839.88	Zone 1	7.0	920.08	35
658	J-251	960.93	Zone 3	4.0	1,048.61	38
1003	J-394	911.9	Zone 2	4.0	1,002.99	39
659	J-252	959.72	Zone 3	4.0	1,049.16	39
587	J-221	961.84	Zone 3	4.0	1,051.05	39
756	J-298	954.21	Zone 3	4.0	1,043.36	39
1729	J-685	840.28	Zone 1	7.0	929.11	38
223	J-43	946.58	Zone 3	4.0	1,035.96	39
368	J-115	943.93	Zone 3	4.0	1,035.63	40
631	J-240	942.7	Zone 3	4.0	1,036.04	40
1308	J-518	906.8	Zone 2	4.0	1,002.40	41
565	J-211	946.79	Zone 3	4.0	1,041.30	41
1477	J-589	941.57	Zone 3	4.0	1,035.63	41
1088	J-428	828.32	Zone 1	7.0	921	40
632	J-241	939.86	Zone 3	4.0	1,034.31	41
367	J-114	939.72	Zone 3	4.0	1,035.63	41
4015	J-765	953.95	Zone 3	4.0	1,052.10	42
876	J-344	949.03	Zone 3	4.0	1,047.95	43
564	J-210	940.7	Zone 3	4.0	1,038.43	42
892	J-351	934.36	Zone 3	4.0	1,033.21	43
1452	J-578	934.92	Zone 3	4.0	1,035.63	44
4394	J-1081	916	Zone 2	0.0	1,022.22	46
586	J-220	947.93	Zone 3	4.0	1,051.27	45
377	J-119	808.24	Zone 1	0.0	915	46
757	J-299	938.06	Zone 3	4.0	1,043.36	46
1592	J-632	907.34	Zone 2	4.0	1,017.38	48
4421	J-1087	912	Zone 2	0.0	1,023.13	48
453	J-155	924.05	Zone 3	4.0	1,031.00	46
446	J-151	801.5	Zone 1	0.0	915.07	49
1451	J-577	926.09	Zone 3	7.0	1,035.65	47
304	J-83	802.83	Zone 1	7.0	915.69	49
1286	J-510	816.01	Zone 1	7.0	927.7	48
820	J-321	800.91	Zone 1	7.0	915.71	50
634	J-242	800.1	Zone 1	0.0	915.7	50
324	J-91	885.9	Zone 2	4.0	1,001.11	50
526	J-191	814.99	Zone 1	7.0	927.74	49
917	J-361	939.94	Zone 3	4.0	1,053.58	49
714	J-278	800.89	Zone 1	13.0	915.93	50
1318	J-523	919.36	Zone 3	4.0	1,033.50	49
1641	J-652	916.64	Zone 3	4.0	1,030.99	49
4290	J-777	920	Zone 3	4.0	1,035.63	50
140	J-13	915.88	Zone 3	4.0	1,030.99	50
4389	J-1080	914	Zone 3	0.0	1,029.02	50
232	J-46	881.45	Zone 2	4.0	999.54	51
695	J-269	940.04	Zone 3	4.0	1,055.79	50
4416	J-1086	912	Zone 3	0.0	1,030.49	51
837	J-327	879.18	Zone 2	4.0	1,000.68	53
910	J-359	798.46	Zone 1	7.0	916.52	51
949	J-374	877.55	Zone 2	4.0	998.40	52
1340	J-533	810.3	Zone 1	7.0	931.5	52
4376	J-1077	816	Zone 1	0.0	943.02	55
540	J-198	874.09	Zone 2	4.0	999.55	54
729	J-284	811.68	Zone 1	7.0	939.02	55
149	J-18	796	Zone 1	0.0	920.3	54
4403	J-1083	806	Zone 1	0.0	936.61	57
702	J-273	803.82	Zone 1	7.0	931.5	55
529	J-192	931.71	Zone 3	4.0	1,057.84	55
4412	J-1085	808	Zone 1	0.0	941.32	58
1146	J-451	870.76	Zone 2	4.0	1,001.59	57
908	J-358	870.8	Zone 2	4.0	1,001.67	57
575	J-215	801.56	Zone 1	7.0	931.5	56
1842	J-722	792.71	Zone 1	7.0	920.35	55
836	J-326	869.54	Zone 2	4.0	1,001.34	57
789	J-312	869.47	Zone 2	4.0	1,002.10	57
4609	J-1107	782	Zone 1	34.0	915.66	58
1510	J-599	868.48	Zone 2	4.0	1,001.99	58
674	J-259	868.28	Zone 2	4.0	1,001.81	58
1037	J-408	868.58	Zone 2	4.0	1,002.40	58
229	J-44	789.88	Zone 1	0.0	920.26	56
3993	J-763	780.72	Zone 1	7.0	915.69	58
1482	J-591	901.63	Zone 3	4.0	1,033.49	57

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1646	J-655	868.44	Zone 2	4.0	1,003.27	58
961	J-380	780.05	Zone 1	7.0	915.71	59
730	J-285	802.24	Zone 1	7.0	939.02	59
4294	J-778	902.2	Zone 3	4.0	1,035.64	58
924	J-363	866.17	Zone 2	4.0	1,001.87	59
699	J-271	928.39	Zone 3	4.0	1,060.31	57
701	J-272	796.4	Zone 1	7.0	931.5	58
652	J-247	877.38	Zone 2	4.0	1,015.55	60
1860	J-727	787.1	Zone 1	0.0	920.35	58
231	J-45	781.06	ɔn-FF Junctiɔ	7.0	917.5	59
468	J-162	897.72	Zone 3	4.0	1,032.59	58
211	J-36	861.51	Zone 2	4.0	999.54	60
1157	J-455	867.66	Zone 2	4.0	1,006.56	60
895	J-352	781.23	Zone 1	7.0	916.15	58
523	J-190	791.42	Zone 1	7.0	927.61	59
150	J-19	784.82	Zone 1	7.0	920.35	59
1621	J-643	785.63	Zone 1	7.0	921.19	59
1865	J-730	785.29	Zone 1	7.0	921.19	59
487	J-173	785.26	Zone 1	7.0	921.19	59
4287	J-776	870.7	Zone 2	4.0	1,014.31	62
486	J-172	784.46	Zone 1	0.0	921.19	59
212	J-37	856.94	Zone 2	4.0	999.54	62
490	J-175	784.39	Zone 1	0.0	921.19	59
473	J-164	784.33	Zone 1	7.0	923.61	60
1332	J-529	909.15	Zone 3	4.0	1,051.27	61
489	J-174	783.98	Zone 1	7.0	921.19	59
1484	J-592	787.17	Zone 1	7.0	928.05	61
1863	J-729	783.55	Zone 1	7.0	921.19	60
1104	J-433	783.09	Zone 1	7.0	923.13	61
1156	J-454	867.34	Zone 2	4.0	1,012.18	63
546	J-202	786.99	Zone 1	7.0	929.11	61
1862	J-728	783.22	Zone 1	7.0	921.19	60
985	J-390	786.06	Zone 1	7.0	927.55	61
408	J-132	788.66	Zone 1	7.0	931.51	62
545	J-201	787.35	Zone 1	7.0	930.43	62
509	J-183	785.36	Zone 1	7.0	927.17	61
1355	J-539	784.4	Zone 1	7.0	925.89	61
1770	J-697	907.69	Zone 3	4.0	1,052.09	62
1064	J-418	789.29	Zone 1	7.0	933.75	63
4057	J-769	779.99	Zone 1	7.0	921.17	61
508	J-182	783.84	Zone 1	7.0	926.05	62
483	J-170	781.61	Zone 1	7.0	921.19	60
1620	J-642	781.52	Zone 1	7.0	921.19	60
484	J-171	781.15	Zone 1	7.0	921.19	61
920	J-362	784.76	Zone 1	7.0	928.77	62
1820	J-714	782.68	Zone 1	7.0	925.89	62
1065	J-419	787.6	Zone 1	7.0	933.75	63
988	J-391	786.1	Zone 1	7.0	933.26	64
1160	J-457	783.96	Zone 1	7.0	925.63	61
460	J-159	772.82	Zone 1	7.0	915.9	62
1380	J-552	772.41	Zone 1	7.0	915.82	62
1287	J-511	781.93	Zone 1	7.0	927.4	63
1334	J-530	782.86	Zone 1	7.0	929.42	63
253	J-58	782.32	Zone 1	7.0	925.63	62
872	J-343	771.28	Zone 1	7.0	915.85	63
1492	J-595	771.34	Zone 1	7.0	916.14	63
1159	J-456	781.84	Zone 1	0.0	925.63	62
1051	J-414	776.75	Zone 1	7.0	921.19	62
465	J-161	782.17	Zone 1	7.0	933.2	65
4000	J-764	775.86	Zone 1	7.0	921.19	63
653	J-248	861.2	Zone 2	4.0	1,015.03	67
451	J-154	917.11	Zone 3	0.0	1,067.14	65
1379	J-551	767	Zone 1	7.0	915.84	64
784	J-309	775.3	Zone 1	7.0	922.47	64
459	J-158	766.86	Zone 1	7.0	915.9	64
261	J-62	774.14	Zone 1	0.0	921.2	64
4039	J-768	773.93	Zone 1	7.0	921.19	64
1491	J-594	766.89	Zone 1	7.0	916.27	65
1771	J-698	899.31	Zone 3	4.0	1,052.09	66
262	J-63	773.85	Zone 1	7.0	921.2	64
1025	J-402	846.25	Zone 2	4.0	999.54	66
1415	J-564	775	Zone 1	7.0	923.3	64
753	J-296	765.42	Zone 1	7.0	915.81	65
370	J-116	772.61	Zone 1	0.0	921.2	64
371	J-117	772.41	Zone 1	7.0	921.2	64
511	J-184	765.02	Zone 1	7.0	916.14	65
1086	J-427	772.72	Zone 1	7.0	922.14	65

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
512	J-185	765.23	Zone 1	7.0	916.51	65
592	J-222	771.92	Zone 1	7.0	921.19	65
497	J-177	771.9	Zone 1	7.0	921.21	65
1818	J-713	771.68	Zone 1	7.0	921.19	65
853	J-335	772.29	Zone 1	7.0	922.14	65
1184	J-464	772.09	Zone 1	7.0	922.14	65
1085	J-426	771.74	Zone 1	7.0	922.14	65
852	J-334	771.54	Zone 1	7.0	922.14	65
477	J-166	772.69	Zone 1	7.0	925.62	66
1141	J-448	762.86	Zone 1	7.0	915.36	66
3881	J-762	842.15	Zone 2	0.0	999.54	68
1040	J-409	770.05	Zone 1	7.0	922.27	66
1148	J-452	768.97	Zone 1	7.0	921.2	66
543	J-200	769.02	Zone 1	7.0	921.31	66
862	J-339	843.43	Zone 2	4.0	1,001.79	69
855	J-336	761.44	Zone 1	13.0	915.88	67
1625	J-645	769.82	Zone 1	13.0	922.77	66
1149	J-453	768.5	Zone 1	7.0	921.2	66
1144	J-450	761.01	Zone 1	7.0	915.36	67
863	J-340	842.65	Zone 2	4.0	1,001.71	69
1883	J-738	768.15	Zone 1	7.0	921.28	66
542	J-199	768	Zone 1	7.0	921.31	66
1744	J-690	767.68	Zone 1	7.0	921.26	66
1291	J-513	767.57	Zone 1	13.0	921.2	66
4071	J-772	768.5	Zone 1	7.0	922.47	67
617	J-234	769.11	Zone 1	7.0	923.3	67
1597	J-635	768.24	Zone 1	7.0	924.48	68
1890	J-741	767.33	Zone 1	7.0	921.32	67
1353	J-538	768.07	Zone 1	7.0	922.41	67
662	J-254	766.81	Zone 1	7.0	921.27	67
661	J-253	766.74	Zone 1	7.0	921.27	67
246	J-55	766.68	Zone 1	0.0	921.27	67
778	J-307	766.21	Zone 1	7.0	921.26	67
616	J-233	767.73	Zone 1	7.0	923.3	67
273	J-69	766.03	Zone 1	7.0	921.27	67
1138	J-446	758.18	Zone 1	7.0	915.36	68
1187	J-465	765.11	Zone 1	7.0	921.22	68
940	J-370	765.04	Zone 1	7.0	921.28	68
1608	J-640	757.4	Zone 1	7.0	915.81	69
1053	J-415	764.75	Zone 1	13.0	921.23	68
777	J-306	764.63	Zone 1	7.0	921.27	68
335	J-94	764.81	Zone 1	7.0	921.67	68
264	J-64	818.53	Zone 2	4.0	966.84	64
134	J-11	764.9	Zone 1	7.0	922.09	68
135	J-12	764.86	Zone 1	0.0	922.09	68
214	J-38	838.58	Zone 2	0.0	1,001.66	71
478	J-167	765.97	Zone 1	7.0	925.2	69
972	J-385	764.65	Zone 1	7.0	922.09	68
234	J-47	764.01	Zone 1	7.0	921.27	68
1330	J-528	765.61	Zone 1	7.0	923.31	68
4407	J-1084	808	Zone 2	0.0	952.85	63
971	J-384	764.39	Zone 1	7.0	922.09	68
1049	J-413	763.79	Zone 1	7.0	921.27	68
941	J-371	763.73	Zone 1	7.0	921.28	68
598	J-223	763.68	Zone 1	7.0	921.24	68
787	J-311	764.66	Zone 1	7.0	922.5	68
235	J-48	763.68	Zone 1	7.0	921.27	68
599	J-224	763.62	Zone 1	7.0	921.24	68
847	J-331	764.22	Zone 1	7.0	922.09	68
1143	J-449	756.17	Zone 1	7.0	915.36	69
754	J-297	755.98	Zone 1	7.0	915.81	69
1919	J-752	763.36	Zone 1	7.0	921.36	68
613	J-231	764.7	Zone 1	7.0	923.31	69
243	J-53	763.46	Zone 1	7.0	922.09	69
1301	J-517	762.7	Zone 1	7.0	921.29	69
1918	J-751	762.79	Zone 1	7.0	921.36	69
4549	J-1096	755	Zone 1	0.0	915.83	70
1710	J-679	762.24	Zone 1	7.0	921.45	69
362	J-111	762.16	Zone 1	7.0	921.31	69
614	J-232	763.81	Zone 1	7.0	923.31	69
786	J-310	763.11	Zone 1	7.0	922.5	69
4067	J-771	763.04	Zone 1	7.0	922.47	69
1713	J-680	762.05	Zone 1	7.0	921.36	69
1219	J-483	763.84	Zone 1	7.0	925.81	70
443	J-150	761.97	Zone 1	7.0	921.4	69
712	J-277	762.28	Zone 1	7.0	921.86	69
608	J-230	763.34	Zone 1	7.0	923.31	69

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1230	J-488	761.79	Zone 1	7.0	921.58	69
1238	J-492	761.54	Zone 1	7.0	921.29	69
1140	J-447	754.27	Zone 1	7.0	915.36	70
1374	J-549	761.52	Zone 1	7.0	921.3	69
1169	J-460	761.47	Zone 1	7.0	921.3	69
361	J-110	761.45	Zone 1	7.0	921.31	69
901	J-354	761.42	Zone 1	7.0	921.28	69
783	J-308	761.91	Zone 1	7.0	922.48	69
428	J-141	761.1	Zone 1	7.0	921.67	69
517	J-187	831.17	Zone 2	4.0	994.45	71
429	J-142	761.01	Zone 1	13.0	921.73	70
520	J-188	761.52	Zone 1	7.0	922.53	70
1540	J-611	753.15	Zone 1	7.0	916.07	70
379	J-120	760.3	Zone 1	7.0	921.29	70
711	J-276	760.57	Zone 1	7.0	921.86	70
1758	J-694	760.57	Zone 1	7.0	921.94	70
794	J-314	760.1	Zone 1	7.0	921.33	70
707	J-275	761.13	Zone 1	7.0	922.65	70
380	J-121	760	Zone 1	7.0	921.29	70
1439	J-574	757.48	Zone 1	7.0	920.24	70
980	J-387	759.77	Zone 1	7.0	921.3	70
1289	J-512	760.78	Zone 1	7.0	922.56	70
993	J-393	763.13	Zone 1	7.0	925.64	70
4323	J-779	759.7	Zone 1	0.0	921.47	70
373	J-118	752.16	Zone 1	7.0	916.06	71
1886	J-739	759.83	Zone 1	7.0	922.09	70
1877	J-735	759.5	Zone 1	7.0	921.51	70
554	J-206	751.96	Zone 1	7.0	915.37	71
1547	J-614	759.77	Zone 1	7.0	922.1	70
1373	J-548	759.17	Zone 1	7.0	921.3	70
926	J-364	751.82	Zone 1	7.0	915.9	71
1019	J-400	759.3	Zone 1	7.0	921.43	70
607	J-229	760.86	Zone 1	7.0	923.37	70
648	J-245	751.96	Zone 1	7.0	916.05	71
502	J-179	759.11	Zone 1	7.0	921.57	70
553	J-205	751.67	Zone 1	7.0	915.37	71
1803	J-707	758.89	Zone 1	7.0	921.4	70
937	J-369	758.89	Zone 1	7.0	921.45	70
382	J-122	758.81	Zone 1	7.0	921.4	70
1017	J-399	758.57	Zone 1	7.0	921.31	70
494	J-176	751.2	Zone 1	7.0	916.05	71
1367	J-545	758.23	Zone 1	7.0	921.31	71
687	J-265	751.07	Zone 1	7.0	915.53	71
1113	J-436	758.21	Zone 1	7.0	921.41	71
521	J-189	758.99	Zone 1	7.0	922.57	71
1678	J-668	761.44	Zone 1	7.0	925.64	71
503	J-180	758.02	Zone 1	7.0	921.57	71
1274	J-505	757.96	Zone 1	7.0	921.39	71
1174	J-462	757.85	Zone 1	7.0	921.31	71
1016	J-398	757.85	Zone 1	7.0	921.32	71
412	J-133	759.08	Zone 1	7.0	922.97	71
1282	J-508	759.33	Zone 1	7.0	923.31	71
215	J-39	831.81	Zone 2	4.0	1,001.66	73
1114	J-437	757.45	Zone 1	7.0	921.44	71
1462	J-581	757.45	Zone 1	7.0	921.42	71
667	J-257	757.17	Zone 1	7.0	921.38	71
666	J-256	757.17	Zone 1	7.0	921.4	71
903	J-355	758.02	Zone 1	7.0	922.59	71
769	J-302	758.4	Zone 1	7.0	923.06	71
1463	J-582	756.91	Zone 1	7.0	921.42	71
954	J-377	756.79	Zone 1	7.0	921.39	71
1090	J-429	756.71	Zone 1	7.0	921.38	71
1164	J-458	756.68	Zone 1	7.0	921.57	71
1698	J-676	758.21	Zone 1	7.0	925.8	73
1667	J-663	756.19	Zone 1	13.0	921.52	72
1132	J-443	756.97	Zone 1	7.0	922.45	72
296	J-80	755.54	Zone 1	7.0	920.54	71
319	J-89	757.82	Zone 1	7.0	923.72	72
1316	J-522	756.18	Zone 1	7.0	923.89	73
1555	J-617	756.03	Zone 1	7.0	922	72
672	J-258	755.31	Zone 1	7.0	921.7	72
1455	J-579	756.18	Zone 1	7.0	922.83	72
4495	J-1088	762	Zone 1	707.0	928.94	72
1679	J-669	756.84	Zone 1	7.0	924.01	72
1061	J-417	754.53	Zone 1	7.0	921.39	72
1725	J-683	747.01	Zone 1	7.0	915.83	73
1672	J-665	754.74	Zone 1	7.0	922.02	72

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1383	J-553	754.43	Zone 1	7.0	921.38	72
1172	J-461	747.16	Zone 1	7.0	916.05	73
4589	J-1103	762	Zone 1	0.0	929.69	73
933	J-368	753.24	Zone 1	7.0	921.47	73
551	J-204	754.93	Zone 1	7.0	925.02	74
1474	J-587	753.61	Zone 1	7.0	922.01	73
806	J-317	754.76	Zone 1	7.0	925.07	74
890	J-350	755.15	Zone 1	7.0	924.16	73
4398	J-1082	806	Zone 2	0.0	964.04	68
423	J-139	752.35	Zone 1	7.0	921.46	73
1327	J-526	755.68	Zone 1	7.0	925.24	73
619	J-235	745.34	Zone 1	7.0	916.05	74
480	J-168	745.32	Zone 1	13.0	916.05	74
4372	J-1076	816	Zone 2	0.0	984.23	73
951	J-375	756.43	Zone 1	7.0	926.1	73
1659	J-661	752.25	Zone 1	7.0	921.46	73
1181	J-463	753.87	Zone 1	7.0	923.28	73
772	J-303	755.8	Zone 1	7.0	925.76	74
1035	J-407	748.96	Zone 1	7.0	919.78	74
735	J-288	751.83	Zone 1	7.0	921.68	73
1824	J-716	752.07	Zone 1	7.0	921.56	73
1137	J-445	744.52	Zone 1	7.0	915.36	74
1564	J-621	752.91	Zone 1	7.0	923.33	74
1557	J-618	744.55	Zone 1	7.0	916.04	74
583	J-219	751.27	Zone 1	7.0	921.46	74
1899	J-745	757.61	Zone 1	713.0	917.34	69
1220	J-484	753.27	Zone 1	7.0	925.79	75
1685	J-672	752.59	Zone 1	7.0	922.85	74
1522	J-604	751.92	Zone 1	7.0	922.01	74
1580	J-627	752.91	Zone 1	7.0	923.29	74
1658	J-660	750.96	Zone 1	7.0	921.56	74
1854	J-726	745.59	Zone 1	7.0	916.22	74
1823	J-715	750.94	Zone 1	7.0	921.46	74
1582	J-628	744.01	Zone 1	7.0	915.68	74
1495	J-596	754.51	Zone 1	7.0	925.82	74
1634	J-649	750.61	Zone 1	7.0	921.77	74
686	J-264	743.51	Zone 1	13.0	915.54	74
1654	J-658	750.08	Zone 1	7.0	921.55	74
1663	J-662	750.29	Zone 1	7.0	921.45	74
557	J-208	743.18	Zone 1	7.0	915.37	74
4586	J-1102	758	Zone 1	0.0	929.36	74
952	J-376	754.29	Zone 1	7.0	926.1	74
322	J-90	751.86	Zone 1	7.0	923.28	74
1328	J-527	752.98	Zone 1	7.0	925.08	74
1837	J-720	750.86	Zone 1	7.0	922.06	74
968	J-383	750.27	Zone 1	7.0	921.63	74
690	J-266	749.67	Zone 1	7.0	921.76	74
1413	J-563	751.6	Zone 1	7.0	923.27	74
1801	J-706	751.26	Zone 1	7.0	923.33	74
1475	J-588	750.61	Zone 1	7.0	922.02	74
749	J-294	750.5	Zone 1	7.0	922.02	74
1429	J-569	750.8	Zone 1	7.0	922.26	74
1279	J-507	749.04	Zone 1	7.0	921.43	75
1347	J-535	878.6	Zone 3	4.0	1,055.21	76
556	J-207	742.23	Zone 1	7.0	915.37	75
506	J-181	749.23	Zone 1	7.0	921.45	75
1322	J-524	749.1	Zone 1	7.0	921.98	75
1228	J-487	750.01	Zone 1	7.0	922.02	74
906	J-357	751.21	Zone 1	7.0	925.01	75
1653	J-657	748.85	Zone 1	7.0	921.62	75
308	J-85	741.95	Zone 1	7.0	915.38	75
990	J-392	745.86	Zone 1	7.0	919.21	75
1892	J-742	744.63	Zone 1	7.0	917.71	75
963	J-381	745.75	Zone 1	7.0	919.21	75
1605	J-639	880.3	Zone 3	4.0	1,057.29	77
905	J-356	750.58	Zone 1	7.0	925.01	75
1795	J-704	750.49	Zone 1	7.0	924.14	75
1872	J-733	753.59	Zone 1	13.0	925.79	75
217	J-40	744.91	Zone 1	7.0	918.4	75
1489	J-593	751.49	Zone 1	7.0	925.08	75
750	J-295	749.25	Zone 1	7.0	922.02	75
1261	J-501	747.99	Zone 1	7.0	921.58	75
655	J-249	741.28	Zone 1	13.0	916.01	76
146	J-16	743.33	Zone 1	7.0	917.06	75
420	J-137	744.79	Zone 1	7.0	919.53	76
1215	J-481	747.33	Zone 1	7.0	921.74	75
812	J-320	748.63	Zone 1	7.0	922.01	75

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1532	J-608	746.67	Zone 1	7.0	921.49	76
1028	J-404	747.66	Zone 1	7.0	921.44	75
1681	J-670	748.23	Zone 1	7.0	921.88	75
97	J-2	743.39	Zone 1	7.0	917.62	75
1006	J-395	876.76	Zone 3	4.0	1,055.21	77
1826	J-717	752.51	Zone 1	7.0	926.82	75
1702	J-677	747.92	Zone 1	7.0	921.76	75
977	J-386	748.31	Zone 1	7.0	922.02	75
1214	J-480	746.73	Zone 1	7.0	921.74	76
475	J-165	749.2	Zone 1	7.0	924.17	76
1404	J-561	746.62	Zone 1	7.0	921.35	76
307	J-84	740.12	Zone 1	7.0	915.38	76
329	J-92	748.97	Zone 1	0.0	924.17	76
1033	J-406	744.2	Zone 1	7.0	920.37	76
147	J-17	742.27	Zone 1	7.0	917.06	76
281	J-74	746.13	Zone 1	7.0	921.69	76
434	J-144	748.64	Zone 1	7.0	924.17	76
1311	J-519	748.61	Zone 1	7.0	924.14	76
278	J-72	753	Zone 1	7.0	926.81	75
1430	J-570	750.84	Zone 1	7.0	924.87	75
865	J-341	745.68	Zone 1	7.0	921.57	76
435	J-145	748.27	Zone 1	7.0	924.02	76
1276	J-506	749.63	Zone 1	7.0	925.08	76
1244	J-494	748.28	Zone 1	7.0	924.13	76
1259	J-500	745.69	Zone 1	7.0	921.43	76
1127	J-442	745.34	Zone 1	7.0	921.51	76
1720	J-682	745.34	Zone 1	7.0	920.95	76
1558	J-619	739.31	Zone 1	7.0	915.83	76
1217	J-482	745.04	Zone 1	7.0	921.49	76
1124	J-441	747	Zone 1	7.0	922.13	76
421	J-138	742.68	Zone 1	7.0	919.3	76
1357	J-540	745.36	Zone 1	7.0	921.52	76
1924	J-753	750.93	Zone 1	0.0	925.58	76
432	J-143	747.73	Zone 1	7.0	924.07	76
1370	J-547	752.56	Zone 1	7.0	927.09	76
1873	J-734	752.51	Zone 1	7.0	927.09	76
656	J-250	738.9	Zone 1	7.0	916.01	77
885	J-347	746.86	Zone 1	7.0	922.05	76
1906	J-749	750.88	Zone 1	7.0	925.81	76
1269	J-504	744.7	Zone 1	7.0	921.51	76
1789	J-702	738.61	Zone 1	7.0	915.37	76
1263	J-502	747.28	Zone 1	7.0	923.97	76
4499	J-1090	753.1	Zone 1	0.0	929.06	76
4022	J-767	749.21	Zone 1	7.0	925.81	76
1398	J-560	746.27	Zone 1	7.0	922.02	76
1234	J-490	744.25	Zone 1	7.0	921.44	77
1683	J-671	746.14	Zone 1	7.0	922.02	76
3865	J-761	750.48	Zone 1	7.0	925.81	76
1313	J-520	745.18	Zone 1	13.0	922.95	77
964	J-382	742.2	Zone 1	7.0	919.22	77
117	J-4	746.2	Zone 1	20.0	922.02	76
643	J-244	746.11	Zone 1	7.0	922.2	76
1245	J-495	746.97	Zone 1	7.0	924.26	77
1423	J-566	750.24	Zone 1	7.0	925.73	76
1751	J-691	749.09	Zone 1	7.0	926.18	77
678	J-261	743.46	Zone 1	7.0	921.45	77
1265	J-503	743.4	Zone 1	7.0	921.31	77
1435	J-573	743.45	Zone 1	7.0	921.28	77
1200	J-472	739.82	Zone 1	7.0	917.05	77
810	J-319	741.63	Zone 1	7.0	919.9	77
1116	J-438	743.35	Zone 1	7.0	921.31	77
1134	J-444	743.4	Zone 1	7.0	921.18	77
677	J-260	743.26	Zone 1	7.0	921.52	77
1636	J-650	742.41	Zone 1	7.0	920.38	77
680	J-262	748.64	Zone 1	7.0	925.06	76
829	J-324	743.86	Zone 1	7.0	920.54	76
809	J-318	741.27	Zone 1	7.0	920.02	77
626	J-237	741.91	Zone 1	7.0	920.6	77
1119	J-439	741.13	Zone 1	7.0	919.28	77
775	J-305	746.08	Zone 1	7.0	925.01	77
448	J-152	742.09	Zone 1	13.0	920.34	77
683	J-263	747.35	Zone 1	7.0	924.26	77
310	J-86	748.64	Zone 1	7.0	926.93	77
888	J-349	740.86	Zone 1	7.0	919.82	77
1501	J-597	742.81	Zone 1	7.0	921.16	77
1369	J-546	750.83	Zone 1	7.0	927.66	77
1835	J-719	743.3	Zone 1	7.0	921.23	77

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1223	J-485	742.08	Zone 1	7.0	921.15	77
742	J-291	742.08	Zone 1	0.0	921.16	77
859	J-337	744.11	Zone 1	7.0	921.89	77
1692	J-673	745.36	Zone 1	7.0	924.61	78
886	J-348	744.45	Zone 1	7.0	922.05	77
1376	J-550	741.43	Zone 1	7.0	920.98	78
639	J-243	745.93	Zone 1	7.0	923.35	77
288	J-76	741.78	Zone 1	0.0	921.11	78
897	J-353	816.01	Zone 2	4.0	999.54	79
287	J-75	741.76	Zone 1	0.0	921.11	78
878	J-345	742.41	Zone 1	7.0	920.96	77
860	J-338	743.9	Zone 1	7.0	921.95	77
1195	J-470	742.74	Zone 1	7.0	922.49	78
1077	J-423	741.43	Zone 1	7.0	920.56	78
625	J-236	740.77	Zone 1	7.0	920.77	78
1192	J-468	740.65	Zone 1	7.0	920.59	78
931	J-367	745	Zone 1	0.0	924.58	78
1637	J-651	740.85	Zone 1	7.0	920.34	78
605	J-228	741.76	Zone 1	7.0	920.91	78
291	J-78	743.73	Zone 1	7.0	922.11	77
1905	J-748	743.84	Zone 1	13.0	922.21	77
764	J-300	740.77	Zone 1	7.0	921	78
1191	J-467	740.46	Zone 1	7.0	920.57	78
581	J-218	743.58	Zone 1	7.0	922.36	77
1901	J-746	737.77	Zone 1	7.0	917.01	78
1524	J-605	740.44	Zone 1	7.0	920.32	78
290	J-77	743.59	Zone 1	7.0	922.09	77
1251	J-498	740.77	Zone 1	7.0	921.09	78
1731	J-686	743.4	Zone 1	7.0	922.01	77
1236	J-491	740.25	Zone 1	7.0	920.49	78
1738	J-688	743.07	Zone 1	7.0	922.09	77
4281	J-774	740.2	Zone 1	7.0	920.18	78
774	J-304	744.21	Zone 1	7.0	925.07	78
578	J-216	741.88	Zone 1	7.0	920.54	77
514	J-186	743.31	Zone 1	7.0	922.48	78
604	J-227	741.44	Zone 1	7.0	920.96	78
1629	J-646	744.05	Zone 1	7.0	925.78	79
159	J-23	765.71	Zone 1	7.0	942.44	76
240	J-51	742.71	Zone 1	7.0	921.75	77
1194	J-469	742.74	Zone 1	7.0	923.9	78
831	J-325	742.74	Zone 1	7.0	924.07	78
629	J-239	739.19	Zone 1	7.0	919.58	78
237	J-49	742.74	Zone 1	7.0	924.18	79
238	J-50	742.74	Zone 1	7.0	924.19	79
1697	J-675	743.72	Zone 1	7.0	925.78	79
1466	J-584	741.42	Zone 1	7.0	921.19	78
1845	J-723	736.99	Zone 1	7.0	917.21	78
1870	J-732	740.93	Zone 1	7.0	920.99	78
579	J-217	741.18	Zone 1	7.0	920.54	78
241	J-52	742.24	Zone 1	7.0	921.76	78
414	J-134	747.43	Zone 1	7.0	928.14	78
1479	J-590	741.23	Zone 1	7.0	921.37	78
1206	J-476	736.55	Zone 1	7.0	917.03	78
270	J-67	742.03	Zone 1	13.0	921.8	78
1693	J-674	743.45	Zone 1	7.0	925.04	79
1944	J-759	743.2	Zone 1	13.0	925.78	79
1648	J-656	738.56	Zone 1	7.0	919.82	78
1676	J-667	734.22	Zone 1	7.0	915.73	79
1210	J-479	738.51	Zone 1	7.0	919.75	78
1941	J-758	743.1	Zone 1	13.0	925.78	79
1568	J-623	738.48	Zone 1	7.0	919.83	78
628	J-238	738.42	Zone 1	7.0	919.58	78
3845	J-760	750.61	Zone 1	13.0	929.99	78
1544	J-612	740.14	Zone 1	7.0	920.83	78
1903	J-747	742.95	Zone 1	7.0	924.93	79
1030	J-405	738.8	Zone 1	7.0	920	78
1567	J-622	738.3	Zone 1	7.0	919.83	79
1840	J-721	738.2	Zone 1	7.0	919.83	79
1708	J-678	733.6	Zone 1	7.0	916.06	79
1752	J-692	747	Zone 1	0.0	928.49	79
1471	J-585	734.01	Zone 1	7.0	915.94	79
4515	J-1092	747.54	Zone 1	0.0	928.64	78
1925	J-754	750.61	Zone 1	7.0	930.51	78
131	J-10	740.12	Zone 1	7.0	920.54	78
1545	J-613	739.58	Zone 1	7.0	920.87	78
1932	J-756	750.61	Zone 1	0.0	930.62	78
388	J-125	741.03	Zone 1	7.0	921.74	78

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1043	J-410	738.15	Zone 1	7.0	920	79
1426	J-568	733.2	Zone 1	7.0	915.51	79
1881	J-737	737.8	Zone 1	7.0	919.84	79
1102	J-432	742	Zone 1	7.0	923.28	78
1299	J-516	741.1	Zone 1	7.0	921.96	78
437	J-146	740.95	Zone 1	7.0	921.84	78
1675	J-666	733.2	Zone 1	7.0	915.68	79
849	J-332	746.05	Zone 1	7.0	928.13	79
4278	J-773	737.7	Zone 1	7.0	919.94	79
1879	J-736	732.61	Zone 1	7.0	915.42	79
438	J-147	740.44	Zone 1	7.0	921.86	78
1013	J-397	737.29	Zone 1	7.0	919.9	79
1209	J-478	736.84	Zone 1	7.0	919.75	79
4592	J-1104	755	Zone 1	0.0	937.99	79
1197	J-471	736.51	Zone 1	7.0	919.69	79
722	J-282	745.37	Zone 1	7.0	928.12	79
850	J-333	745.36	Zone 1	7.0	928.13	79
1012	J-396	737.16	Zone 1	7.0	919.96	79
1551	J-615	738.14	Zone 1	7.0	920.67	79
338	J-95	738.97	Zone 1	0.0	920.97	79
344	J-99	738.94	Zone 1	13.0	920.96	79
1777	J-700	736.32	Zone 1	7.0	919.59	79
801	J-316	739.06	Zone 1	7.0	921.06	79
1552	J-616	738.02	Zone 1	7.0	920.68	79
1296	J-515	732.43	Zone 1	7.0	915.97	79
732	J-286	732.06	Zone 1	13.0	915.7	79
1519	J-603	739.63	Zone 1	7.0	921.7	79
4652	J-1110	740	<None>	0.0	921.99	79
4594	J-1105	753	Zone 1	0.0	936.27	79
1072	J-420	735.63	Zone 1	7.0	919.08	79
347	J-101	738.69	Zone 1	7.0	921.01	79
744	J-292	738.48	Zone 1	0.0	920.93	79
1465	J-583	738.51	Zone 1	7.0	921.17	79
418	J-136	731.84	Zone 1	13.0	915.64	80
1110	J-435	738.54	Zone 1	7.0	920.98	79
353	J-105	738.49	Zone 1	7.0	920.98	79
339	J-96	738.44	Zone 1	7.0	920.97	79
1284	J-509	738.31	Zone 1	7.0	920.54	79
341	J-97	738.48	Zone 1	7.0	920.99	79
982	J-388	737.32	Zone 1	7.0	920.55	79
301	J-81	738.15	Zone 1	7.0	920.93	79
1518	J-602	738.59	Zone 1	7.0	921.23	79
1021	J-401	735.53	Zone 1	7.0	919.65	80
4019	J-766	735.41	Zone 1	7.0	919.46	80
220	J-41	744.34	Zone 1	13.0	928.1	80
692	J-267	735.95	Zone 1	7.0	920.24	80
693	J-268	735.94	Zone 1	7.0	920.24	80
396	J-128	750.51	Zone 1	7.0	932.49	79
1623	J-644	738.16	Zone 1	7.0	921.04	79
883	J-346	731.23	Zone 1	7.0	915.56	80
1570	J-624	737.9	Zone 1	7.0	921.16	79
4512	J-1091	745.21	Zone 1	0.0	928.7	79
1786	J-701	737.9	Zone 1	7.0	921.18	79
315	J-87	738.18	Zone 1	13.0	921.08	79
1189	J-466	735	Zone 1	7.0	919.22	80
1930	J-755	738.15	Zone 1	7.0	921.11	79
1754	J-693	744.06	Zone 1	7.0	927.99	80
957	J-379	735.06	Zone 1	7.0	919.51	80
1793	J-703	731.07	Zone 1	7.0	915.69	80
316	J-88	737.88	Zone 1	7.0	921.08	79
800	J-315	737.82	Zone 1	7.0	921.06	79
4519	J-1093	743.57	Zone 1	0.0	927.63	80
1764	J-695	734.97	Zone 1	13.0	919.77	80
1562	J-620	736.68	Zone 1	7.0	920.57	80
745	J-293	737.43	Zone 1	7.0	920.93	79
399	J-129	756.54	Zone 1	7.0	938.76	79
405	J-131	751.84	Zone 1	7.0	934.41	79
1440	J-575	735.21	Zone 1	7.0	920.23	80
402	J-130	758.75	Zone 1	7.0	941.04	79
956	J-378	734.58	Zone 1	7.0	919.46	80
499	J-178	737.52	Zone 1	7.0	921.07	79
393	J-127	753.96	Zone 1	7.0	936.53	79
1203	J-474	732.67	Zone 1	7.0	917.02	80
1166	J-459	735.53	Zone 1	7.0	919.96	80
766	J-301	737.16	Zone 1	7.0	920.97	80
417	J-135	730.38	Zone 1	7.0	915.68	80
1345	J-534	736.92	Zone 1	7.0	920.55	79

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
983	J-389	735.55	Zone 1	7.0	920.19	80
1350	J-537	736.49	Zone 1	7.0	920.87	80
1656	J-659	759.91	Zone 1	7.0	942.67	79
1812	J-710	736.65	Zone 1	7.0	920.54	80
567	J-212	736.94	Zone 1	7.0	921.06	80
1121	J-440	729.8	Zone 1	7.0	915.49	80
1386	J-554	735.48	Zone 1	7.0	920.38	80
1365	J-544	735.52	Zone 1	7.0	920.36	80
1096	J-431	732.03	Zone 1	7.0	917.09	80
568	J-213	736.71	Zone 1	7.0	921.06	80
1869	J-731	735.5	Zone 1	7.0	920.48	80
1026	J-403	809.22	Zone 2	4.0	999.54	82
1396	J-559	735.76	Zone 1	7.0	920.73	80
1390	J-557	735.14	Zone 1	7.0	920.54	80
1733	J-687	729.64	Zone 1	7.0	915.08	80
129	J-9	731.23	Zone 1	7.0	917.02	80
259	J-61	729.44	Zone 1	7.0	915.96	81
4062	J-770	733.19	Zone 1	7.0	919.95	81
1045	J-411	730.92	Zone 1	7.0	917.02	81
1472	J-586	729	Zone 1	7.0	915.94	81
1083	J-425	735.52	Zone 1	7.0	921.05	80
720	J-281	732.9	Zone 1	7.0	919.95	81
1325	J-525	733.87	Zone 1	7.0	920.3	81
128	J-8	730.45	Zone 1	7.0	917.02	81
1425	J-567	727.97	Zone 1	7.0	915.52	81
1387	J-555	733.66	Zone 1	7.0	920.35	81
1814	J-711	731.89	Zone 1	7.0	919.31	81
1447	J-576	732.18	Zone 1	7.0	920	81
1364	J-543	733.42	Zone 1	0.0	920.36	81
1643	J-653	729.91	Zone 1	7.0	917.01	81
1395	J-558	733.64	Zone 1	7.0	920.53	81
258	J-60	728.06	Zone 1	7.0	915.96	81
1337	J-531	731.91	Zone 1	7.0	919.94	81
1849	J-724	729.68	Zone 1	7.0	917.09	81
1360	J-541	733.03	Zone 1	7.0	920.39	81
359	J-109	733.88	Zone 1	7.0	920.55	81
1389	J-556	732.94	Zone 1	7.0	920.45	81
1816	J-712	730.93	Zone 1	7.0	919.48	82
792	J-313	729.08	Zone 1	7.0	917.03	81
1829	J-718	729.05	Zone 1	7.0	917.01	81
268	J-66	733.52	Zone 1	13.0	920.77	81
1614	J-641	727.93	Zone 1	7.0	916.9	82
1348	J-536	862.49	Zone 3	4.0	1,055.21	83
1047	J-412	730.47	Zone 1	7.0	919.66	82
255	J-59	730.35	Zone 1	0.0	919.68	82
1361	J-542	731.85	Zone 1	7.0	920.37	82
1207	J-477	728.36	Zone 1	7.0	917.03	82
1806	J-709	732.65	Zone 1	7.0	920.53	81
1201	J-473	728.22	Zone 1	7.0	917.05	82
4603	J-1106	727.57	<None>	0.0	916.17	82
538	J-197	725.71	Zone 1	7.0	915.96	82
1338	J-532	729.5	Zone 1	7.0	919.93	82
153	J-21	727.22	Zone 1	7.0	917.01	82
1204	J-475	727.2	Zone 1	7.0	917.02	82
570	J-214	727.11	Zone 1	7.0	917.01	82
152	J-20	727.1	Zone 1	7.0	917.01	82
1644	J-654	726.91	Zone 1	7.0	917.01	82
385	J-123	725.77	Zone 1	0.0	916.66	83
602	J-226	725.03	Zone 1	7.0	915.96	83
365	J-113	725.49	Zone 1	7.0	916.9	83
537	J-196	724.53	Zone 1	7.0	915.96	83
1527	J-606	728.7	Zone 1	7.0	920.26	83
386	J-124	725.08	Zone 1	7.0	916.66	83
364	J-112	725.35	Zone 1	7.0	917.02	83
1504	J-598	728.32	Zone 1	7.0	920.24	83
249	J-56	725.78	Zone 1	7.0	917.02	83
1458	J-580	724.55	Zone 1	7.0	916.66	83
160	J-24	756	Zone 1	0.0	945.43	82
250	J-57	725.34	Zone 1	7.0	917.02	83
358	J-108	729.69	Zone 1	7.0	920.56	83
1232	J-489	726.81	Zone 1	7.0	919.77	83
275	J-70	724.64	Zone 1	7.0	917.01	83
1419	J-565	729.09	Zone 1	7.0	920.55	83
276	J-71	724.33	Zone 1	7.0	917.01	83
727	J-283	726.93	Zone 1	7.0	920.77	84
1850	J-725	724.03	Zone 1	7.0	917.01	83
1075	J-422	728.45	Zone 1	7.0	920.53	83

Scenario: 2043 MDD + Fire Flow

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
4582	J-1101	725	Zone 1	0.0	917.51	83
95	J-1	723.56	Zone 1	7.0	917.01	84
1888	J-740	721.77	Zone 1	7.0	916.11	84
1225	J-486	723.27	Zone 1	7.0	917.01	84
426	J-140	723.08	Zone 1	7.0	917.01	84
143	J-14	727.62	Zone 1	7.0	920.68	84
144	J-15	727.56	Zone 1	7.0	920.63	84
441	J-149	726.26	Zone 1	7.0	921.19	84
1584	J-629	727.33	Zone 1	7.0	920.55	84
1716	J-681	720.47	Zone 1	7.0	914.39	84
1775	J-699	719.81	Zone 1	7.0	915.49	85
1535	J-609	720.62	Zone 1	7.0	916.18	85
1572	J-625	719.38	Zone 1	0.0	914.29	84
1895	J-744	725.99	Zone 1	7.0	920.53	84
1909	J-750	725.69	Zone 1	7.0	920.53	84
440	J-148	725.39	Zone 1	7.0	922.5	85
1603	J-638	717.29	Zone 1	7.0	913.71	85
1632	J-648	717.57	Zone 1	7.0	914.29	85
1631	J-647	717.24	Zone 1	7.0	914.29	85
1595	J-634	716.59	Zone 1	7.0	913.6	85
1074	J-421	723.86	Zone 1	7.0	920.53	85
1805	J-708	723.7	Zone 1	7.0	920.53	85
1247	J-496	723.55	Zone 1	7.0	920.54	85
841	J-328	723.19	Zone 1	7.0	920.54	85
842	J-329	723.06	Zone 1	7.0	920.54	85
1894	J-743	723.06	Zone 1	7.0	920.54	85
944	J-373	722.76	Zone 1	7.0	920.53	86
548	J-203	722.73	Zone 1	7.0	920.53	86
943	J-372	722.4	Zone 1	7.0	920.54	86
1432	J-571	715.43	Zone 1	7.0	914.14	86
1727	J-684	720.84	Zone 1	7.0	921.08	87
704	J-274	723	Zone 1	0.0	923.75	87
1433	J-572	714.74	Zone 1	7.0	914.14	86
1601	J-637	712.17	Zone 1	7.0	913.39	87
929	J-366	712.34	Zone 1	7.0	914.13	87
4580	J-1100	715	Zone 1	0.0	918.31	88
4326	J-780	708.6	Zone 1	0.0	913.51	89
390	J-126	709.87	Zone 1	7.0	916.18	89
1536	J-610	708.66	Zone 1	7.0	915.69	90
601	J-225	708.62	Zone 1	7.0	915.96	90
1590	J-631	705.33	Zone 1	7.0	913.24	90
1589	J-630	703.57	Zone 1	7.0	912.68	90
4284	J-775	703.3	Zone 1	7.0	913.29	91
928	J-365	703.38	Zone 1	7.0	914.13	91
1594	J-633	702.9	Zone 1	7.0	913.61	91
206	J-35	700.53	Zone 1	7.0	910.24	91
157	J-22	700.89	Zone 1	7.0	910.82	91
188	J-31	693.32	Zone 1	7.0	904.66	91
193	J-32	693.42	Zone 1	0.0	905.45	92
1936	J-757	690	Zone 1	714.0	900.92	91
198	J-33	690	Zone 1	7.0	901.29	91
166	J-25	690	Zone 1	7.0	902.11	92
176	J-27	692.53	Zone 1	7.0	906.46	93
171	J-26	690	Zone 1	7.0	902.95	92
203	J-34	692.77	Zone 1	7.0	907.38	93
185	J-30	693.31	Zone 1	7.0	908.32	93
179	J-28	690	Zone 1	7.0	903.8	93
182	J-29	693.61	Zone 1	7.0	909.27	93
1516	J-601	690.83	Zone 1	7.0	905.64	93
1515	J-600	688.56	Zone 1	7.0	905.64	94
1515	J-600	688.56	Zone 1	(N/A)	(N/A)	(N/A)

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
869	J-342	986.59	Zone 3	0.0	1,047.02	26
696	J-270	923.59	Zone 2	6.0	1,001.04	34
739	J-290	835.45	Zone 1	11.0	908.58	32
1740	J-689	850.25	Zone 1	11.0	912.16	27
738	J-289	832.29	Zone 1	11.0	908.58	33
530	J-193	918.74	Zone 2	6.0	1,000.72	35
664	J-255	839.88	Zone 1	11.0	899.4	26
658	J-251	960.93	Zone 3	6.0	1,045.93	37
1003	J-394	911.9	Zone 2	6.0	1,002.07	39
659	J-252	959.72	Zone 3	6.0	1,046.18	37
587	J-221	961.84	Zone 3	6.0	1,047.02	37
756	J-298	954.21	Zone 3	6.0	1,039.13	37
1729	J-685	840.28	Zone 1	11.0	909.66	30
223	J-43	946.58	Zone 3	6.0	1,030.25	36
368	J-115	943.93	Zone 3	6.0	1,029.82	37
631	J-240	942.7	Zone 3	6.0	1,030.35	38
1308	J-518	906.8	Zone 2	6.0	1,001.70	41
565	J-211	946.79	Zone 3	6.0	1,036.69	39
1477	J-589	941.57	Zone 3	6.0	1,029.82	38
1088	J-428	828.32	Zone 1	11.0	899.3	31
632	J-241	939.86	Zone 3	6.0	1,028.39	38
367	J-114	939.72	Zone 3	6.0	1,029.82	39
4015	J-765	953.95	Zone 3	6.0	1,047.95	41
876	J-344	949.03	Zone 3	6.0	1,044.67	41
564	J-210	940.7	Zone 3	6.0	1,033.28	40
892	J-351	934.36	Zone 3	6.0	1,027.17	40
1452	J-578	934.92	Zone 3	6.0	1,029.82	41
4394	J-1081	916	Zone 2	0.0	1,021.67	46
586	J-220	947.93	Zone 3	6.0	1,046.82	43
377	J-119	808.24	Zone 1	0.0	913.95	46
757	J-299	938.06	Zone 3	6.0	1,039.13	44
1592	J-632	907.34	Zone 2	6.0	1,016.43	47
4421	J-1087	912	Zone 2	0.0	1,023.10	48
453	J-155	924.05	Zone 3	6.0	1,024.79	44
446	J-151	801.5	Zone 1	0.0	913.56	48
1451	J-577	926.09	Zone 3	12.0	1,029.83	45
304	J-83	802.83	Zone 1	11.0	907.07	45
1286	J-510	816.01	Zone 1	11.0	907.07	39
820	J-321	800.91	Zone 1	11.0	907.31	46
634	J-242	800.1	Zone 1	0.0	909.97	48
324	J-91	885.9	Zone 2	6.0	998.89	49
526	J-191	814.99	Zone 1	11.0	907.36	40
917	J-361	939.94	Zone 3	6.0	1,046.85	46
714	J-278	800.89	Zone 1	22.0	902.8	44
1318	J-523	919.36	Zone 3	6.0	1,027.47	47
1641	J-652	916.64	Zone 3	6.0	1,024.79	47
4290	J-777	920	Zone 3	6.0	1,029.82	48
140	J-13	915.88	Zone 3	6.0	1,024.79	47
4389	J-1080	914	Zone 3	0.0	1,022.66	47
232	J-46	881.45	Zone 2	6.0	996.23	50
695	J-269	940.04	Zone 3	6.0	1,048.78	47
4416	J-1086	912	Zone 3	0.0	1,024.25	49
837	J-327	879.18	Zone 2	6.0	998.60	52
910	J-359	798.46	Zone 1	11.0	896.26	42
949	J-374	877.55	Zone 2	6.0	994.40	51
1340	J-533	810.3	Zone 1	11.0	916.02	46
4376	J-1077	816	Zone 1	0.0	942.9	55
540	J-198	874.09	Zone 2	6.0	996.26	53
729	J-284	811.68	Zone 1	11.0	933.56	53
149	J-18	796	Zone 1	0.0	899.07	45
4403	J-1083	806	Zone 1	0.0	928.58	53
702	J-273	803.82	Zone 1	11.0	916.03	49
529	J-192	931.71	Zone 3	6.0	1,050.60	51
4412	J-1085	808	Zone 1	0.0	924.17	50
1146	J-451	870.76	Zone 2	6.0	1,000.56	56
908	J-358	870.8	Zone 2	6.0	1,000.72	56
575	J-215	801.56	Zone 1	11.0	916.03	50
1842	J-722	792.71	Zone 1	11.0	898.99	46
836	J-326	869.54	Zone 2	6.0	1,000.02	56
789	J-312	869.47	Zone 2	6.0	1,001.68	57
4609	J-1107	782	Zone 1	55.0	906.93	54
1510	J-599	868.48	Zone 2	6.0	1,001.42	58
674	J-259	868.28	Zone 2	6.0	1,001.04	57
1037	J-408	868.58	Zone 2	6.0	1,001.70	58
229	J-44	789.88	Zone 1	0.0	899.12	47
3993	J-763	780.72	Zone 1	11.0	907.02	55
1482	J-591	901.63	Zone 3	6.0	1,027.46	54

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1646	J-655	868.44	Zone 2	6.0	1,001.80	58
961	J-380	780.05	Zone 1	11.0	907.01	55
730	J-285	802.24	Zone 1	11.0	933.55	57
4294	J-778	902.2	Zone 3	6.0	1,029.82	55
924	J-363	866.17	Zone 2	6.0	1,001.17	58
699	J-271	928.39	Zone 3	6.0	1,052.80	54
701	J-272	796.4	Zone 1	11.0	916.04	52
652	J-247	877.38	Zone 2	6.0	1,014.42	59
1860	J-727	787.1	Zone 1	0.0	898.99	48
231	J-45	781.06	ɔn-FF Junctiɔ	11.0	905.54	54
468	J-162	897.72	Zone 3	6.0	1,026.49	56
211	J-36	861.51	Zone 2	6.0	996.23	58
1157	J-455	867.66	Zone 2	6.0	1,005.23	60
895	J-352	781.23	Zone 1	11.0	891.14	48
523	J-190	791.42	Zone 1	11.0	907.06	50
150	J-19	784.82	Zone 1	11.0	898.99	49
1621	J-643	785.63	Zone 1	11.0	887.56	44
1865	J-730	785.29	Zone 1	11.0	887.56	44
487	J-173	785.26	Zone 1	11.0	887.56	44
4287	J-776	870.7	Zone 2	6.0	1,013.11	62
486	J-172	784.46	Zone 1	0.0	887.56	45
212	J-37	856.94	Zone 2	6.0	996.23	60
490	J-175	784.39	Zone 1	0.0	887.56	45
473	J-164	784.33	Zone 1	11.0	900.49	50
1332	J-529	909.15	Zone 3	6.0	1,046.82	60
489	J-174	783.98	Zone 1	11.0	887.56	45
1484	J-592	787.17	Zone 1	11.0	908.07	52
1863	J-729	783.55	Zone 1	11.0	887.56	45
1104	J-433	783.09	Zone 1	11.0	900.25	51
1156	J-454	867.34	Zone 2	6.0	1,010.97	62
546	J-202	786.99	Zone 1	11.0	909.67	53
1862	J-728	783.22	Zone 1	11.0	887.56	45
985	J-390	786.06	Zone 1	11.0	906.75	52
408	J-132	788.66	Zone 1	11.0	916.05	55
545	J-201	787.35	Zone 1	11.0	912.17	54
509	J-183	785.36	Zone 1	11.0	906.06	52
1355	J-539	784.4	Zone 1	11.0	903.32	51
1770	J-697	907.69	Zone 3	6.0	1,048.50	61
1064	J-418	789.29	Zone 1	11.0	921.27	57
4057	J-769	779.99	Zone 1	11.0	899.29	52
508	J-182	783.84	Zone 1	11.0	903.71	52
483	J-170	781.61	Zone 1	11.0	887.56	46
1620	J-642	781.52	Zone 1	11.0	887.56	46
484	J-171	781.15	Zone 1	11.0	887.56	46
920	J-362	784.76	Zone 1	11.0	909.73	54
1820	J-714	782.68	Zone 1	11.0	903.31	52
1065	J-419	787.6	Zone 1	11.0	921.26	58
988	J-391	786.1	Zone 1	11.0	917.64	57
1160	J-457	783.96	Zone 1	11.0	897.37	49
460	J-159	772.82	Zone 1	11.0	888.85	50
1380	J-552	772.41	Zone 1	11.0	888.58	50
1287	J-511	781.93	Zone 1	11.0	906.59	54
1334	J-530	782.86	Zone 1	11.0	909.89	55
253	J-58	782.32	Zone 1	11.0	897.37	50
872	J-343	771.28	Zone 1	11.0	888.66	51
1492	J-595	771.34	Zone 1	11.0	890.68	52
1159	J-456	781.84	Zone 1	0.0	897.37	50
1051	J-414	776.75	Zone 1	11.0	887.58	48
465	J-161	782.17	Zone 1	11.0	916.12	58
4000	J-764	775.86	Zone 1	11.0	887.58	48
653	J-248	861.2	Zone 2	6.0	1,013.85	66
451	J-154	917.11	Zone 3	0.0	1,061.21	62
1379	J-551	767	Zone 1	11.0	888.63	53
784	J-309	775.3	Zone 1	11.0	890.81	50
459	J-158	766.86	Zone 1	11.0	888.86	53
261	J-62	774.14	Zone 1	0.0	887.59	49
4039	J-768	773.93	Zone 1	11.0	887.58	49
1491	J-594	766.89	Zone 1	11.0	890.57	54
1771	J-698	899.31	Zone 3	6.0	1,048.49	65
262	J-63	773.85	Zone 1	11.0	887.59	49
1025	J-402	846.25	Zone 2	6.0	996.23	65
1415	J-564	775	Zone 1	11.0	892.52	51
753	J-296	765.42	Zone 1	11.0	888.56	53
370	J-116	772.61	Zone 1	0.0	887.6	50
371	J-117	772.41	Zone 1	11.0	887.59	50
511	J-184	765.02	Zone 1	11.0	890.09	54
1086	J-427	772.72	Zone 1	11.0	890.16	51

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
512	J-185	765.23	Zone 1	11.0	890.51	54
592	J-222	771.92	Zone 1	11.0	887.58	50
497	J-177	771.9	Zone 1	11.0	887.6	50
1818	J-713	771.68	Zone 1	11.0	887.58	50
853	J-335	772.29	Zone 1	11.0	890.16	51
1184	J-464	772.09	Zone 1	11.0	890.17	51
1085	J-426	771.74	Zone 1	11.0	890.17	51
852	J-334	771.54	Zone 1	11.0	890.16	51
477	J-166	772.69	Zone 1	11.0	902.37	56
1141	J-448	762.86	Zone 1	11.0	883.99	52
3881	J-762	842.15	Zone 2	0.0	996.23	67
1040	J-409	770.05	Zone 1	11.0	890.42	52
1148	J-452	768.97	Zone 1	11.0	887.59	51
543	J-200	769.02	Zone 1	11.0	887.75	51
862	J-339	843.43	Zone 2	6.0	1,000.98	68
855	J-336	761.44	Zone 1	22.0	888.73	55
1625	J-645	769.82	Zone 1	22.0	891.44	53
1149	J-453	768.5	Zone 1	11.0	887.6	52
1144	J-450	761.01	Zone 1	11.0	883.99	53
863	J-340	842.65	Zone 2	6.0	1,000.82	68
1883	J-738	768.15	Zone 1	11.0	887.72	52
542	J-199	768	Zone 1	11.0	887.75	52
1744	J-690	767.68	Zone 1	11.0	887.71	52
1291	J-513	767.57	Zone 1	22.0	887.61	52
4071	J-772	768.5	Zone 1	11.0	890.81	53
617	J-234	769.11	Zone 1	11.0	892.52	53
1597	J-635	768.24	Zone 1	11.0	901.37	58
1890	J-741	767.33	Zone 1	11.0	887.76	52
1353	J-538	768.07	Zone 1	11.0	890.7	53
662	J-254	766.81	Zone 1	11.0	888.02	52
661	J-253	766.74	Zone 1	11.0	888.02	52
246	J-55	766.68	Zone 1	0.0	888.02	52
778	J-307	766.21	Zone 1	11.0	887.75	53
616	J-233	767.73	Zone 1	11.0	892.52	54
273	J-69	766.03	Zone 1	11.0	888.02	53
1138	J-446	758.18	Zone 1	11.0	883.99	54
1187	J-465	765.11	Zone 1	11.0	887.65	53
940	J-370	765.04	Zone 1	11.0	888.05	53
1608	J-640	757.4	Zone 1	11.0	888.56	57
1053	J-415	764.75	Zone 1	22.0	887.67	53
777	J-306	764.63	Zone 1	11.0	887.75	53
335	J-94	764.81	Zone 1	11.0	889.16	54
264	J-64	818.53	Zone 2	6.0	938.84	52
134	J-11	764.9	Zone 1	11.0	890.13	54
135	J-12	764.86	Zone 1	0.0	890.13	54
214	J-38	838.58	Zone 2	0.0	1,000.71	70
478	J-167	765.97	Zone 1	11.0	901.07	58
972	J-385	764.65	Zone 1	11.0	890.13	54
234	J-47	764.01	Zone 1	11.0	887.78	54
1330	J-528	765.61	Zone 1	11.0	892.52	55
4407	J-1084	808	Zone 2	0.0	924.96	51
971	J-384	764.39	Zone 1	11.0	890.13	54
1049	J-413	763.79	Zone 1	11.0	887.8	54
941	J-371	763.73	Zone 1	11.0	888.05	54
598	J-223	763.68	Zone 1	11.0	887.73	54
787	J-311	764.66	Zone 1	11.0	890.88	55
235	J-48	763.68	Zone 1	11.0	887.8	54
599	J-224	763.62	Zone 1	11.0	887.73	54
847	J-331	764.22	Zone 1	11.0	890.13	54
1143	J-449	756.17	Zone 1	11.0	883.99	55
754	J-297	755.98	Zone 1	11.0	888.56	57
1919	J-752	763.36	Zone 1	11.0	887.79	54
613	J-231	764.7	Zone 1	11.0	892.53	55
243	J-53	763.46	Zone 1	11.0	890.13	55
1301	J-517	762.7	Zone 1	11.0	887.84	54
1918	J-751	762.79	Zone 1	11.0	887.79	54
4549	J-1096	755	Zone 1	0.0	888.61	58
1710	J-679	762.24	Zone 1	11.0	888.5	55
362	J-111	762.16	Zone 1	11.0	887.98	54
614	J-232	763.81	Zone 1	11.0	892.53	56
786	J-310	763.11	Zone 1	11.0	890.9	55
4067	J-771	763.04	Zone 1	11.0	890.81	55
1713	J-680	762.05	Zone 1	11.0	888.2	55
1219	J-483	763.84	Zone 1	11.0	903.12	60
443	J-150	761.97	Zone 1	11.0	888.36	55
712	J-277	762.28	Zone 1	11.0	889.66	55
608	J-230	763.34	Zone 1	11.0	892.54	56

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1230	J-488	761.79	Zone 1	11.0	888.91	55
1238	J-492	761.54	Zone 1	11.0	887.88	55
1140	J-447	754.27	Zone 1	11.0	883.99	56
1374	J-549	761.52	Zone 1	11.0	887.88	55
1169	J-460	761.47	Zone 1	11.0	887.95	55
361	J-110	761.45	Zone 1	11.0	887.98	55
901	J-354	761.42	Zone 1	11.0	887.86	55
783	J-308	761.91	Zone 1	11.0	890.83	56
428	J-141	761.1	Zone 1	11.0	889.17	55
517	J-187	831.17	Zone 2	6.0	981.17	65
429	J-142	761.01	Zone 1	22.0	889.33	56
520	J-188	761.52	Zone 1	11.0	890.95	56
1540	J-611	753.15	Zone 1	11.0	888.83	59
379	J-120	760.3	Zone 1	11.0	887.86	55
711	J-276	760.57	Zone 1	11.0	889.66	56
1758	J-694	760.57	Zone 1	11.0	889.88	56
794	J-314	760.1	Zone 1	11.0	887.93	55
707	J-275	761.13	Zone 1	11.0	891.18	56
380	J-121	760	Zone 1	11.0	887.87	55
1439	J-574	757.48	Zone 1	11.0	891.2	58
980	J-387	759.77	Zone 1	11.0	887.93	55
1289	J-512	760.78	Zone 1	11.0	891.01	56
993	J-393	763.13	Zone 1	11.0	897.39	58
4323	J-779	759.7	Zone 1	0.0	888	56
373	J-118	752.16	Zone 1	11.0	888.68	59
1886	J-739	759.83	Zone 1	11.0	890.13	56
1877	J-735	759.5	Zone 1	11.0	888.01	56
554	J-206	751.96	Zone 1	11.0	884	57
1547	J-614	759.77	Zone 1	11.0	890.16	56
1373	J-548	759.17	Zone 1	11.0	887.89	56
926	J-364	751.82	Zone 1	11.0	888.73	59
1019	J-400	759.3	Zone 1	11.0	887.99	56
607	J-229	760.86	Zone 1	11.0	892.67	57
648	J-245	751.96	Zone 1	11.0	888.34	59
502	J-179	759.11	Zone 1	11.0	888.91	56
553	J-205	751.67	Zone 1	11.0	884	57
1803	J-707	758.89	Zone 1	11.0	887.85	56
937	J-369	758.89	Zone 1	11.0	887.92	56
382	J-122	758.81	Zone 1	11.0	887.85	56
1017	J-399	758.57	Zone 1	11.0	887.92	56
494	J-176	751.2	Zone 1	11.0	888.35	59
1367	J-545	758.23	Zone 1	11.0	887.92	56
687	J-265	751.07	Zone 1	11.0	884.41	58
1113	J-436	758.21	Zone 1	11.0	888.53	56
521	J-189	758.99	Zone 1	11.0	891.02	57
1678	J-668	761.44	Zone 1	11.0	897.4	59
503	J-180	758.02	Zone 1	11.0	888.92	57
1274	J-505	757.96	Zone 1	11.0	887.89	56
1174	J-462	757.85	Zone 1	11.0	887.91	56
1016	J-398	757.85	Zone 1	11.0	887.98	56
412	J-133	759.08	Zone 1	11.0	891.86	57
1282	J-508	759.33	Zone 1	11.0	892.55	58
215	J-39	831.81	Zone 2	6.0	1,000.71	73
1114	J-437	757.45	Zone 1	11.0	888.55	57
1462	J-581	757.45	Zone 1	11.0	888.05	57
667	J-257	757.17	Zone 1	11.0	887.86	57
666	J-256	757.17	Zone 1	11.0	887.91	57
903	J-355	758.02	Zone 1	11.0	891.08	58
769	J-302	758.4	Zone 1	11.0	892.06	58
1463	J-582	756.91	Zone 1	11.0	888.05	57
954	J-377	756.79	Zone 1	11.0	887.89	57
1090	J-429	756.71	Zone 1	11.0	887.85	57
1164	J-458	756.68	Zone 1	11.0	889.08	57
1698	J-676	758.21	Zone 1	11.0	903.08	63
1667	J-663	756.19	Zone 1	22.0	889.38	58
1132	J-443	756.97	Zone 1	11.0	890.84	58
296	J-80	755.54	Zone 1	11.0	885.99	56
319	J-89	757.82	Zone 1	11.0	893.42	59
1316	J-522	756.18	Zone 1	11.0	900.48	62
1555	J-617	756.03	Zone 1	11.0	888.9	57
672	J-258	755.31	Zone 1	11.0	890.24	58
1455	J-579	756.18	Zone 1	11.0	891.59	59
4495	J-1088	762	Zone 1	1156.0	899.22	59
1679	J-669	756.84	Zone 1	11.0	894.06	59
1061	J-417	754.53	Zone 1	11.0	887.89	58
1725	J-683	747.01	Zone 1	11.0	888.6	61
1672	J-665	754.74	Zone 1	11.0	891.49	59

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1383	J-553	754.43	Zone 1	11.0	887.85	58
1172	J-461	747.16	Zone 1	11.0	888.04	61
4589	J-1103	762	Zone 1	0.0	900.36	60
933	J-368	753.24	Zone 1	11.0	889.28	59
551	J-204	754.93	Zone 1	11.0	900.49	63
1474	J-587	753.61	Zone 1	11.0	888.78	58
806	J-317	754.76	Zone 1	11.0	900.68	63
890	J-350	755.15	Zone 1	11.0	894.46	60
4398	J-1082	806	Zone 2	0.0	929.69	54
423	J-139	752.35	Zone 1	11.0	889.26	59
1327	J-526	755.68	Zone 1	11.0	896.83	61
619	J-235	745.34	Zone 1	11.0	887.79	62
480	J-168	745.32	Zone 1	22.0	887.89	62
4372	J-1076	816	Zone 2	0.0	957.28	61
951	J-375	756.43	Zone 1	11.0	897.88	61
1659	J-661	752.25	Zone 1	11.0	889.26	59
1181	J-463	753.87	Zone 1	11.0	892.54	60
772	J-303	755.8	Zone 1	11.0	897.65	61
1035	J-407	748.96	Zone 1	11.0	893.76	63
735	J-288	751.83	Zone 1	11.0	891.39	60
1824	J-716	752.07	Zone 1	11.0	888.59	59
1137	J-445	744.52	Zone 1	11.0	883.99	60
1564	J-621	752.91	Zone 1	11.0	894.61	61
1557	J-618	744.55	Zone 1	11.0	886.67	61
583	J-219	751.27	Zone 1	11.0	889.19	60
1899	J-745	757.61	Zone 1	1166.0	836.57	34
1220	J-484	753.27	Zone 1	11.0	903.06	65
1685	J-672	752.59	Zone 1	11.0	891.64	60
1522	J-604	751.92	Zone 1	11.0	888.91	59
1580	J-627	752.91	Zone 1	11.0	892.57	60
1658	J-660	750.96	Zone 1	11.0	891.2	61
1854	J-726	745.59	Zone 1	11.0	882.03	59
1823	J-715	750.94	Zone 1	11.0	889.18	60
1582	J-628	744.01	Zone 1	11.0	884.79	61
1495	J-596	754.51	Zone 1	11.0	897.97	62
1634	J-649	750.61	Zone 1	11.0	892.02	61
686	J-264	743.51	Zone 1	22.0	884.42	61
1654	J-658	750.08	Zone 1	11.0	891.51	61
1663	J-662	750.29	Zone 1	11.0	889.22	60
557	J-208	743.18	Zone 1	11.0	884	61
4586	J-1102	758	Zone 1	0.0	899.91	61
952	J-376	754.29	Zone 1	11.0	897.88	62
322	J-90	751.86	Zone 1	11.0	892.53	61
1328	J-527	752.98	Zone 1	11.0	897.18	62
1837	J-720	750.86	Zone 1	11.0	888.61	60
968	J-383	750.27	Zone 1	11.0	888.71	60
690	J-266	749.67	Zone 1	11.0	892.73	62
1413	J-563	751.6	Zone 1	11.0	892.53	61
1801	J-706	751.26	Zone 1	11.0	894.62	62
1475	J-588	750.61	Zone 1	11.0	888.74	60
749	J-294	750.5	Zone 1	11.0	888.76	60
1429	J-569	750.8	Zone 1	11.0	888.66	60
1279	J-507	749.04	Zone 1	11.0	891.03	61
1347	J-535	878.6	Zone 3	6.0	1,051.01	75
556	J-207	742.23	Zone 1	11.0	884	61
506	J-181	749.23	Zone 1	11.0	889.22	61
1322	J-524	749.1	Zone 1	11.0	896.23	64
1228	J-487	750.01	Zone 1	11.0	888.89	60
906	J-357	751.21	Zone 1	11.0	900.47	65
1653	J-657	748.85	Zone 1	11.0	892.34	62
308	J-85	741.95	Zone 1	11.0	884.03	61
990	J-392	745.86	Zone 1	11.0	888.1	62
1892	J-742	744.63	Zone 1	11.0	885.04	61
963	J-381	745.75	Zone 1	11.0	888.15	62
1605	J-639	880.3	Zone 3	6.0	1,052.74	75
905	J-356	750.58	Zone 1	11.0	900.48	65
1795	J-704	750.49	Zone 1	11.0	896.77	63
1872	J-733	753.59	Zone 1	22.0	890.76	59
217	J-40	744.91	Zone 1	11.0	885.93	61
1489	J-593	751.49	Zone 1	11.0	897.19	63
750	J-295	749.25	Zone 1	11.0	888.76	60
1261	J-501	747.99	Zone 1	11.0	892.33	62
655	J-249	741.28	Zone 1	22.0	887.95	63
146	J-16	743.33	Zone 1	11.0	883.54	61
420	J-137	744.79	Zone 1	11.0	892.67	64
1215	J-481	747.33	Zone 1	11.0	896.3	64
812	J-320	748.63	Zone 1	11.0	888.98	61

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1532	J-608	746.67	Zone 1	11.0	897.44	65
1028	J-404	747.66	Zone 1	11.0	889.28	61
1681	J-670	748.23	Zone 1	11.0	889.2	61
97	J-2	743.39	Zone 1	11.0	884.53	61
1006	J-395	876.76	Zone 3	6.0	1,051.01	75
1826	J-717	752.51	Zone 1	11.0	898.4	63
1702	J-677	747.92	Zone 1	11.0	889.24	61
977	J-386	748.31	Zone 1	11.0	888.76	61
1214	J-480	746.73	Zone 1	11.0	897.15	65
475	J-165	749.2	Zone 1	11.0	898.86	65
1404	J-561	746.62	Zone 1	11.0	890.97	62
307	J-84	740.12	Zone 1	11.0	884.03	62
329	J-92	748.97	Zone 1	0.0	898.87	65
1033	J-406	744.2	Zone 1	11.0	898.46	67
147	J-17	742.27	Zone 1	11.0	883.53	61
281	J-74	746.13	Zone 1	11.0	897.21	65
434	J-144	748.64	Zone 1	11.0	898.88	65
1311	J-519	748.61	Zone 1	11.0	898.63	65
278	J-72	753	Zone 1	11.0	891.46	60
1430	J-570	750.84	Zone 1	11.0	890.2	60
865	J-341	745.68	Zone 1	11.0	897.33	66
435	J-145	748.27	Zone 1	11.0	898.72	65
1276	J-506	749.63	Zone 1	11.0	897.42	64
1244	J-494	748.28	Zone 1	11.0	898.67	65
1259	J-500	745.69	Zone 1	11.0	893.26	64
1127	J-442	745.34	Zone 1	11.0	896.81	66
1720	J-682	745.34	Zone 1	11.0	889.91	63
1558	J-619	739.31	Zone 1	11.0	885.62	63
1217	J-482	745.04	Zone 1	11.0	897.46	66
1124	J-441	747	Zone 1	11.0	889.26	62
421	J-138	742.68	Zone 1	11.0	892.04	65
1357	J-540	745.36	Zone 1	11.0	895.72	65
1924	J-753	750.93	Zone 1	0.0	890.64	60
432	J-143	747.73	Zone 1	11.0	898.67	65
1370	J-547	752.56	Zone 1	11.0	891.66	60
1873	J-734	752.51	Zone 1	11.0	891.66	60
656	J-250	738.9	Zone 1	11.0	887.94	64
885	J-347	746.86	Zone 1	11.0	888.58	61
1906	J-749	750.88	Zone 1	11.0	890.78	61
1269	J-504	744.7	Zone 1	11.0	897.21	66
1789	J-702	738.61	Zone 1	11.0	884.01	63
1263	J-502	747.28	Zone 1	11.0	898.67	65
4499	J-1090	753.1	Zone 1	0.0	899.78	63
4022	J-767	749.21	Zone 1	11.0	899.13	65
1398	J-560	746.27	Zone 1	11.0	888.76	62
1234	J-490	744.25	Zone 1	11.0	897.23	66
1683	J-671	746.14	Zone 1	11.0	888.93	62
3865	J-761	750.48	Zone 1	11.0	890.78	61
1313	J-520	745.18	Zone 1	22.0	899.33	67
964	J-382	742.2	Zone 1	11.0	888.18	63
117	J-4	746.2	Zone 1	33.0	888.37	62
643	J-244	746.11	Zone 1	11.0	889.43	62
1245	J-495	746.97	Zone 1	11.0	898.99	66
1423	J-566	750.24	Zone 1	11.0	890.73	61
1751	J-691	749.09	Zone 1	11.0	899.99	65
678	J-261	743.46	Zone 1	11.0	897.68	67
1265	J-503	743.4	Zone 1	11.0	897.24	67
1435	J-573	743.45	Zone 1	11.0	895.02	66
1200	J-472	739.82	Zone 1	11.0	883.52	62
810	J-319	741.63	Zone 1	11.0	894.05	66
1116	J-438	743.35	Zone 1	11.0	896.31	66
1134	J-444	743.4	Zone 1	11.0	892.97	65
677	J-260	743.26	Zone 1	11.0	898.13	67
1636	J-650	742.41	Zone 1	11.0	890.49	64
680	J-262	748.64	Zone 1	11.0	890.24	61
829	J-324	743.86	Zone 1	11.0	885.99	61
809	J-318	741.27	Zone 1	11.0	895.21	67
626	J-237	741.91	Zone 1	11.0	897.52	67
1119	J-439	741.13	Zone 1	11.0	888.15	64
775	J-305	746.08	Zone 1	11.0	900.46	67
448	J-152	742.09	Zone 1	22.0	890.47	64
683	J-263	747.35	Zone 1	11.0	889.69	62
310	J-86	748.64	Zone 1	11.0	900.61	66
888	J-349	740.86	Zone 1	11.0	892.99	66
1501	J-597	742.81	Zone 1	11.0	890.92	64
1369	J-546	750.83	Zone 1	11.0	892.13	61
1835	J-719	743.3	Zone 1	11.0	889.24	63

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1223	J-485	742.08	Zone 1	11.0	897.33	67
742	J-291	742.08	Zone 1	0.0	897.33	67
859	J-337	744.11	Zone 1	11.0	889.3	63
1692	J-673	745.36	Zone 1	11.0	899.79	67
886	J-348	744.45	Zone 1	11.0	888.58	62
1376	J-550	741.43	Zone 1	11.0	898.26	68
639	J-243	745.93	Zone 1	11.0	889.07	62
288	J-76	741.78	Zone 1	0.0	897.24	67
897	J-353	816.01	Zone 2	6.0	996.23	78
287	J-75	741.76	Zone 1	0.0	897.24	67
878	J-345	742.41	Zone 1	11.0	889.93	64
860	J-338	743.9	Zone 1	11.0	889.34	63
1195	J-470	742.74	Zone 1	11.0	898.85	68
1077	J-423	741.43	Zone 1	11.0	889.83	64
625	J-236	740.77	Zone 1	11.0	897.52	68
1192	J-468	740.65	Zone 1	11.0	896.26	67
931	J-367	745	Zone 1	0.0	899.42	67
1637	J-651	740.85	Zone 1	11.0	890.02	65
605	J-228	741.76	Zone 1	11.0	889.61	64
291	J-78	743.73	Zone 1	11.0	888.25	63
1905	J-748	743.84	Zone 1	22.0	888.32	63
764	J-300	740.77	Zone 1	11.0	897.53	68
1191	J-467	740.46	Zone 1	11.0	894.99	67
581	J-218	743.58	Zone 1	11.0	889.82	63
1901	J-746	737.77	Zone 1	11.0	883.52	63
1524	J-605	740.44	Zone 1	11.0	890.58	65
290	J-77	743.59	Zone 1	11.0	888.25	63
1251	J-498	740.77	Zone 1	11.0	897.54	68
1731	J-686	743.4	Zone 1	11.0	888.25	63
1236	J-491	740.25	Zone 1	11.0	893.01	66
1738	J-688	743.07	Zone 1	11.0	889.68	63
4281	J-774	740.2	Zone 1	11.0	889.64	65
774	J-304	744.21	Zone 1	11.0	900.68	68
578	J-216	741.88	Zone 1	11.0	885.99	62
514	J-186	743.31	Zone 1	11.0	890.08	64
604	J-227	741.44	Zone 1	11.0	889.17	64
1629	J-646	744.05	Zone 1	11.0	903.04	69
159	J-23	765.71	Zone 1	11.0	898.99	58
240	J-51	742.71	Zone 1	11.0	887.9	63
1194	J-469	742.74	Zone 1	11.0	899.76	68
831	J-325	742.74	Zone 1	11.0	900.02	68
629	J-239	739.19	Zone 1	11.0	888.36	65
237	J-49	742.74	Zone 1	11.0	900.2	68
238	J-50	742.74	Zone 1	11.0	900.21	68
1697	J-675	743.72	Zone 1	11.0	903.04	69
1466	J-584	741.42	Zone 1	11.0	888.86	64
1845	J-723	736.99	Zone 1	11.0	883.8	64
1870	J-732	740.93	Zone 1	11.0	889.02	64
579	J-217	741.18	Zone 1	11.0	885.98	63
241	J-52	742.24	Zone 1	11.0	887.9	63
414	J-134	747.43	Zone 1	11.0	901.6	67
1479	J-590	741.23	Zone 1	11.0	889.06	64
1206	J-476	736.55	Zone 1	11.0	883.5	64
270	J-67	742.03	Zone 1	22.0	887.95	63
1693	J-674	743.45	Zone 1	11.0	900.1	68
1944	J-759	743.2	Zone 1	22.0	903.04	69
1648	J-656	738.56	Zone 1	11.0	889.72	65
1676	J-667	734.22	Zone 1	11.0	885.1	65
1210	J-479	738.51	Zone 1	11.0	889.01	65
1941	J-758	743.1	Zone 1	22.0	903.04	69
1568	J-623	738.48	Zone 1	11.0	889.88	66
628	J-238	738.42	Zone 1	11.0	888.37	65
3845	J-760	750.61	Zone 1	22.0	893.89	62
1544	J-612	740.14	Zone 1	11.0	888.92	64
1903	J-747	742.95	Zone 1	11.0	900.19	68
1030	J-405	738.8	Zone 1	11.0	888.73	65
1567	J-622	738.3	Zone 1	11.0	889.95	66
1840	J-721	738.2	Zone 1	11.0	890.11	66
1708	J-678	733.6	Zone 1	11.0	888.68	67
1752	J-692	747	Zone 1	0.0	902.07	67
1471	J-585	734.01	Zone 1	11.0	885.16	65
4515	J-1092	747.54	Zone 1	0.0	899.22	66
1925	J-754	750.61	Zone 1	11.0	894.29	62
131	J-10	740.12	Zone 1	11.0	885.98	63
1545	J-613	739.58	Zone 1	11.0	888.87	65
1932	J-756	750.61	Zone 1	0.0	894.39	62
388	J-125	741.03	Zone 1	11.0	887.89	64

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
1043	J-410	738.15	Zone 1	11.0	888.72	65
1426	J-568	733.2	Zone 1	11.0	884.37	65
1881	J-737	737.8	Zone 1	11.0	888.88	65
1102	J-432	742	Zone 1	11.0	891.18	65
1299	J-516	741.1	Zone 1	11.0	888.09	64
437	J-146	740.95	Zone 1	11.0	887.97	64
1675	J-666	733.2	Zone 1	11.0	884.79	66
849	J-332	746.05	Zone 1	11.0	901.5	67
4278	J-773	737.7	Zone 1	11.0	889.11	66
1879	J-736	732.61	Zone 1	11.0	884.14	66
438	J-147	740.44	Zone 1	11.0	887.99	64
1013	J-397	737.29	Zone 1	11.0	888.67	65
1209	J-478	736.84	Zone 1	11.0	889.02	66
4592	J-1104	755	Zone 1	0.0	911.49	68
1197	J-471	736.51	Zone 1	11.0	890.11	66
722	J-282	745.37	Zone 1	11.0	901.46	68
850	J-333	745.36	Zone 1	11.0	901.5	68
1012	J-396	737.16	Zone 1	11.0	888.67	66
1551	J-615	738.14	Zone 1	11.0	888.77	65
338	J-95	738.97	Zone 1	0.0	887.49	64
344	J-99	738.94	Zone 1	22.0	887.51	64
1777	J-700	736.32	Zone 1	11.0	888.99	66
801	J-316	739.06	Zone 1	11.0	887.41	64
1552	J-616	738.02	Zone 1	11.0	888.74	65
1296	J-515	732.43	Zone 1	11.0	885.21	66
732	J-286	732.06	Zone 1	22.0	884.94	66
1519	J-603	739.63	Zone 1	11.0	887.86	64
4652	J-1110	740	<None>	0.0	887.9	64
4594	J-1105	753	Zone 1	0.0	909.18	68
1072	J-420	735.63	Zone 1	11.0	888.05	66
347	J-101	738.69	Zone 1	11.0	887.44	64
744	J-292	738.48	Zone 1	0.0	887.73	65
1465	J-583	738.51	Zone 1	11.0	888.85	65
418	J-136	731.84	Zone 1	22.0	884.67	66
1110	J-435	738.54	Zone 1	11.0	887.47	64
353	J-105	738.49	Zone 1	11.0	887.46	64
339	J-96	738.44	Zone 1	11.0	887.49	64
1284	J-509	738.31	Zone 1	11.0	885.98	64
341	J-97	738.48	Zone 1	11.0	887.45	64
982	J-388	737.32	Zone 1	11.0	888.7	65
301	J-81	738.15	Zone 1	11.0	887.77	65
1518	J-602	738.59	Zone 1	11.0	887.5	64
1021	J-401	735.53	Zone 1	11.0	889.92	67
4019	J-766	735.41	Zone 1	11.0	888.77	66
220	J-41	744.34	Zone 1	22.0	901.11	68
692	J-267	735.95	Zone 1	11.0	891.2	67
693	J-268	735.94	Zone 1	11.0	891.2	67
396	J-128	750.51	Zone 1	11.0	895.86	63
1623	J-644	738.16	Zone 1	11.0	887.42	65
883	J-346	731.23	Zone 1	11.0	884.48	66
1570	J-624	737.9	Zone 1	11.0	888.86	65
4512	J-1091	745.21	Zone 1	0.0	899.62	67
1786	J-701	737.9	Zone 1	11.0	888.87	65
315	J-87	738.18	Zone 1	22.0	887.41	65
1189	J-466	735	Zone 1	11.0	888.26	66
1930	J-755	738.15	Zone 1	11.0	887.41	65
1754	J-693	744.06	Zone 1	11.0	899.54	67
957	J-379	735.06	Zone 1	11.0	889.32	67
1793	J-703	731.07	Zone 1	11.0	884.87	67
316	J-88	737.88	Zone 1	11.0	887.41	65
800	J-315	737.82	Zone 1	11.0	887.41	65
4519	J-1093	743.57	Zone 1	0.0	899	67
1764	J-695	734.97	Zone 1	22.0	891.27	68
1562	J-620	736.68	Zone 1	11.0	888.62	66
745	J-293	737.43	Zone 1	11.0	887.73	65
399	J-129	756.54	Zone 1	11.0	900.89	62
405	J-131	751.84	Zone 1	11.0	897.38	63
1440	J-575	735.21	Zone 1	11.0	891.19	67
402	J-130	758.75	Zone 1	11.0	902.77	62
956	J-378	734.58	Zone 1	11.0	888.92	67
499	J-178	737.52	Zone 1	11.0	887.4	65
393	J-127	753.96	Zone 1	11.0	899.08	63
1203	J-474	732.67	Zone 1	11.0	883.48	65
1166	J-459	735.53	Zone 1	11.0	888.01	66
766	J-301	737.16	Zone 1	11.0	887.49	65
417	J-135	730.38	Zone 1	11.0	884.77	67
1345	J-534	736.92	Zone 1	11.0	886	64

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
983	J-389	735.55	Zone 1	11.0	888.51	66
1350	J-537	736.49	Zone 1	11.0	888.48	66
1656	J-659	759.91	Zone 1	11.0	904.12	62
1812	J-710	736.65	Zone 1	11.0	885.99	65
567	J-212	736.94	Zone 1	11.0	887.4	65
1121	J-440	729.8	Zone 1	11.0	884.31	67
1386	J-554	735.48	Zone 1	11.0	888.47	66
1365	J-544	735.52	Zone 1	11.0	888.28	66
1096	J-431	732.03	Zone 1	11.0	883.59	66
568	J-213	736.71	Zone 1	11.0	887.4	65
1869	J-731	735.5	Zone 1	11.0	888.47	66
1026	J-403	809.22	Zone 2	6.0	996.23	81
1396	J-559	735.76	Zone 1	11.0	888.47	66
1390	J-557	735.14	Zone 1	11.0	888.47	66
1733	J-687	729.64	Zone 1	11.0	879.91	65
129	J-9	731.23	Zone 1	11.0	883.48	66
259	J-61	729.44	Zone 1	11.0	885.04	67
4062	J-770	733.19	Zone 1	11.0	891.06	68
1045	J-411	730.92	Zone 1	11.0	883.48	66
1472	J-586	729	Zone 1	11.0	885.15	68
1083	J-425	735.52	Zone 1	11.0	887.4	66
720	J-281	732.9	Zone 1	11.0	891.06	68
1325	J-525	733.87	Zone 1	11.0	888.27	67
128	J-8	730.45	Zone 1	11.0	883.48	66
1425	J-567	727.97	Zone 1	11.0	884.37	68
1387	J-555	733.66	Zone 1	11.0	888.27	67
1814	J-711	731.89	Zone 1	11.0	888.73	68
1447	J-576	732.18	Zone 1	11.0	891.03	69
1364	J-543	733.42	Zone 1	0.0	888.28	67
1643	J-653	729.91	Zone 1	11.0	883.48	66
1395	J-558	733.64	Zone 1	11.0	888.36	67
258	J-60	728.06	Zone 1	11.0	885.02	68
1337	J-531	731.91	Zone 1	11.0	890.82	69
1849	J-724	729.68	Zone 1	11.0	883.59	67
1360	J-541	733.03	Zone 1	11.0	888.29	67
359	J-109	733.88	Zone 1	11.0	886.01	66
1389	J-556	732.94	Zone 1	11.0	888.33	67
1816	J-712	730.93	Zone 1	11.0	889.31	69
792	J-313	729.08	Zone 1	11.0	883.5	67
1829	J-718	729.05	Zone 1	11.0	883.47	67
268	J-66	733.52	Zone 1	22.0	886.56	66
1614	J-641	727.93	Zone 1	11.0	886.32	69
1348	J-536	862.49	Zone 3	6.0	1,051.01	82
1047	J-412	730.47	Zone 1	11.0	889.92	69
255	J-59	730.35	Zone 1	0.0	890.01	69
1361	J-542	731.85	Zone 1	11.0	888.28	68
1207	J-477	728.36	Zone 1	11.0	883.5	67
1806	J-709	732.65	Zone 1	11.0	885.97	66
1201	J-473	728.22	Zone 1	11.0	883.53	67
4603	J-1106	727.57	<None>	0.0	881.12	66
538	J-197	725.71	Zone 1	11.0	884.96	69
1338	J-532	729.5	Zone 1	11.0	890.82	70
153	J-21	727.22	Zone 1	11.0	883.46	68
1204	J-475	727.2	Zone 1	11.0	883.48	68
570	J-214	727.11	Zone 1	11.0	883.46	68
152	J-20	727.1	Zone 1	11.0	883.46	68
1644	J-654	726.91	Zone 1	11.0	883.49	68
385	J-123	725.77	Zone 1	0.0	885.82	69
602	J-226	725.03	Zone 1	11.0	884.9	69
365	J-113	725.49	Zone 1	11.0	886.32	70
537	J-196	724.53	Zone 1	11.0	884.93	69
1527	J-606	728.7	Zone 1	11.0	891.26	70
386	J-124	725.08	Zone 1	11.0	885.82	70
364	J-112	725.35	Zone 1	11.0	886.57	70
1504	J-598	728.32	Zone 1	11.0	891.22	70
249	J-56	725.78	Zone 1	11.0	883.48	68
1458	J-580	724.55	Zone 1	11.0	885.82	70
160	J-24	756	Zone 1	0.0	906.43	65
250	J-57	725.34	Zone 1	11.0	883.48	68
358	J-108	729.69	Zone 1	11.0	886.03	68
1232	J-489	726.81	Zone 1	11.0	891.73	71
275	J-70	724.64	Zone 1	11.0	883.46	69
1419	J-565	729.09	Zone 1	11.0	886.02	68
276	J-71	724.33	Zone 1	11.0	883.46	69
727	J-283	726.93	Zone 1	11.0	891.82	71
1850	J-725	724.03	Zone 1	11.0	883.46	69
1075	J-422	728.45	Zone 1	11.0	885.96	68

Scenario: 2043 PHD

ID	Label	Elevation (ft)	Zone	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
4582	J-1101	725	Zone 1	0.0	882.61	68
95	J-1	723.56	Zone 1	11.0	883.47	69
1888	J-740	721.77	Zone 1	11.0	885.56	71
1225	J-486	723.27	Zone 1	11.0	883.47	69
426	J-140	723.08	Zone 1	11.0	883.47	69
143	J-14	727.62	Zone 1	11.0	886.34	69
144	J-15	727.56	Zone 1	11.0	886.21	69
441	J-149	726.26	Zone 1	11.0	892.3	72
1584	J-629	727.33	Zone 1	11.0	886	69
1716	J-681	720.47	Zone 1	11.0	878.62	68
1775	J-699	719.81	Zone 1	11.0	884.31	71
1535	J-609	720.62	Zone 1	11.0	884.87	71
1572	J-625	719.38	Zone 1	0.0	878.44	69
1895	J-744	725.99	Zone 1	11.0	885.96	69
1909	J-750	725.69	Zone 1	11.0	885.96	69
440	J-148	725.39	Zone 1	11.0	894.04	73
1603	J-638	717.29	Zone 1	11.0	877.39	69
1632	J-648	717.57	Zone 1	11.0	878.44	70
1631	J-647	717.24	Zone 1	11.0	878.44	70
1595	J-634	716.59	Zone 1	11.0	877.25	70
1074	J-421	723.86	Zone 1	11.0	885.96	70
1805	J-708	723.7	Zone 1	11.0	885.97	70
1247	J-496	723.55	Zone 1	11.0	885.97	70
841	J-328	723.19	Zone 1	11.0	885.97	70
842	J-329	723.06	Zone 1	11.0	885.97	70
1894	J-743	723.06	Zone 1	11.0	885.97	70
944	J-373	722.76	Zone 1	11.0	885.97	71
548	J-203	722.73	Zone 1	11.0	885.96	71
943	J-372	722.4	Zone 1	11.0	885.97	71
1432	J-571	715.43	Zone 1	11.0	878.17	70
1727	J-684	720.84	Zone 1	11.0	892.3	74
704	J-274	723	Zone 1	0.0	895.7	75
1433	J-572	714.74	Zone 1	11.0	878.16	71
1601	J-637	712.17	Zone 1	11.0	876.67	71
929	J-366	712.34	Zone 1	11.0	879.01	72
4580	J-1100	715	Zone 1	0.0	883.5	73
4326	J-780	708.6	Zone 1	0.0	877.12	73
390	J-126	709.87	Zone 1	11.0	885.56	76
1536	J-610	708.66	Zone 1	11.0	883.89	76
601	J-225	708.62	Zone 1	11.0	884.88	76
1590	J-631	705.33	Zone 1	11.0	876.33	74
1589	J-630	703.57	Zone 1	11.0	874.99	74
4284	J-775	703.3	Zone 1	11.0	876.54	75
928	J-365	703.38	Zone 1	11.0	879.02	76
1594	J-633	702.9	Zone 1	11.0	877.37	75
206	J-35	700.53	Zone 1	11.0	868.9	73
157	J-22	700.89	Zone 1	11.0	870.34	73
188	J-31	693.32	Zone 1	11.0	855.04	70
193	J-32	693.42	Zone 1	0.0	857	71
1936	J-757	690	Zone 1	1167.0	845.74	67
198	J-33	690	Zone 1	11.0	846.66	68
166	J-25	690	Zone 1	11.0	848.7	69
176	J-27	692.53	Zone 1	11.0	859.5	72
171	J-26	690	Zone 1	11.0	850.78	70
203	J-34	692.77	Zone 1	11.0	861.8	73
185	J-30	693.31	Zone 1	11.0	864.13	74
179	J-28	690	Zone 1	11.0	852.89	70
182	J-29	693.61	Zone 1	11.0	866.5	75
1516	J-601	690.83	Zone 1	11.0	857.47	72
1515	J-600	688.56	Zone 1	11.0	857.47	73
1515	J-600	688.56	Zone 1	(N/A)	(N/A)	(N/A)

City of SUNNYSIDE WASHINGTON

19

City of Sunnyside Hydrant Flow Testing

HLA Engineering and Land Surveying, Inc.

City of SUNNYSIDE WASHINGTON

PUBLIC WORKS DEPARTMENT
WATER DIVISION

818 E. Edison Avenue, Sunnyside, WA 98944
Phone 509-836-6311 Fax 509-836-6383
www.sunnyside-wa.gov

Date: 7-21-23 Name of Tester: Jesus Valencia

Location of Hydrant: South side of Cinemas

Hydrant #1: H-23 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 45 psi Residual Pressure: 95 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1130 gpm

Location of Hydrant: Sun Valley Elementry

Hydrant #1: A-151 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 20 psi Residual Pressure: 50 psi

Coefficient: 0.9

Orifice Size: _____ inch Flow: 750 gpm

Location of Hydrant: Fair view & 4th st

Hydrant #1: A-29 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 20 psi Residual Pressure: 70 psi

Coefficient: 0.9

Orifice Size: _____ inch Flow: 750 gpm

Location of Hydrant: Adult Family Home

Hydrant #1: D-40 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 55 psi Residual Pressure: 96 psi

Coefficient: 0.9

Orifice Size: _____ inch Flow: 1190 gpm

City of SUNNYSIDE WASHINGTON.

PUBLIC WORKS DEPARTMENT
WATER DIVISION

818 E. Edison Avenue, Sunnyside, WA 98944
Phone 509-836-6311 Fax 509-836-6383
www.sunnyside-wa.gov

Date: 7-27-23

Name of Tester: Jose C / Jesus U

Location of Hydrant: N of mclean RD .96 Residual

Hydrant #1: G-36 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 80 psi Residual Pressure: 35 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1000 gpm

Location of Hydrant: Midvale - Duffy RD .56 Residual

Hydrant #1: G-61 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 95 psi Residual Pressure: 40 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1060 gpm

Location of Hydrant: Port Drive .76 Residual

Hydrant #1: G-77 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 90 psi Residual Pressure: 40 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1060 gpm

Location of Hydrant: SW corner Yakima circle .91 Residual

Hydrant #1: G-76 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 95 psi Residual Pressure: 45 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1030 gpm

City of SUNNYSIDE WASHINGTON

PUBLIC WORKS DEPARTMENT
WATER DIVISION

818 E. Edison Avenue, Sunnyside, WA 98944
Phone 509-836-6311 Fax 509-836-6383
www.sunnyside-wa.gov

Date: 7-27-23

Name of Tester: Jose C / Jesus V

Location of Hydrant: Denny's Parking Lot

1.31 Residual

Hydrant #: H-28

Static Pressure: 90 psi

Residual Pressure: 20 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch

Flow: 750 gpm

Location of Hydrant: Behind Dollar Tree

1.35 Residual

Hydrant #: A-68

Static Pressure: 85 psi

Residual Pressure: 40 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch

Flow: 1130 gpm

Location of Hydrant: Sunstad end of morgan Rd

1.37 Residual

Hydrant #: A-113

Static Pressure: 75 psi

Residual Pressure: 35 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch

Flow: 1000 gpm

Location of Hydrant: Sheller / morgan Rd

. Residual

Hydrant #: A-108

Static Pressure: 75 psi

Residual Pressure: 30 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch

Flow: 1000 gpm

City of SUNNYSIDE WASHINGTON

PUBLIC WORKS DEPARTMENT
WATER DIVISION

818 E. Edison Avenue, Sunnyside, WA 98944
Phone 509-836-6311 Fax 509-836-6383
www.sunnyside-wa.gov

Date: 7-27-23

Name of Tester: Jesus V / Jose C

Location of Hydrant: Country Gals SW corner .72 Residual

Hydrant #1: New Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 65 psi Residual Pressure: 35 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1000 gpm

Location of Hydrant: W Grandview / Country View .72 Residual

Hydrant #1: F-88 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 65 psi Residual Pressure: 30 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 920 gpm

Location of Hydrant: _____ .70 Residual

Hydrant #1: F-94 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 65 psi Residual Pressure: under 10 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: under 530 gpm

Location of Hydrant: WVH Last on Heading W .80 Residual

Hydrant #1: D-57 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 80 psi Residual Pressure: 35 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1000 gpm

City of SUNNYSIDE WASHINGTON

PUBLIC WORKS DEPARTMENT
WATER DIVISION

818 E. Edison Avenue, Sunnyside, WA 98944
Phone 509-836-6311 Fax 509-836-6383
www.sunnyside-wa.gov

Date: 7-27-23

Name of Tester: Jose C / Jesus V

Location of Hydrant: street Dept. 1.07 Residual

Hydrant #1: B-55 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 80 psi Residual Pressure: 45 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1130 gpm

Location of Hydrant: Behind wood-mart 1,10 Residual

Hydrant #1: C-106 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 85 psi Residual Pressure: 40 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1060 gpm

Location of Hydrant: sws of school chief Kemiakin 1,78 Residual

Hydrant #1: C-113 Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 80 psi Residual Pressure: 35 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1000 gpm

Location of Hydrant: Back of High school By new Track .63 Residual

Hydrant #1: _____ Hydrant #2: _____ Hydrant #3: _____

Static Pressure: 85 psi Residual Pressure: 35 psi

Coefficient: 0.9

Orifice Size: 5 1/4 inch Flow: 1000 gpm

City of SUNNYSIDE WASHINGTON

20

City of Sunnyside Design and Construction Standards

HLA Engineering and Land Surveying, Inc.

CITY OF SUNNYSIDE

DESIGN AND CONSTRUCTION STANDARDS
AND
SPECIFICATIONS FOR
PUBLIC WORKS IMPROVEMENTS

JANUARY 2018

CITY OF SUNNYSIDE

DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS FOR PUBLIC WORKS IMPROVEMENTS

City of Sunnyside
819 East Edison Avenue
Sunnyside, WA 98944

(509) 837-5206

JANUARY 2018

CHAPTER 4 - WATER SYSTEM IMPROVEMENTS

GENERAL REQUIREMENTS FOR WATER SYSTEM IMPROVEMENTS

All extensions and additions to the City of Sunnyside's domestic water system shall conform to the Design and Construction Standards of the City of Sunnyside and the Washington State Department of Health (DOH) as follows:

All new lots and developments shall be served by a public domestic water supply line to be maintained by the City of Sunnyside and located adjacent to the lot or development site. The water supply line shall be capable of providing sufficient flow and pressure to satisfy the fire flow and domestic service requirements of the proposed lots and development requirements.

Water lines shall be extended by the Developer to the point where the adjoining property owner's responsibility for further extension begins. This typically requires an extension across the entire frontage of the property to the property line of the adjoining owner. In some cases, it will require dedication of an easement and a line extension across the property or extension across two or more sides of the developing property. Extensions will be consistent with and implement the City's adopted Water System Plan.

Cover over new water mains shall be a minimum of 42" and a maximum of 72". All new public domestic water mains shall be a minimum diameter of 8 inches. Fire hydrant runs less than 50 feet from the water main to the fire hydrant shall be a minimum of 6 inches.

Larger public water mains may be required depending upon fire flow requirements as determined by the City of Sunnyside's Public Works Director, Fire Chief, or City Engineer.

Water main oversizing, above that required for the particular development being submitted, may be required by the City of Sunnyside to be installed for future extension. The cost of the materials only for the oversizing shall be reimbursed to the Developer by the City. The Developer shall submit actual material invoices showing the actual cost of the materials furnished and the cost of the same materials of the size required for the development.

All domestic water mains shall be looped, where possible. Temporary dead-end mains over 300 feet in length will only be allowed where future water main looping via public right of way will be assured. No permanent dead-end water mains will be allowed to be part of the City of Sunnyside's public water system.

Permanent dead-end water mains may become private water mains owned and maintained by the Developer. All dead-end water mains shall be isolated from the public water main with a reduced pressure double check valve assembly and vault furnished and installed by the Developer to City of Sunnyside standards for cross-connection control.

Maximum valve spacing in public water mains will be 1,000 linear feet. Valves will be furnished and installed on all legs of new water main intersections. Valve operating nut extensions approved by the City will be required on valves where the operating nut is deeper than 36 inches below finished grade.

All new water services shall be a minimum of 1-inch diameter and all new water meters shall be a minimum of 1 inch, 3/4 inch for manufactured homes, furnished and installed by the City of Sunnyside, at the Developer's expense. For services up to 2-inch diameter, the City will furnish and install all water service components from the water main to the property line

including service saddle, corporation stop, service tap, service pipe, meter setter, and meter box, all at the Developer's expense. Only one meter shall be served from each main tap. For services 2 1/2 inch and larger the Developer shall furnish and install all water service components from the watermain to the property. All work must be observed by the Public Works Department or their representative. All work not inspected will not be accepted. 48 hour minimum notice is required.

All live taps of water mains for new water main extensions or hydrants shall be performed by the Developer's representative (with Public Works Director's prior approval) using a full circle stainless steel tapping sleeve with gate valve and paid for by the Developer. No cut-in tees will be allowed. The Developer shall coordinate with the Public Works Director for witnessing the live tap.

Where existing customer water services are galvanized, the Contractor shall thread the service and install a dielectric union between the copper and galvanized connection.

Where the existing service to the home is found to be deteriorated, the owner shall be notified in writing by the Contractor of the condition of the existing service and the limits of responsibilities as noted herein. The water service pipe shall be left exposed until the owner is shown the condition of the pipe. The Contractor shall then carefully bed and backfill the connection. The Contractor shall be fully responsible for al leaks in the existing owner service within five feet of his work connection for a period of one year and within 20 feet for a period of five days.

Minimum 2-inch air and vacuum release valves shall be furnished and installed at high points in the system.

Maximum spacing of fire hydrants shall be 350 feet. Additional hydrants may be required to protect structures as determined by the Fire Chief and Public Works Director. Additional fire hydrants required on a site may require a looped, on-site fire hydrant main. Easements will be provided for all on-site, public, looped water mains, in accordance with CHAPTER 1, Section 11.

Water and non-potable pipelines shall be separated in accordance with Section C1-9.1 of the *Criteria for Sewage Works Design, August 2008,* by the Washington State Department of Ecology.

The design of water mains and appurtenances is subject to review and approval by the City of Sunnyside Public Works Director. The Public Works Director may, at his/her discretion, adjust these Design and Construction Standards as necessary to facilitate installation of water lines and appurtenances for the health, safety, and protection of the general public.

All double detector check valve and backflow assemblies shall conform to City of Sunnyside standards. Initial and annual testing will be required.

SPECIAL PROVISIONS FOR WATER SYSTEMS

The following sections of the WSDOT Standard Specifications have been amended or supplemented as described below and apply to the construction of public works water system improvements within the City of Sunnyside.

7-09 WATER MAINS

7-09.2 Materials

Pipe for main line approved for use shall be as follows:

Pipe for Main Line:

Ductile Iron Pipe
C-900 PVC Pipe

Supplement this section with the following:

Ductile Iron Pipe: Ductile iron pipe shall conform to the requirements of Section 9-30.1(1) of the Standard Specifications, except that it shall be Standard Thickness Class 52. Joints shall be rubber gasket, push-on type (Tyton Joint). Fittings shall be mechanical joint or flanged, as shown on the Plans, and shall conform to Section 9-30.2(1) of the Standard Specifications. Grip rings or approved equal required.

Fittings for Main Lines:

Connection Couplings: Couplings, either transition or straight couplings, shall be compression type flexible couplings conforming to Section 9-30.2(7) of the Standard Specifications.

Aggregates:

Gravel Backfill for Pipe Zone: Pipe zone material for rigid pipes shall be Crushed Surfacing Base Course meeting the requirements of Section 9-03.9(3).

Trench Backfill: Street crossing trenches and other locations as directed by the City of Sunnyside shall be backfilled full depth with imported select backfill. Imported select backfill shall be crushed surfacing base course, placed and compacted in layers.

7-09.3 Construction Requirements

7-09.3(5) Grade and Alignment

Replace the first sentence of the third paragraph with the following:

The depth of trenching for water mains shall be such to provide a minimum cover of 42 inches and a maximum cover of 72 inches, unless otherwise approved by the Public Works Director.

7-09.3(9) Bedding the Pipe

Supplement this section with the following:

All construction work shall be inspected by the City or its representative before pipe installation and backfilling. Imported pipe zone bedding/backfill for pipes shall be in accordance with Section 7-09.2 above, placed and compacted per the Standard Specifications. Bedding shall be placed under all pipe.

7-09.3(10) Backfilling Trenches

Supplement this section with the following:

Street crossing trenches, and other locations as directed, shall have the trench backfilled full depth with Imported Select Backfill. The Public Works Director may require the use of Controlled Density Fill (CDF) for trench backfill in certain circumstances. The requirements for CDF are set forth in CHAPTER 7, Section 8-30 of these Special Provisions.

7-09.3(11) Compaction of Backfill

Delete the first paragraph and supplement this section with the following:

Mechanical compaction shall be required for all trenches. The Contractor is hereby cautioned that time extensions shall not be granted due to unstable trench backfill conditions caused by excessive watering. The Contractor shall be responsible for correcting such conditions caused by their own construction activities.

The density of the compacted material shall be at least 95% of the maximum density as determined by ASTM D 698 Tests (Standard Proctor). The Contractor shall notify the City when they are ready for in-place density tests of the trench line. Density tests shall be taken at various depths in the trench. The Contractor shall provide a backhoe and operator for the excavation and backfill of test holes. All costs associated with testing shall be the responsibility of the Contractor. Placement of courses of aggregate shall not proceed until density requirements have been met.

The first 500 feet of trench backfill operations shall be considered a test section for the Contractor to demonstrate their backfilling and compaction techniques. The Contractor shall notify the City at least 3 working days prior to beginning trench excavation and backfill operations and the Contractor will arrange for in-place density tests to be taken on the completed test section in accordance with the above requirements. No further trenching will be allowed until the specified density is achieved in the test section. Passing in-place density tests in the test section will not relieve the Contractor from achieving the specified densities throughout the project.

7-09.3(12)A Locating Wire (New Section)

The following new section shall be added to the Standard Specifications:

A continuous solid copper locating wire shall be placed along the top of all non-ferrous water pipe. This wire shall be secured to the top of the pipe at maximum 10-foot intervals using 6-inch strips of 2-inch wide duct tape. All splices shall be tied, electrically continuous, and made waterproof. Access to terminal ends of the locating wire shall be made at locating wire boxes, per the details shown on the Drawings. The result of this installation shall be a continuous wire circuit electrically isolated from ground. The Contractor shall be responsible for testing continuity and for testing isolation from ground in the wire after all work has been completed on the test section. The Contractor is advised to do intermediate testing on their own after backfilling operations and prior to surface restoration work to be sure continuity is maintained. If there is a break or defect in the wire, it shall be the Contractor's responsibility to locate and repair the defect. The continuity of the location wire shall be tested from one test load point to the next by use of a temporary wire laid between test points in-line with an ohmmeter. Resistance shall be measured with an approved ohmmeter that has been properly calibrated. The continuity of a test section will be accepted if the resistance of the

test section does not exceed 5 ohms per 500 feet of location wire being tested. Isolation from ground shall be measured with a megohmmeter and shall be a minimum of 20 megohms for any section of location wire tested. The City shall witness the acceptance test.

7-09.3(19)A Connections to Existing Mains

Supplement this section with the following:

New water mains shall be tested, flushed, and disinfected per applicable DOH requirements with passing results, prior to making connection to existing main and being placed into operation.

No existing line valves shall be closed without permission by the City of Sunnyside. In no case shall any existing water main valve be closed for a period of greater than eight (8) hours, unless otherwise approved by the Public Works Director.

7-09.3(23) Hydrostatic Pressure Test

Replace the first sentence with the following:

All water mains and appurtenances shall be tested under a minimum hydrostatic pressure of 150 psi for a sixty (60) minute period.

7-12 VALVES FOR WATER MAINS

7-12.2 Materials

Supplement this section with the following:

Gate Valves: All valves sizes 2 1/2-inch through 10-inch shall be gate valves manufactured in the U.S. and shall conform to the latest revision of AWWA Resilient Seated Gate Valves Standard C509 and AWWA C104.

All gate valves shall have non-rising stems, open counterclockwise, and shall be provided with a 2-inch square AWWA operating nut. Gate valves 4-inch and larger shall have flanged and/or mechanical joint connections, as shown on the Plans. Stuffing box shall be O-ring type.

The Contractor shall replace all valve bonnets, buts, and bolts with approved stainless nuts and bolts prior to installation. The valve body and bonnet shall be epoxy coated inside and out.

Butterfly Valves: All valves sizes 12-inch and larger shall be butterfly valves manufactured in the U.S. and suitable for direct burial and shall be rubber seated and conform to the latest revision of AWWA Standard C504 Class 150B and C104.

Valve operators shall be worm gear type, sealed, gasketed, and lubricated for underground service. All valves shall open counter-clockwise and shall be provided with a 2-inch square AWWA operating nut.

Valves shall have mechanical joint and/or flanged connections as shown on the Plans and shall be of the same size as the line on which they are located. Valve shafts shall be a one-piece unit extending full size through the valve disc and valve bearings, with minimum shaft

diameter as specified in AWWA C 504 Class 150B. Valve operators shall be worm gear type, sealed, gasketed, and lubricated for underground service. All valves shall open counter-clockwise and shall be provided with a 2-inch operating nut, unless otherwise specified.

The Contractor shall replace all valve bonnets, buts, and bolts with approved stainless nuts and bolts prior to installation.

Tapping Sleeve and Valve Assemblies: Tapping sleeves shall be full circle, Romac Stainless Steel Tapping Sleeve (SST) with Ductile Iron Flanged Outlet, or approved equal, conforming to the latest AWWA Standard C223.

Valve Boxes shall be two-piece adjustable. Valve boxes and covers shall be "Tyler No. 6855" series.

7-12.3 Construction Requirements

Supplement this section with the following:

Valves: Upon completion of all work in connection with this Contract, the Developer/Contractor shall contact the City of Sunnyside Public Works for opening water valves. Valves shall only be operated by City Public Works staff.

Valve Boxes: Valve boxes should be set to position during backfilling operations so they will be in a vertically centered alignment to the valve operating stem. The top of the box will be at final grade.

The Contractor shall adjust all water valve boxes to the final grade of the surrounding area including new concrete sidewalk, asphalt paving, gravel surfacing, or topsoil surfacing, in accordance with the details shown on the Drawings.

Valve boxes and covers shall be placed with the valve cover ears (or tabs) oriented parallel to the direction of the water main or lateral the valve serves.

The Contractor shall keep the valve boxes free from debris caused by the construction activities. All valve boxes will be inspected during final walk-thru to verify that the valve box is plumb and that the valve wrench can be placed on the operating nut.

7-14 HYDRANTS

7-14.2 Materials

Supplement this section with the following:

The City of Sunnyside accepts fire hydrants of the following manufacturers, providing the hydrants conform to the City's technical specifications for fire hydrants:

M&H 129S

All hydrants shall have a Main Valve Opening (MVO) of 5-1/4" and one port with a 5" Storz Quick Coupling (with cap) and two (2) 2-½" diameter ports. Threads on all ports shall be National Standard Thread.

Fire hydrants shall be painted with two coats of high visibility yellow paint.

NON-FREEZE YARD HYDRANT

Non-freeze yard hydrants shall be of the type shown on the Plans, cast iron construction, brass hardware, threaded hose connection, with seat that can be replaced without removing the hydrant from the ground. Yard Hydrants shall be Zurn Z-1395, or equal. Provide 3/4-inch hose connection and 3-foot depth of bury.

7-14.3(1) Setting Hydrants

Delete the first and second paragraphs and replace with the following:

The hydrant shoe shall be set on a concrete block base 12" x 12" x 6" thick, which has been placed on undisturbed earth. Around the base of the hydrant, the Contractor shall place 0.5 cubic yards of washed drain rock ranging in size from 3/4" to 1-1/2", to allow free drainage of the hydrant. The drain rock shall be completely covered with construction geotextile fabric as directed by the City.

The Contractor shall be responsible for verifying the hydrant flange elevations and shall provide additional depth-of-bury hydrants or hydrant extensions to achieve a flange elevation of 3” above the back of curb, sidewalk, or finished grade, as shown on the City’s Standard Detail.

Fire hydrants shall be painted with two coats of high visibility yellow paint.

7-14.3(2) Hydrant Connections

Replace this section with the following:

Hydrant runs of less than 50 feet shall be connected to the main with 6-inch minimum diameter water main. Each hydrant lateral shall include an auxiliary gate valve and valve box.

7-14.3(2)A Hydrant Restraints

Replace this section with the following:

All hydrants shall be connected to the water main as shown on the City’s Standard Detail.

7-14.3(2)C Hydrant Guard Posts

Replace this section with the following:

Unless waived by the Public Works Director, Four (4) 6-inch diameter Sch. 40 steel bollards shall be installed at all hydrant locations. Hydrant guard posts shall be painted yellow as shown on the City’s Standard Detail.

7-14.3(2)D Hydrant Concrete Slab (New Section)

All hydrants shall be finished with a 4’ square x 4” deep concrete slab flush with the ground surface, as shown on the standard details. Concrete shall meet the requirements of Section 8-14 for sidewalks.

7-15 SERVICE CONNECTIONS

7-15.1 Description

Replace this section with the following:

This work consists of the relocation of existing water meters and water meter boxes, where necessary, and the installation of new saddles, corporation stops, service pipe, water meter box, meter setter, and meter stops as shown on the Plans.

7-15.2 Materials

Supplement this section with the following:

Saddles: New service saddles shall be Romac Style 202NS.

Corporation Stops: New corporation stops shall be Mueller type with quick joint connection, no lead, for service line size.

Service Pipe: New service pipe shall be Type 'K' copper.

Locating Wire: Locate wire shall meet the requirements of Section 7-09.3(12)A and be continuous from the water main to the meter box. The locating wire shall be

Double Check Valve: New double check valve assembly for 2-inch service shall be Wilkins 950 XLT.

Meter Boxes: New meter boxes shall be:

Mid States Plastics, Inc. – BCF-173018B for ¾ inch and 1 inch meters, with ductile iron cover (for vehicular traffic areas) and heavy duty plastic covers (for non-vehicular areas), and ductile iron with hinge access door;

Carson Super Jumbo – model 1730-18 for 1 ½" and 2" meters, ductile iron cover (for vehicular traffic areas) and heavy duty plastic covers (for non-vehicular areas), and ductile iron with hinge access door.

Pipe Bedding and Backfill: Pipe bedding and select backfill shall be utilized for trench backfill as directed by the City in accordance with Section 7-09.2 of the Special Provisions.

7-15.3 Construction Requirements

Supplement this section with the following:

The Contractor shall set the water meter box to the finished grade of the area. The Contractor will be required to reset the meter box if it is not at finished grade at the completion of the project. The completed water service shall be tested at system operating pressure by the Contractor and must show no signs of leakage.

Future water services shall be marked with an 18" long section of #4 rebar buried vertically with the top of the rebar set 6" below the finish surface, and a 6-foot 2"x4" post.

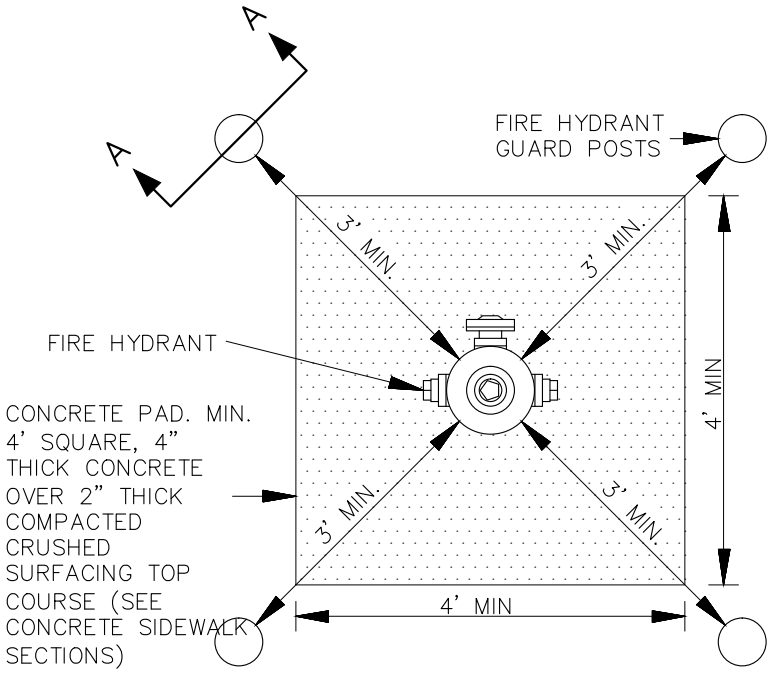
If the new water service is adjacent to curbing, a marker shall be installed in the curb accurately locating the alignment of the water serve.

APPENDIX B -

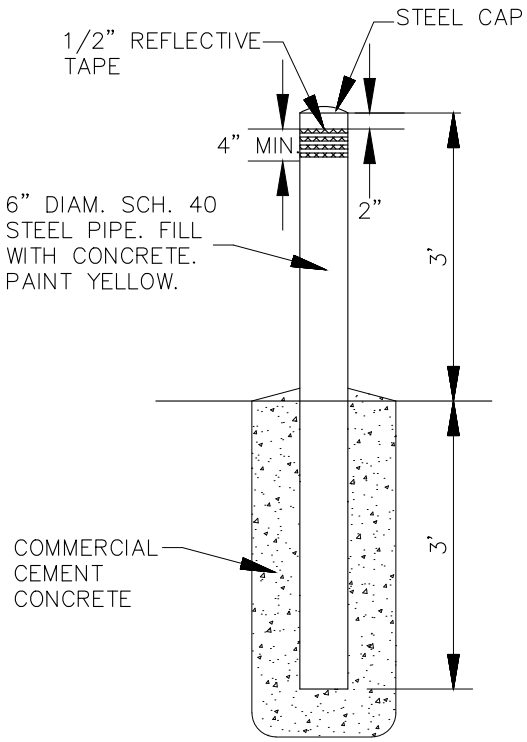
STANDARD DETAILS

SUNNYSIDE STANDARD DETAILS

D-1	Catch Basin Type 1/1L
D-2	Catch Basin Type 1/1L with Combination Inlet
D-3	Infiltration System
D-4	Oil/Water Separator
E-1	Conduit Trench
E-2	Conduit Entrance at Junction Box
E-3	Street Light
SS-1	Storm/Sewer Pipe Trench Section
SS-2	Manhole Type 1
SS-3	Manhole Safety Step
SS-4	Drop Connection
SS-5	Manhole Adjustment
SS-6	Sanitary Sewer Cleanout
SS-7	Side Sewer Connection
SS-8	Shallow Manhole Type 3
ST-1	Typical Arterial Roadway Section
ST-2	Typical Collector Arterial Roadway Section
ST-3	Typical Local Access Roadway Section
ST-4	Concrete Curb and Gutter
ST-5	Concrete Sidewalk Sections
ST-6	Concrete Sidewalk Ramp
ST-7	Sidewalk Jointing
ST-8	Asphalt Sidewalk Ramp
ST-9	Residential Driveway Approach
ST-10	Commercial Driveway Approach
ST-10A	Commercial Driveway Approach Alternate
ST-11	Trench Surfacing Repair
ST-12	Monument
ST-13	Cul-de-Sac Layout
ST-14	Permanent Bollard
ST-15	Corner Lot Vision Clearance
W-1	Water Main Trench Section
W-2	Fire Hydrant Assembly
W-3	Water Valve Box
W-4	Air Release/Vacuum Valve Assembly
W-5	Blow-Off Assembly
W-6	Concrete Thrust Blocking
W-7	New Water Service (1” or Smaller)
W-8	Irrigation Backflow Preventer
W-9	Hydrant Guard Posts and Concrete Pad



PLAN



SECTION A-A

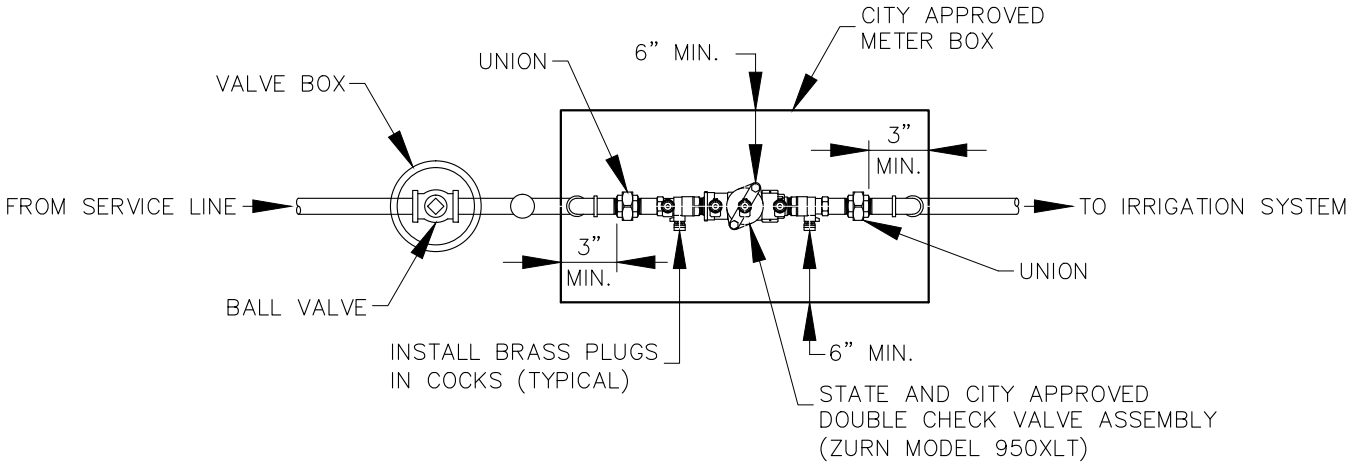
HYDRANT GUARD POSTS AND CONCRETE PAD

NOT TO SCALE

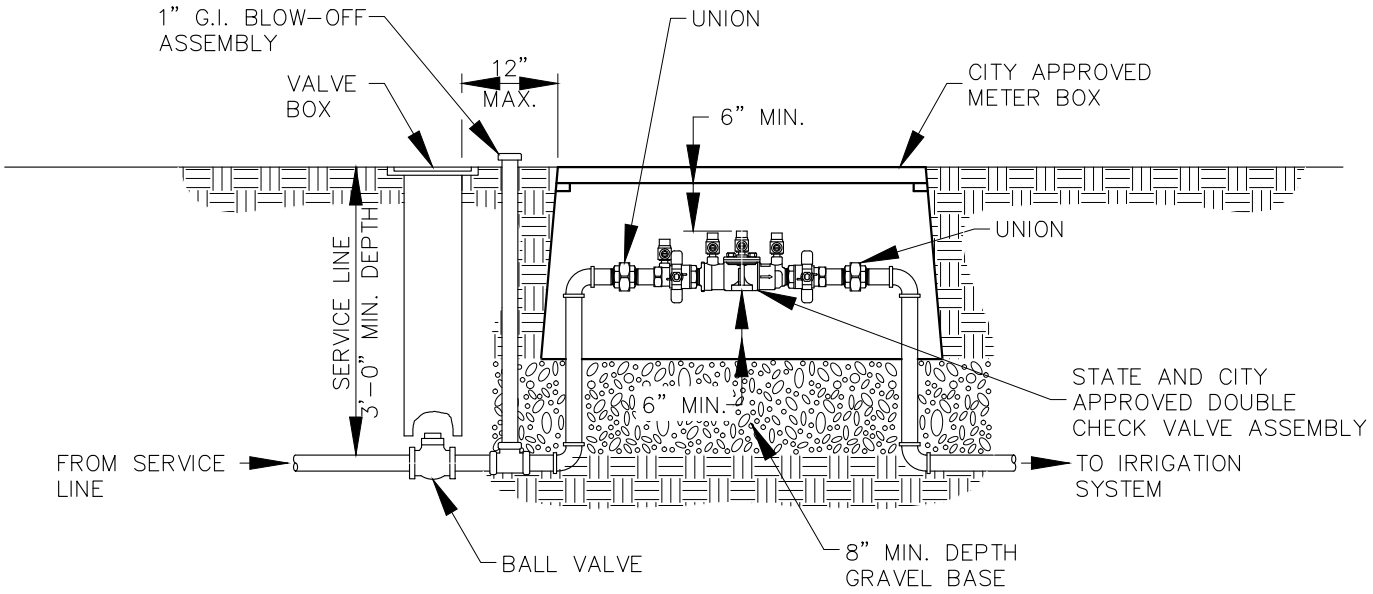
NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

ORIG.	02/17		
Revision	Date	Description	Appr

CITY OF SUNNYSIDE-STANDARD DETAIL	HYDRANT GUARD POSTS AND CONCRETE PAD	W-9



PLAN



ELEVATION

NOTES:

1. DOUBLE CHECK VALVE ASSEMBLY SHALL MEET REQUIREMENTS OF THE AWWA "ACCEPTED PROCEDURE AND PRACTICE IN CROSS-CONNECTION CONTROL" MANUAL.
2. DEVICES MUST BE ON STATE DEPT. OF SOCIAL AND HEALTH SERVICES LIST OF "APPROVED CROSS CONNECTION CONTROL DEVICES".
3. METER BOX SIZE SHOULD BE SIZED TO PROVIDE THE MINIMUM CLEARANCES SHOWN IN THE DETAIL.

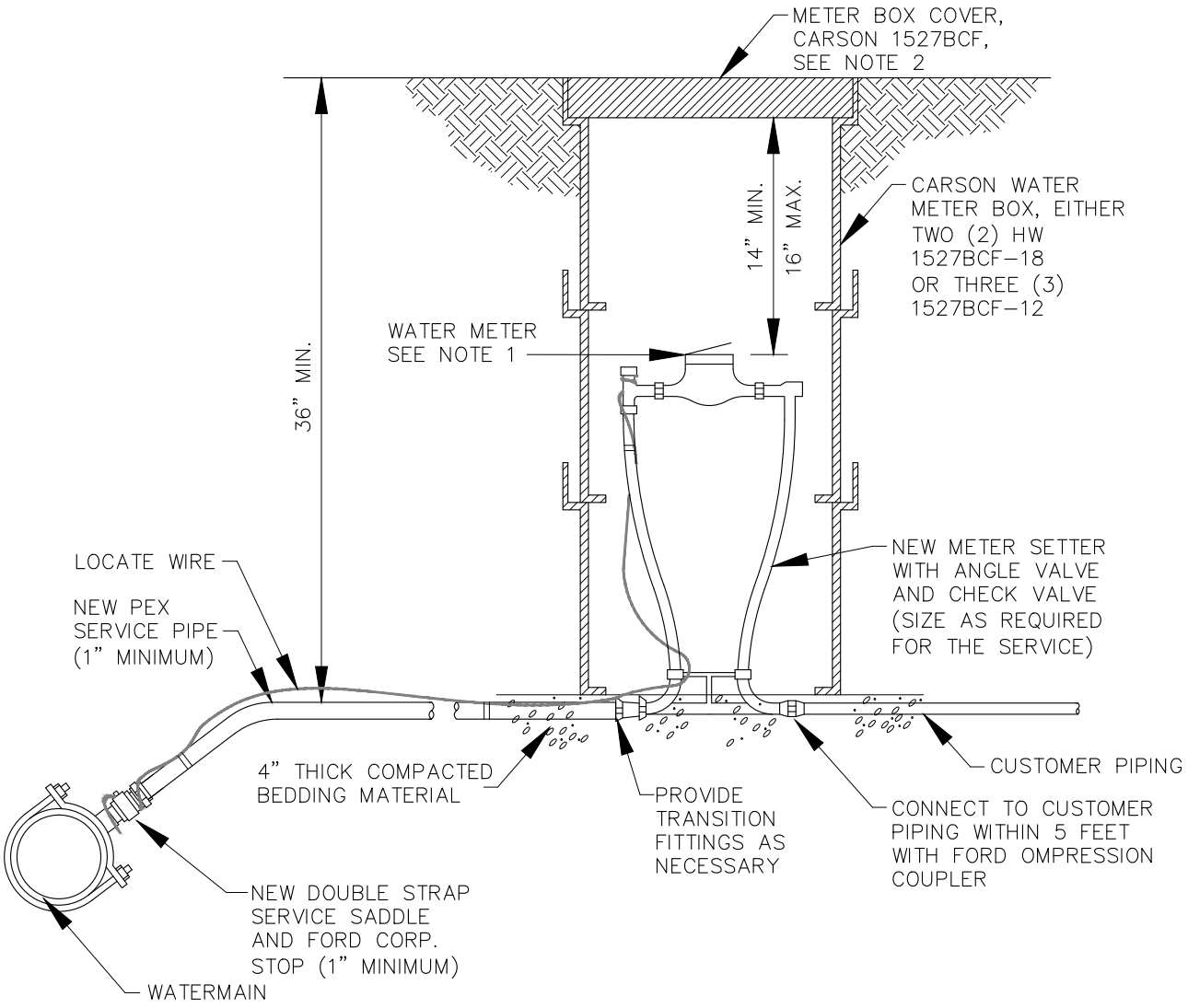
IRRIGATION BACKFLOW PREVENTER

NOT TO SCALE

NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

ORIG.	02/17		
Revision	Date	Description	Appr

CITY OF SUNNYSIDE-STANDARD DETAIL	IRRIGATION BACKFLOW PREVENTER	W-8



NOTES:
1. ALL NEW METERS WILL BE FURNISHED AND INSTALLED BY THE CITY, AT THE DEVELOPER'S EXPENSE.
2. METER BOX COVERS SHALL BE DUCTILE IRON FOR VEHICULAR TRAVEL AREAS AND SIDEWALKS AND HEAVY DUTY PLASTIC FOR NON–VEHICULAR AREAS.

NEW WATER SERVICE (1" OR SMALLER)

NOT TO SCALE

NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

ORIG.	02/17		
Revision	Date	Description	Appr

CITY OF SUNNYSIDE-STANDARD DETAIL	NEW WATER SERVICE (1" OR SMALLER)	W-7

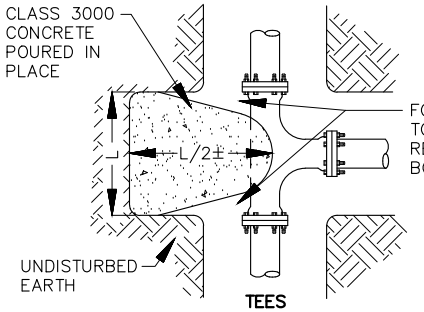
CITY OF SUNNYSIDE-STANDARD DETAIL

CONCRETE THRUST BLOCKING

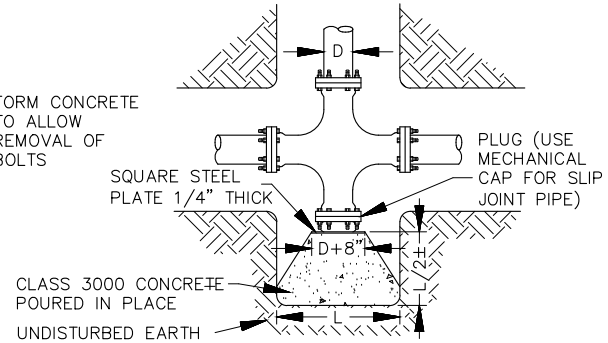
W-6

NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

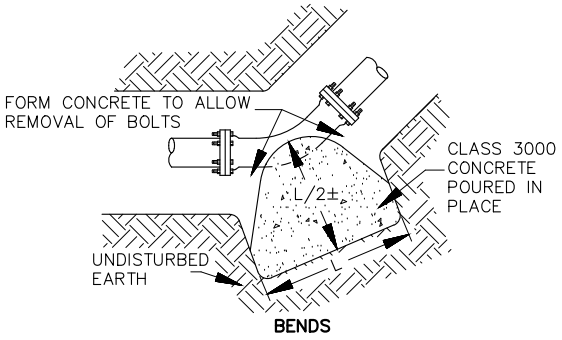
Revision	Date	Description	Appr
ORIG.	02/17		



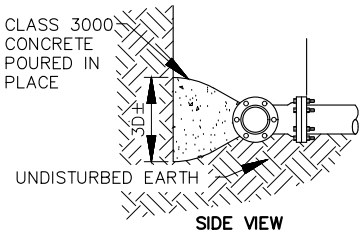
TEES



PLUGS AND CAPS

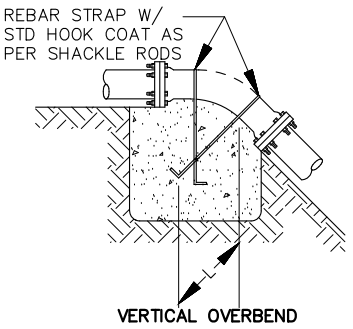


BENDS



SIDE VIEW
THIS VIEW TYPICAL OF ALL BLOCKING

NOTES:
1. D IS APPROXIMATE PIPE DIAMETER. THE ABOVE END AREAS ARE BASED ON AN ALLOWABLE SOIL BEARING PRESSURE OF 1500 PSF AND 250 PSI TEST PRESSURE.
2. DIMENSIONS LISTED DENOTE MINIMUM STANDARDS FOR SOIL AND TEST PRESSURES SHOWN. SHOULD TEST PRESSURE AND/OR SOIL CONDITIONS VARY. THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR SPECIAL THRUST BLOCK DESIGN.
3. ALL FITTINGS AND/OR PIPE MAKING DIRECT CONTACT WITH CONCRETE SHALL BE WRAPPED WITH 4 MIL POLYETHYLENE SHEETING PRIOR TO PLACEMENT OF CONCRETE.



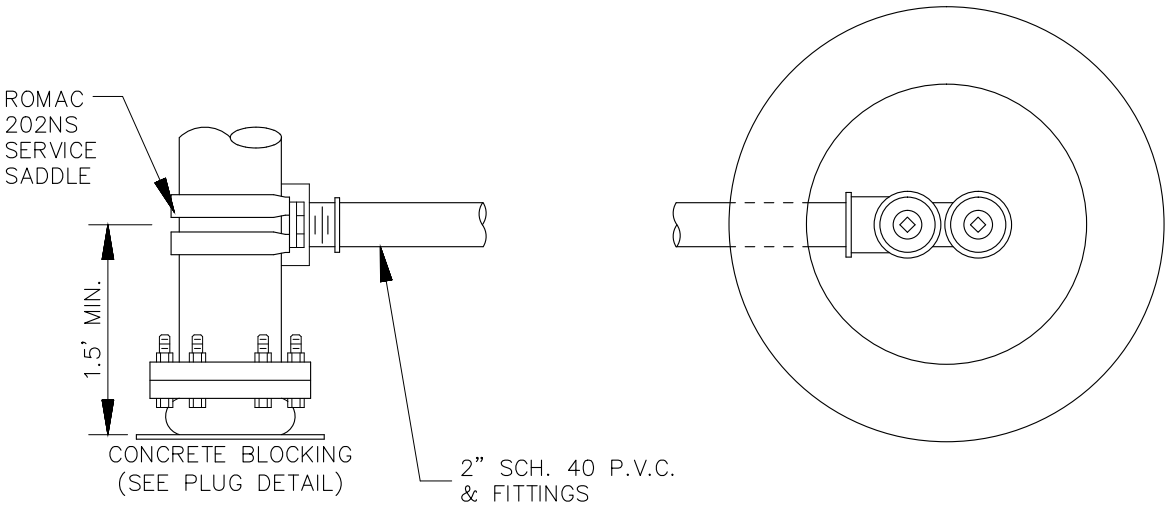
VERTICAL OVERBEND

MINIMUM END AREAS				
PIPE SIZE (D)	TEES & PLUGS	90° BENDS	45° BENDS	11¼° AND 22½° BENDS
6"	5.1 SQ FT	7.2 SQ FT	3.9 SQ FT	2.0 SQ FT
8"	8.8 SQ FT	12.4 SQ FT	6.7 SQ FT	3.4 SQ FT
10"	14.3 SQ FT	20.2 SQ FT	11.0 SQ FT	5.6 SQ FT
12"	20.4 SQ FT	28.9 SQ FT	15.7 SQ FT	7.9 SQ FT
14"	27.7 SQ FT	39.2 SQ FT	21.2 SQ FT	10.7 SQ FT
16"	35.8 SQ FT	51.2 SQ FT	27.5 SQ FT	13.9 SQ FT

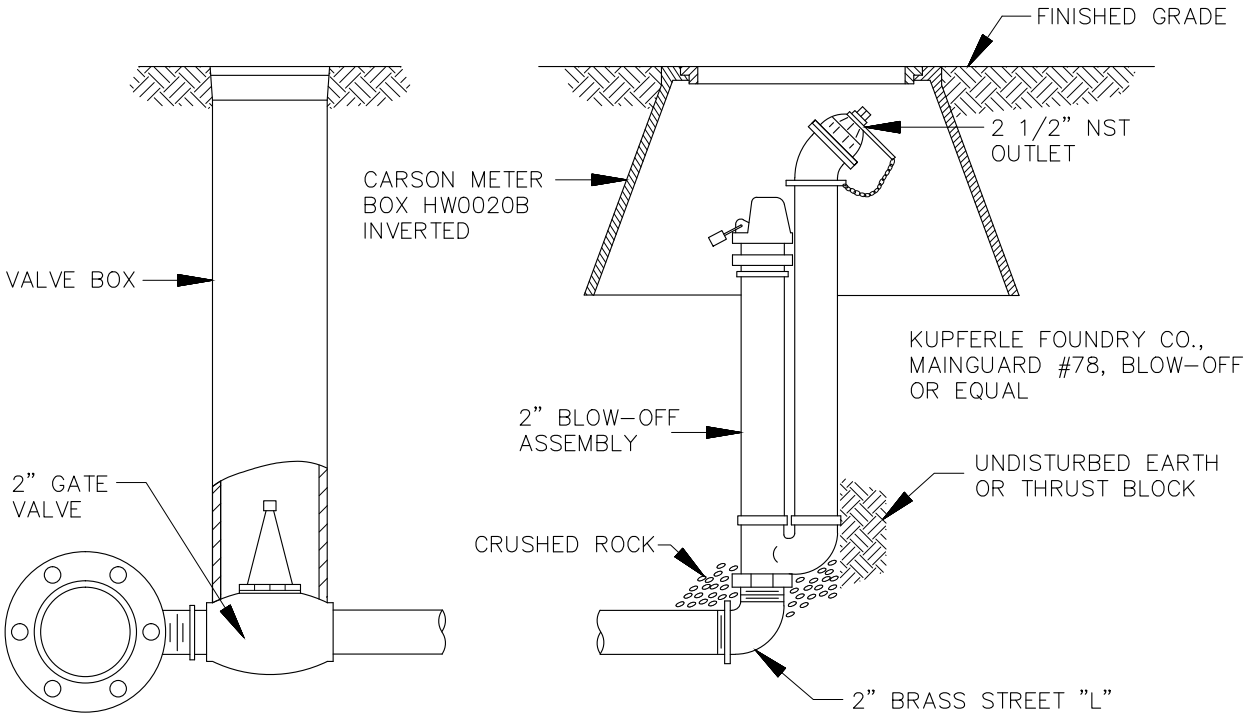
VERTICAL OVERBEND				
PIPE SIZE (D)	22½° BEND	45° BEND	REBAR SIZE	L
6"	20 CU FT	39 CU FT	#5	2.0 FT
8"	34 CU FT	67 CU FT	#5	2.0 FT
10"	56 CU FT	110 CU FT	#5	2.0 FT
12"	79 CU FT	157 CU FT	#6	2.5 FT
14"	107 CU FT	212 CU FT	#7	3.0 FT
16"	139 CU FT	275 CU FT	#9	4.0 FT

CONCRETE THRUST BLOCKING

NOT TO SCALE



TOP VIEW



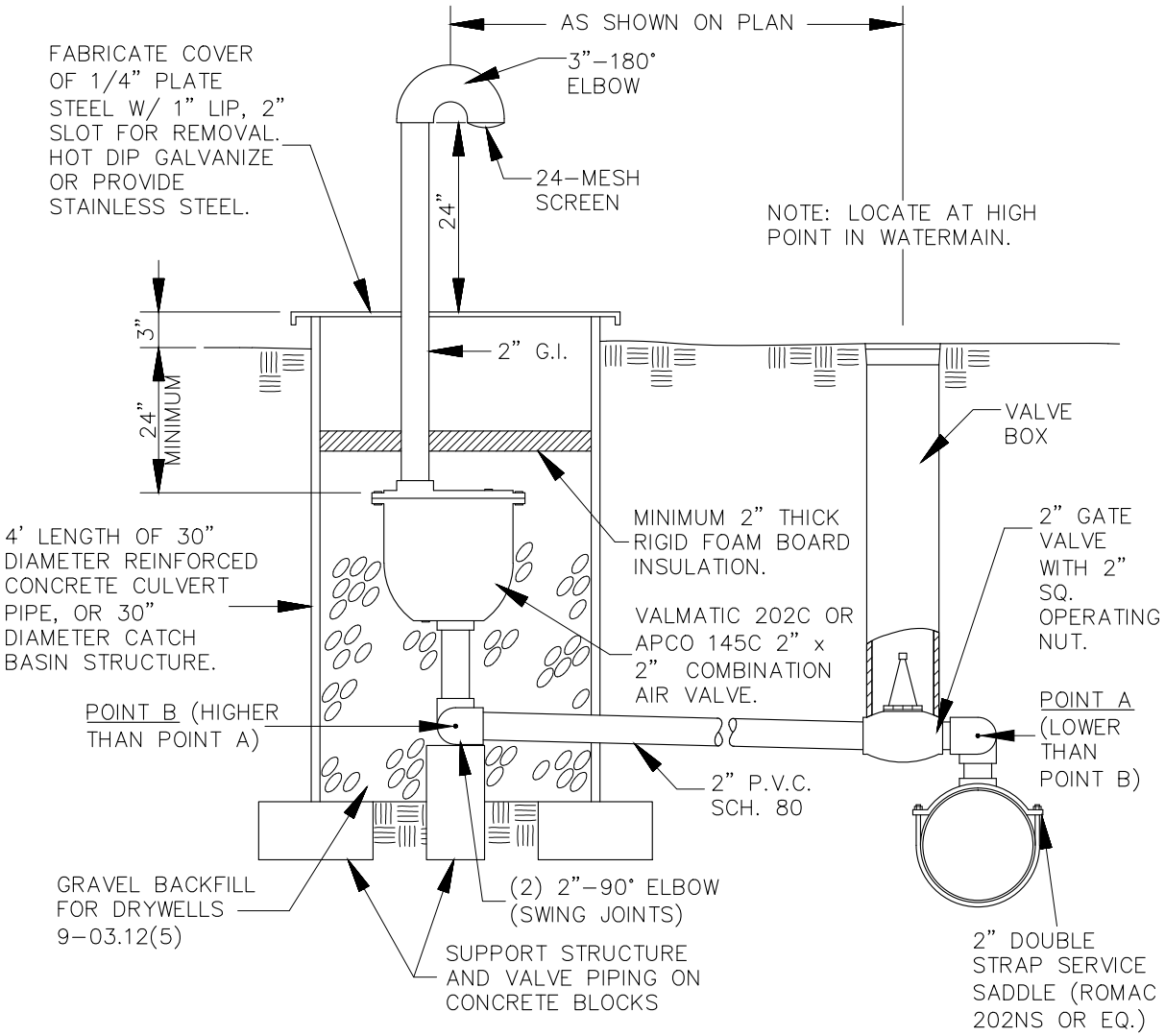
BLOW-OFF ASSEMBLY

NOT TO SCALE

NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

ORIG.	02/17		
Revision	Date	Description	Appr

CITY OF SUNNYSIDE-STANDARD DETAIL	BLOW - OFF ASSEMBLY	W-5



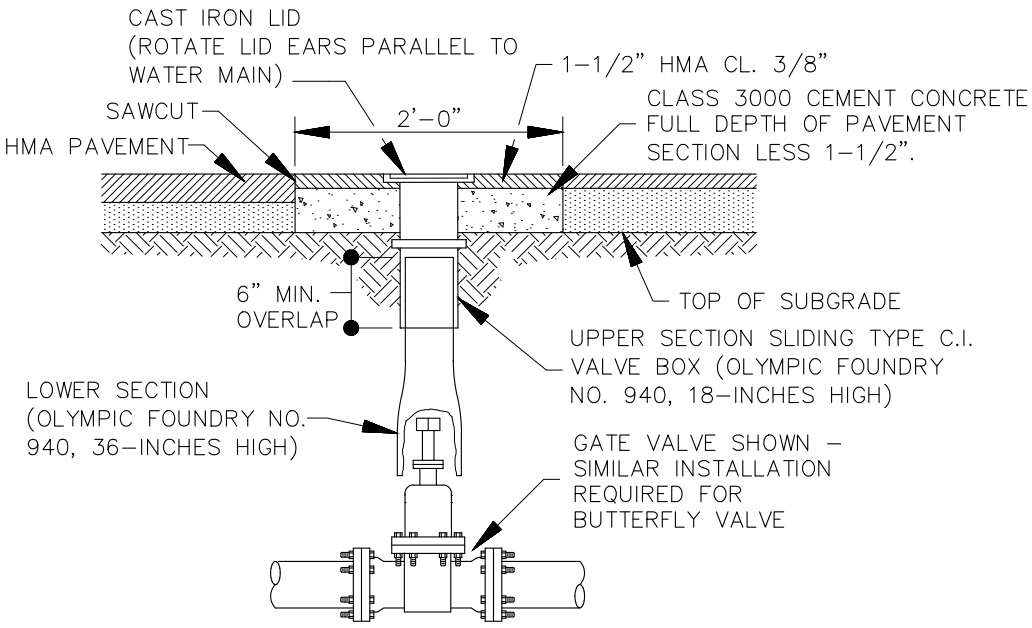
AIR RELEASE / VACUUM VALVE ASSEMBLY

NOT TO SCALE

NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

ORIG.	02/17		
Revision	Date	Description	Appr

CITY OF SUNNYSIDE-STANDARD DETAIL	AIR RELEASE/ VACUUM VALVE ASSEMBLY	W-4

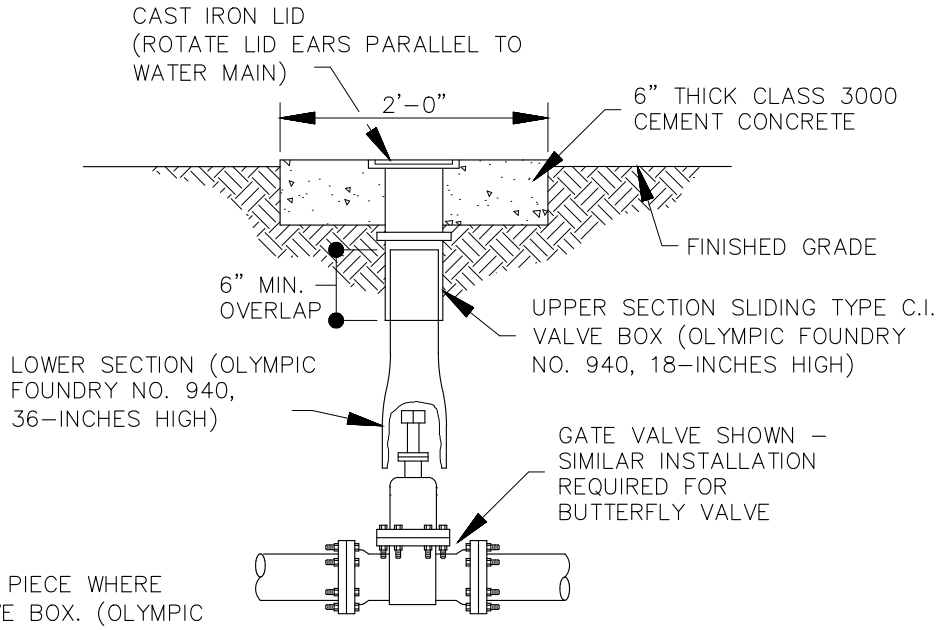


NOTE:

PROVIDE EXTENSION PIECE WHERE REQUIRED FOR VALVE BOX. (OLYMPIC FOUNDRY NO. 940R 12, 12–INCHES HIGH)

WATER VALVE BOX - IN PAVEMENT

NOT TO SCALE



NOTE:

PROVIDE EXTENSION PIECE WHERE REQUIRED FOR VALVE BOX. (OLYMPIC FOUNDRY NO. 940, 12–INCHES HIGH)

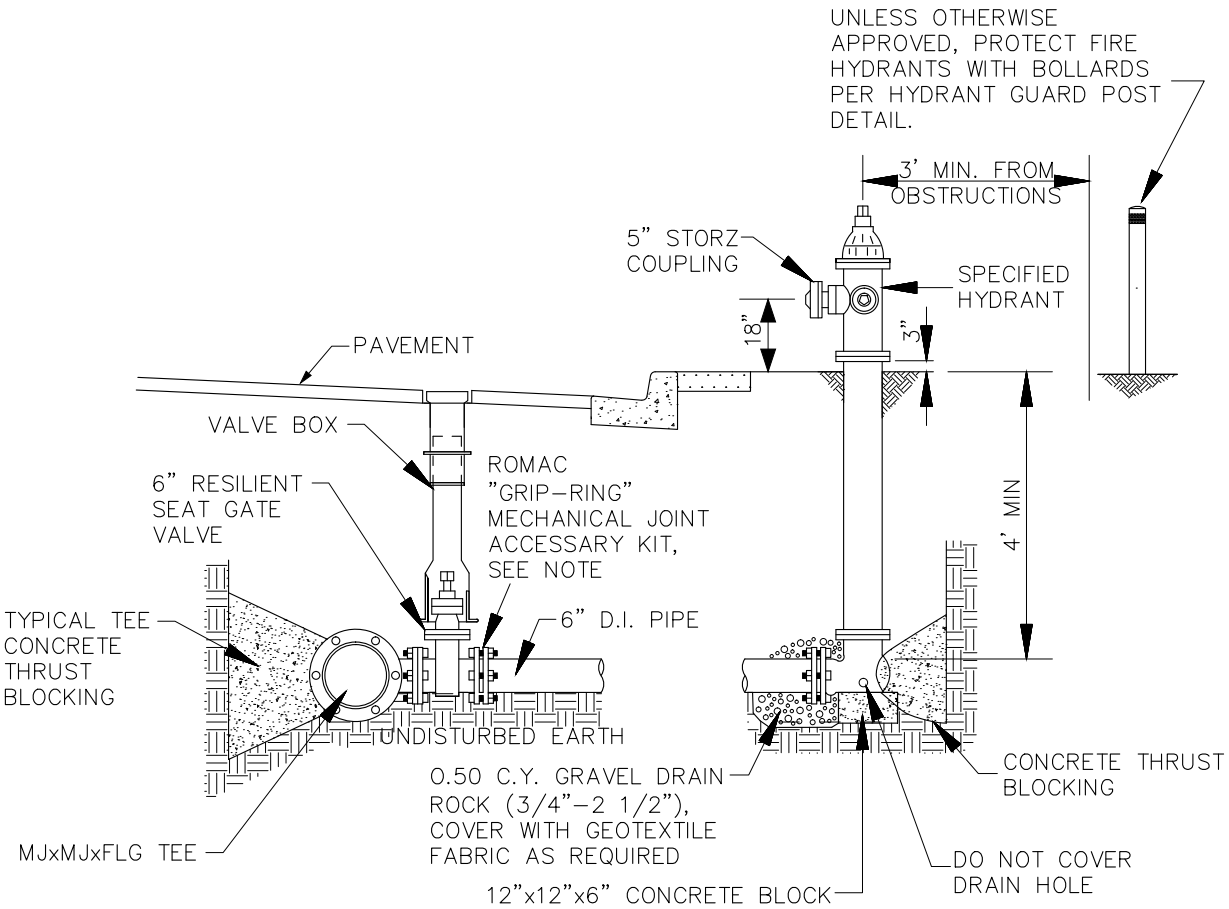
WATER VALVE BOX - NOT IN PAVEMENT

NOT TO SCALE

NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

ORIG.	02/17		
Revision	Date	Description	Appr

CITY OF SUNNYSIDE-STANDARD DETAIL	WATER VALVE BOX	W-3



NOTES:

1. ROMAC "GRIP RING" MECHANICAL JOINT ACCESSORY KITS SHALL BE USED ON ALL MECHANICAL JOINT CONNECTIONS FROM VALVE TO HYDRANT.

2. WHEN DISTANCE FROM VALVE TO HYDRANT IS GREATER THAN 18', SHACKLE RODS AND CONCRETE BLOCKING SHALL BE USED.

3. SHACKLE RODS ARE TO BE THREADED AT EACH END A LENGTH SUFFICIENT TO ALLOW THE USE OF DOUBLE NUTS ON EACH END TO REPLACE THE BOLTS NORMALLY USED IN MECHANICAL JOINT CONNECTIONS.

4. REMAINDER OF HYDRANT DETAIL IS TYPICAL OF BLOCKED HYDRANT.

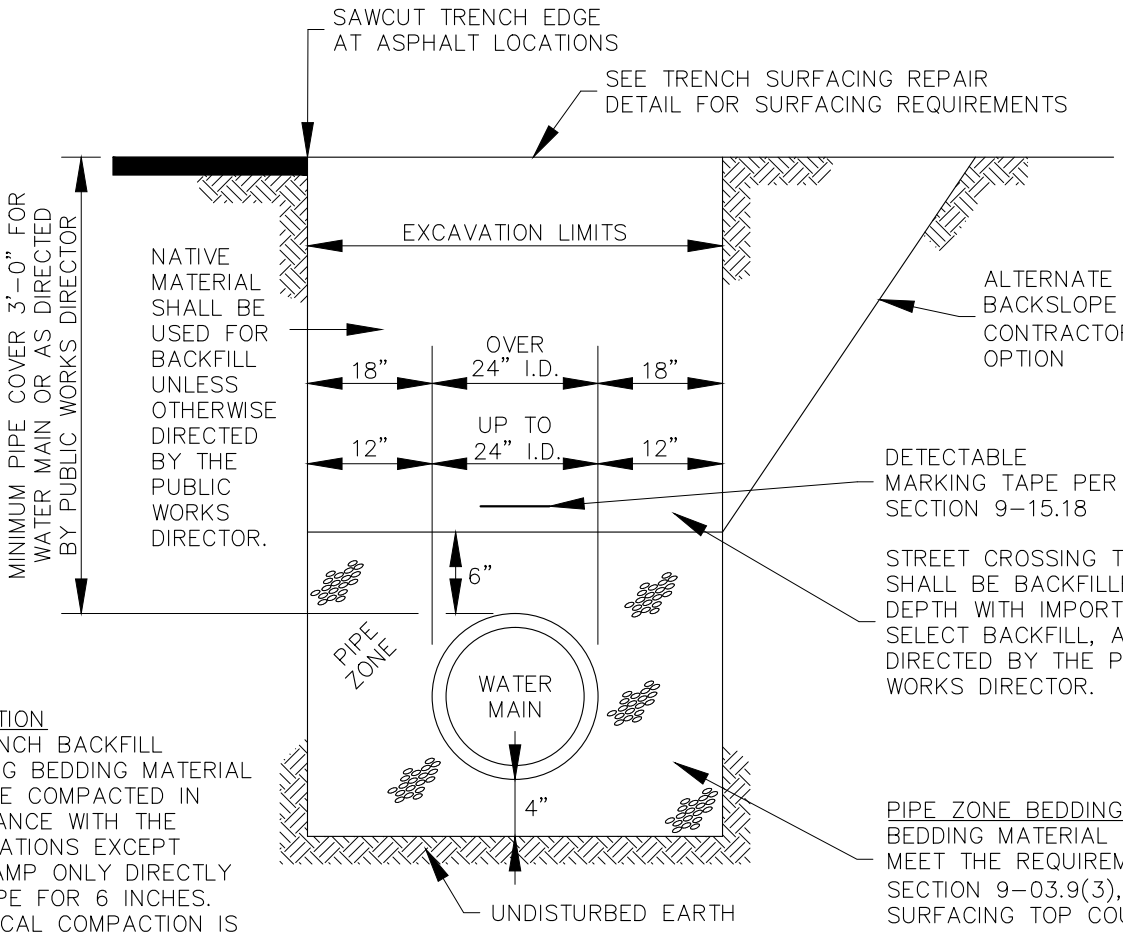
FIRE HYDRANT ASSEMBLY

NOT TO SCALE

NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

ORIG.	02/17		
Revision	Date	Description	Appr

CITY OF SUNNYSIDE-STANDARD DETAIL	FIRE HYDRANT ASSEMBLY	W-2



COMPACTION
ALL TRENCH BACKFILL INCLUDING BEDDING MATERIAL SHALL BE COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS EXCEPT HAND TAMP ONLY DIRECTLY OVER PIPE FOR 6 INCHES. MECHANICAL COMPACTION IS REQUIRED UNLESS WATER SETTLING IS ALLOWED BY THE SPECIFICATIONS.

NOTE:
CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE O.S.H.A. AND W.I.S.H.A. SAFETY AND HEALTH REGULATIONS.

WATER MAIN TRENCH SECTION

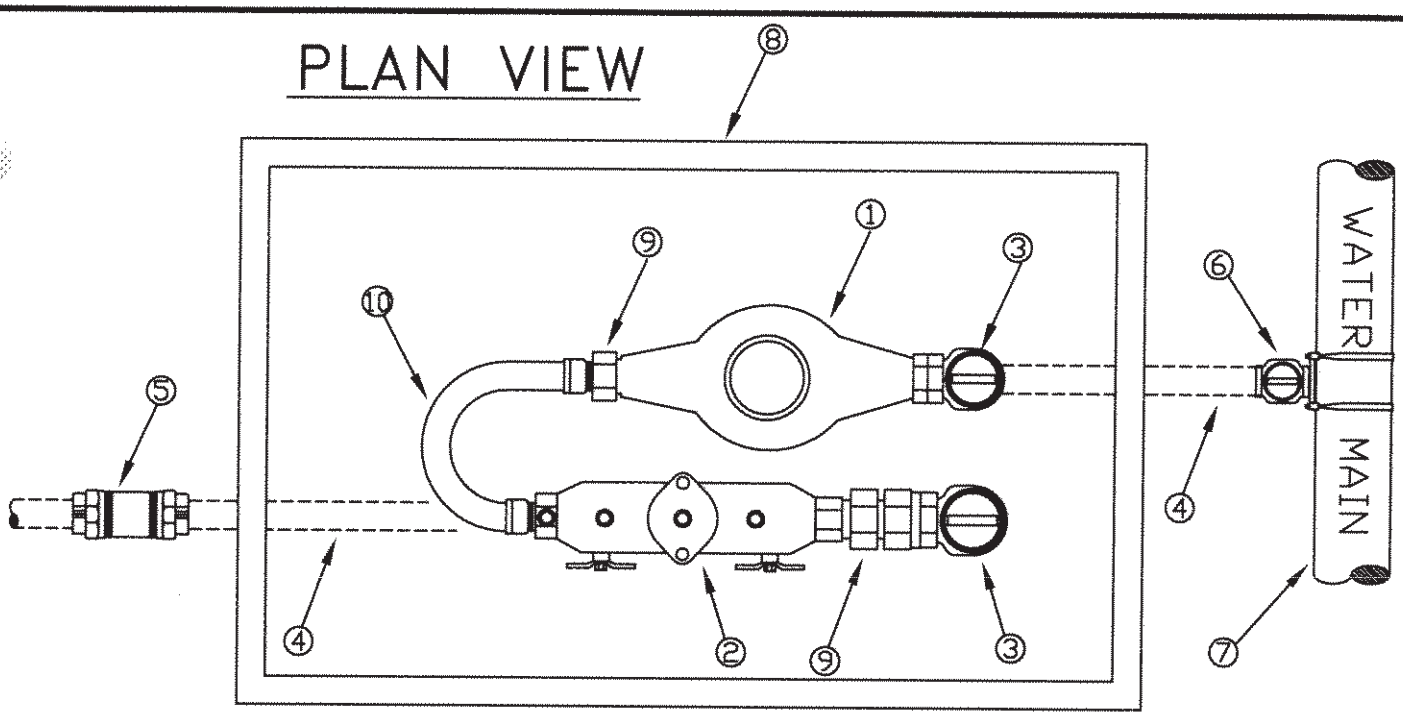
NOT TO SCALE

NOTE:
ONLY THE LATEST DETAIL, AS APPROVED BY THE DIRECTOR OF PUBLIC WORKS, SHALL BE USED.

ORIG.	02/17		
Revision	Date	Description	Appr

CITY OF SUNNYSIDE-STANDARD DETAIL	WATER MAIN TRENCH SECTION	W-1

PLAN VIEW



BACKFLOW REQUIRED ON ALL SERVICES

NOTES:

1. WATER METER MUST BE WITHIN 12"-14" OF FINISHED GRADE. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN FINISHED GRADE FROM THE CONSTRUCTION PLANS. IF METER IS MORE THAN 14" FROM GRADE, THE CITY MAY REQUIRE THE METER BOX TO BE STACKED TO ACHIEVE CLEARENCE FROM THE BOTTOM OF THE METER TO DIRT GRADE INSIDE THE BOX..

2. NEW SERVICE LINES WILL BE 1" OR ; ILY. IF A 1 1/2" METER IS NEEDED, CONTRACTOR CAN REDUCE AT TH_ _.LL VALVE BEFORE THE METER.

METER & BACKFLOW MATERIALS

① WATER METER- PURCHASED FROM THE CITY

② CITY OF SUNNYSIDE APPROVED BACKFLOWS:
A) WATTS 007 QT
B) WILKINS 950 XLT

③ ANGLE BALL VALVE 90° SHUT OFF(MUELLER)

④ TYPE "K" COPPER TUBING

⑤ COMPRESSION COUPLING TO OWNERS SERVICE LINE BY LICENSED PLUMBING CONTRACTOR

⑥ ROMAC 202N SADDLE & CORP. BALL VALVE W/ C-C PIPE THREAD X COMPRESSION CONNECTION AT HORIZONTAL FOR ALL 3/4" TO 2" PIPE TYPES

⑦ WATER MAIN

⑧ MID-STATES BCF-173018B- (1")
(2)CARSON SUPER JUMBO- (1 1/2"-2")
BROOKS MODEL 66- TRAFFIC AREAS

⑨ ADAPTER

⑩ U-BEND

WATER METER & DCVA INSTALLATION

REQUIRED FOR 1" THRU 2" METER INSTALLATIONS

CITY OF SUNNYSIDE
PUBLIC WORKS DEPARTMENT

DATE	5/05
DWN	SRF
REV	
CHK	JLB
SCALE	NTS

DWG. NO.
4-14

City of SUNNYSIDE WASHINGTON

21

Disinfection Byproducts Monitoring Plan

HLA Engineering and Land Surveying, Inc.

City of Sunnyside
Disinfectant/Disinfection
By-Product Rule (D/DBP)
Compliance Program

FINAL
April 2004

Prepared by:

Economic and Engineering Services, Inc.
7601 W. Clearwater Avenue. Suite 102
Kennewick, WA 99336
(509) 374-5224
Fax (509) 374-5136

Table of Contents

Tables

1.0 Overview of D/DBP Regulations

Disinfection of drinking water is one of the major public health advances of the 20th century. However, disinfectants can react with naturally occurring materials in drinking water to form organic and inorganic disinfectant by-products (DBPs). A major challenge for water suppliers is to balance the risks from microbial pathogens and DBPs. It is important to provide protection from microbial pathogens while simultaneously decreasing health risks to the population from DBPs. The 1996 Safe Drinking Water Act (SDWA) Amendments require EPA to develop rules to achieve these goals.

The Disinfectant/Disinfection By-Product Rule (D/DBP Rule) was developed in two Stages. Stage I has been finalized and became effective in January 2002. A Stage II Proposed Rule was submitted in August of 2003 for review and comment. The Stage II D/DBP Final Rule is currently projected by EPA to be in place in July of 2004. Thus, an overview of the Stage II Rule is provided for reference, but the majority of this D/DBP Rule Compliance Program focuses on Stage I requirements applicable to the City of Sunnyside (City). Each water system required to monitor under the D/DBP Rule must develop and implement a monitoring plan. The monitoring plan developed by the City is contained in this D/DBP Rule Compliance Program. The City must maintain the plan and make it available for inspection by the Washington State Department of Health (DOH) and the general public by January 1, 2004.

Stage I was promulgated in December 1998 and replaced the former Trihalomethane Rule. The Stage I D/DBP Rule applies to all community water systems and nontransient-noncommunity water systems using a chemical disinfectant for either primary or secondary disinfection. The D/DBP Rule sets Maximum Contaminant Levels (MCLs) for chlorite and bromate, and the sum of four trihalomethanes (TTHMs) and the sum of five haloacetic acids (HAA5), as follows:

Trihalomethanes:
- Trichloromethane (Chloroform)
- Bromodichloromethane
- Dibromochloromethane
- Tribromomethane (Bromoform)

Haloacetic Acids:
- Monochloracetic Acid (Chloroacetic Acid)
- Dichloroacetic Acid
- Trichloroacetic Acid
- Monobromoacetic Acid
- Dibromoacetic Acid (Bromoacetic Acid)

The Stage I Rule also set Maximum Residual Disinfectant Levels (MRDLs) for disinfectants added to drinking water including chlorine, chloramine, and chlorine dioxide. An MRDL is defined as the level of a disinfectant added for water treatment that may not be exceeded without an unacceptable possibility of adverse health effects. However, the USEPA specifically allows

short-term exceedence of MRDLs to control microbiological contamination problems. Stage I MCLs and MRDLs are summarized in Table 1.

Table 1
Summary of Stage I D/DBP Rule MCLs and MRDLs

Parameter	MCL (mg/L)	MRDL (mg/L)
Disinfection By-Product		
TTHMs	0.080	
HAA5	0.060	
Chlorite*	1.0	
Bromate*	0.010	
Disinfectant		
Chlorine (as Cl_2)		4.0
Chloramine (as Cl_2)		4.0
Chlorine Dioxide*		0.8

*Note: The City is not required to monitor for chlorite, bromate, or chlorine dioxide since neither chlorine dioxide nor ozone are used in the treatment process.

Compliance with Stage I MCLs and MRDLs will be based on a running annual average of samples collected at specified locations at specified frequencies, as required by the Stage I Rule. Monitoring requirements, compliance calculations, and compliance scheduling for the Stage I Rule are provided in the following sections.

2.0 Routine Monitoring Requirements

This section describes the number of samples, sample locations, and sampling frequency applicable to the City for disinfection by-products (TTHMs and HAA5), and disinfectant residuals (chlorine). Monitoring requirements are described for normal operating conditions.

Groundwater is the sole source of domestic water supply to the City. Two of the City's wells are operated year-round (Wells No. 8 and 9). A third well is typically operated for three (3) quarters out of each year (Well No. 7), and a fourth well is typically operated only during the third quarter of each year (Well No. 6). The wells operated during only a portion of the year assist in meeting the additional demands put on the system for irrigation purposes. Well No. 5 is used for emergency purposes only. If Well No. 5 or any other well is operated for a majority of the quarter that they do not typically run, the City should add one (1) additional sample per additional well per quarter.

2.1 Disinfection By-Products

Number of Samples. The City is required to monitor for TTHMs and HAA5 at one sampling site per operating plant per quarter within the distribution system. A single plant is considered a well or well field. Each sample location must represent the maximum hydraulic detention time under normal operating conditions. These sample locations should be distributed throughout the system.

Sample Locations. Sample locations were selected based on detention time evaluations, number of persons served, the availability of historical data, whether or not booster disinfection is practiced, and ease of access to the sample location. Table 2 lists the City-chosen sample locations for Stage I DBP monitoring under routine operating conditions. Exhibit 1 illustrates these locations on a city-wide map.

Table 2
City of Sunnyside Stage I Disinfection By-Product Monitoring Locations

Sample Number	Location	Parameters	Sampling Quarter
DP-1	1606 San Clemente	TTHM and HAA5	1,2,3,4
DP-2	1209 Vista	TTHM and HAA5	1,2,3,4
DP-3	355 E. Alexander Road	TTHM and HAA5	2,3,4
DP-4	3201 Picard Place	TTHM and HAA5	3

Sampling Frequency. Samples must be collected from each sampling location on a quarterly basis for each operating well, resulting in a total of 12 samples per year. Samples must be collected on the same day (i.e., within a 24-hour period). The anticipated sampling schedule is

quarterly on the first Monday of the month. Sampling will be done in February, May, August and November.

2.2 Disinfectants

The City is required to monitor for chloramines at the same location and frequency as coliform monitoring under the Total Coliform Rule. Sample sites and sampling frequency used by the City for Total Coliform Rule compliance are summarized in Table 3. According to the schedule in Table 3, 16 locations are sampled each month. Eight (8) samples are taken on the first Monday of each month, including a raw sample from a well, and the remaining eight (8) are taken on the second Monday of the month. Exhibit 1 illustrates these locations on a city-wide map.

Table 3
City of Sunnyside Stage I Disinfectants Monitoring Locations

Sample Number	Location	Sampling Date
D-1	340 W. Grandview	1st Monday
D-2	605 Skyline	2nd Monday
D-3	606 San Clemente	1st Monday
D-4	1209 Vista	1st Monday
D-5	811 Dayton Drive	2nd Monday
D-6	701 Scoon Road	1st Monday
D-7	110 South Hill Rd. (Bi-Mart)	1st Monday
D-8	809 N.W. Crescent	2nd Monday
D-9	2200 Yakima Valley Hwy. (McDonalds)	1st Monday
D-10	2001 Yakima Valley Hwy. (Mid Valley Mall)	2nd Monday
D-11	2550 Yakima Valley Hwy. (Taco Bell)	2nd Monday
D-12	Wells 5-10 Raw Source - on rotation, depending on demand.	1st Monday
D-13	3201 Picard Pl. (Burger King)	2nd Monday
D-14	818 E. Edison Ave. (City Hall)	2nd Monday
D-15	555 W. South Hill Road (Yakima Chief)	2nd Monday
D-16	355 E. Alexander Road (Dairy Fair)	1st Monday

3.0 Reduced Monitoring Requirements

3.1 Disinfection By-Products

Reduced monitoring for TTHMs and HAA5 may be allowed if after one year of monitoring the annual average of TTHMs is less than 0.040 mg/L and the annual average of HAA5 is less than 0.030 mg/L. Additionally, Total Organic Carbon (TOC) levels must be less than 4.0 mg/L in the source water. Sampling requirements can be reduced to one sample per quarter at a location representing maximum detention time.

Systems may remain on a reduced monitoring schedule as long as the average of all samples taken in the year is no more than 0.060 mg/L and 0.045 mg/L for TTHMs and HAA5, respectively. If these levels are not met, the routine monitoring program at a minimum of four locations must resume in the quarter immediately following the quarter in which the 0.060 mg/L or 0.045 mg/L levels are exceeded.

3.2 Disinfectants

There are no reduced monitoring provisions for disinfectants.

4.0 Compliance Determination Calculations

4.1 Disinfection By-Products

Compliance with the TTHM and HAA5 MCLs is based on the running annual arithmetic average of samples collected on a quarterly basis. If the running annual average of any consecutive 4-quarter period exceeds an MCL, the system is in violation and must notify the public and the State. An example compliance calculation for TTHMs is provided in Table 4.

Table 4
Example TTHM Running Annual Average Compliance Calculation

Quarter	Results (mg/L)	Quarterly Avg. (mg/L)		Running Annual Avg. (mg/L)	Quarters
1	0.024	0.031		0.059	1 through 4
(Months 1 through 3)	0.036			0.066	2 through 5
	0.028			0.069	3 through 6
	0.037				
2	0.055	0.049			
(Months 4 through 6)	0.024				
	0.062				
	0.055				
3	0.088	0.086			
(Months 7 through 9)	0.085				
	0.092				
	0.077				
4	0.072	0.068			
(Months 10 through 12)	0.045				
	0.089				
	0.067				
5	0.055	0.062			
(Months 13 through 15)	0.068				
	0.057				
	0.066				
6	0.048	0.060			
(Months 16 through 14)	0.055				
	0.072				
	0.064				

The example data in Table 4 show that the system is in compliance with the 0.080 mg/L TTHM MCL based on a running annual average, even though the results for the third quarter exceeded 0.080 mg/L.

Significant figures are important when determining compliance with the D/DBP Rule MCLs. The MCL (whether reported in mg/L or μg/L) is set with two significant figures. Thus, 0.080

mg/L equals 80 μg/L. A result of 80.4 μg/L (or 0.0804 mg/L) is still in compliance with the TTHM MCL since the reported result would be rounded down to 80 μg/L.

4.2 Disinfectants

Compliance with the chlorine disinfectant MRDL of 4.0 mg/L is based on the running annual average, computed quarterly, of monthly averages of all samples. An example compliance calculation for chloramine residual is provided in Table 5.

Table 5
Example Chlorine Running Annual Average Compliance Calculation

Quarter	Month	No. Samples	Monthly Avg. (mg/L as Cl2)	Quarterly Avg. (mg/L as Cl2)		Running Annual Avg. (mg/L as Cl2)	Quarters
1	1	410	1.2	1.4		2.0	1 through 4
	2	409	1.8			2.2	2 through 5
	3	400	1.1			2.1	3 through 6
2	4	398	2.0	2.2			
	5	411	2.2				
	6	401	2.5				
3	7	404	1.8	1.8			
	8	412	1.5				
	9	395	2.0				
4	10	388	2.7	2.6			
	11	387	2.9				
	12	395	2.2				
5	13	407	1.9	2.2			
	14	411	2.4				
	15	409	2.2				
6	16	392	1.7	1.7			
	17	387	1.5				
	18	400	1.9				

Significant figures are important when determining compliance with the disinfectant MRDLs. Compliance with the 4.0 mg/L MRDL is based on two significant figures. Therefore, a running annual average result of 4.04 mg/L is in compliance, but a running annual average result of 4.06 mg/L is in violation of the MRDL.

If the City switches to some other form of disinfectant, the monitoring plan should be updated to reflect the additional byproducts that may result.

5.0 Analytical Requirements

Analyses must be conducted using EPA Methods in accordance with the analytical requirements set forth in 40 CFR 141. Samples analyzed for the purposes of the D/DBP Rule must be collected after the water has been allowed to flow from the sample tap for a sufficient length of time to assure that the collected sample is representative of water in the distribution system. Chlorine measurements can be made in the field by properly trained personnel. TTHMs and HAA5 must be analyzed by a certified laboratory. Approved analytical methods are listed in Table 6.

Table 6
Summary of Approved Analytical Methods for Disinfection By-Products and Disinfectants

Analyte	EPA Method	Standard Method
TTHM	502.2 524.2 551.1	
HAA5	552.1	6251 B
Chlorine (total)		4500-Cl D 4500-Cl F 4500-Cl G* 4500-Cl E 4500-Cl I

*Hach Method 8167 is equivalent to Standard Method 4500-Cl G

6.0 Reporting Requirements

Results for both disinfection by-product and disinfectant monitoring must be reported to the State within 10 days of the end of each calendar quarter. If an MCL or MRDL is exceeded, the State shall be notified within 24 hours or by the next business day after the results are reported to the City.

6.1 Disinfection By-Products

When monitoring on a quarterly basis for TTHM and HAA5, the following information should be included with each report to the State:

- Number of samples collected during the quarter
- Location, date, and result
- Arithmetic average of quarter's samples
- Annual arithmetic average of quarterly averages
- Whether an MCL was exceeded.

DOH is currently developing a standard reporting form but it is not yet available for distribution.

6.2 Disinfectants

For disinfectants, the following information should be included with each report to the State:

- Number of samples collected each month during the quarter
- Average of each of the past 12 months
- Average of monthly averages over the past year
- Whether the MRDL was exceeded.

7.0 Public Notification Requirements

Public notification requirements are similar for both disinfection by-products and disinfectants. If an MCL or MRDL is violated, newspaper notification will be required within 14 days, and direct mail delivery will be required within 45 days of the violation.

Failure to perform monitoring, reporting, or to comply with the correct testing procedures **would require notice** of the violation by publication in a daily newspaper of general circulation in the area served by the City within three months.

Additionally, a copy of any public notice must be provided to all new billing units or new hookups prior to or at the time service begins.

Each notice must provide a clear and readily understandable explanation of the violation, any potential adverse health effects, the population at risk, the steps that the public water system is taking to correct the violation, the necessity for seeking alternative water supplies, if any, and any preventative measures the consumer should take until the violation is corrected.

8.0 Overview of Stage II D/DBP Proposed Rule

The requirements of the Stage II D/DBP Rule will apply to the same water systems as Stage I. The Stage II Rule is designed to reduce DBP occurrence peaks in the distribution system. Compliance monitoring will be preceded by an initial distribution system evaluation (IDSE) to select site-specific optimal sample locations for capturing peaks. As of August 2003, Stage II Proposed Rule has been under review and a Final Rule is not anticipated until July of 2004.

8.1 Phases of Stage II Rule

Systems will comply with the Stage II Rule in two phases:

Phase 1

- Effective 3 years after rule promulgation (with additional 2 year extension available for systems requiring capital improvements)
- All systems must comply with a 120/100 μg/L (for TTHM and HAA5, respectively) locational running annual average (LRAA)
- Based on Stage 1 monitoring sites
- Must continue to comply with Stage I 80/60 μg/L running annual average (RAA)
- Initial Distribution System Evaluation (IDSE) must be submitted to DOH within 2 years of promulgation (see section 8.2).

Phase 2

- Effective 6 years after rule promulgation (with additional 2 year extension available for systems requiring capital improvements)
- Large and medium systems must comply with 80/60 LRAA
- Based on new sampling sites identified under Initial Distribution System Evaluation (IDSE) as described below

8.2 Initial Distribution System Evaluation

IDSEs are intended to select new compliance monitoring sites that more accurately reflect areas with high TTHM and HAA5 levels. As a result of the ISDE study, the City will recommend new monitoring sites to the State. ISDE results will not be used for compliance purposes.

Monitoring Requirements for Ground Water Systems Serving ≥ 10,000 are summarized as follows:

- Two (2) sites per plant, approximately every 90 days for one year, in addition to Stage I compliance sites
- One set taken during the peak historical month for DBP levels or water temperature

- Sites should be prior to last fire hydrant on system
- Sites should not be on a dead-end line with no customers
- Collect paired samples (i.e., TTHM and HAA5) at each site.

For systems using chlorine, the sampling sites must be distributed as follows:

- 1 near distribution system point of entry per plant
- 1 at point of highest TTHM and HAA5 concentrations per plant

The results of IDSE monitoring must be reported to the State within 2 years of Rule promulgation. Thus, if EPA adopts a Stage II D/DBP Final Rule in July of 2004, as is currently projected, the City should be prepared to conduct an IDSE and report the results to DOH by July of 2006.

8.3 Long Term Compliance Monitoring (Phase 2)

Ground water systems serving ≥ 10,000 people must monitor on a quarterly basis, approximately 90 days apart. Appropriate distribution system sites must be identified. At least one quarterly sample must be taken during the peak historical month for DBP levels. Two sample sets per quarter per plant will be required.

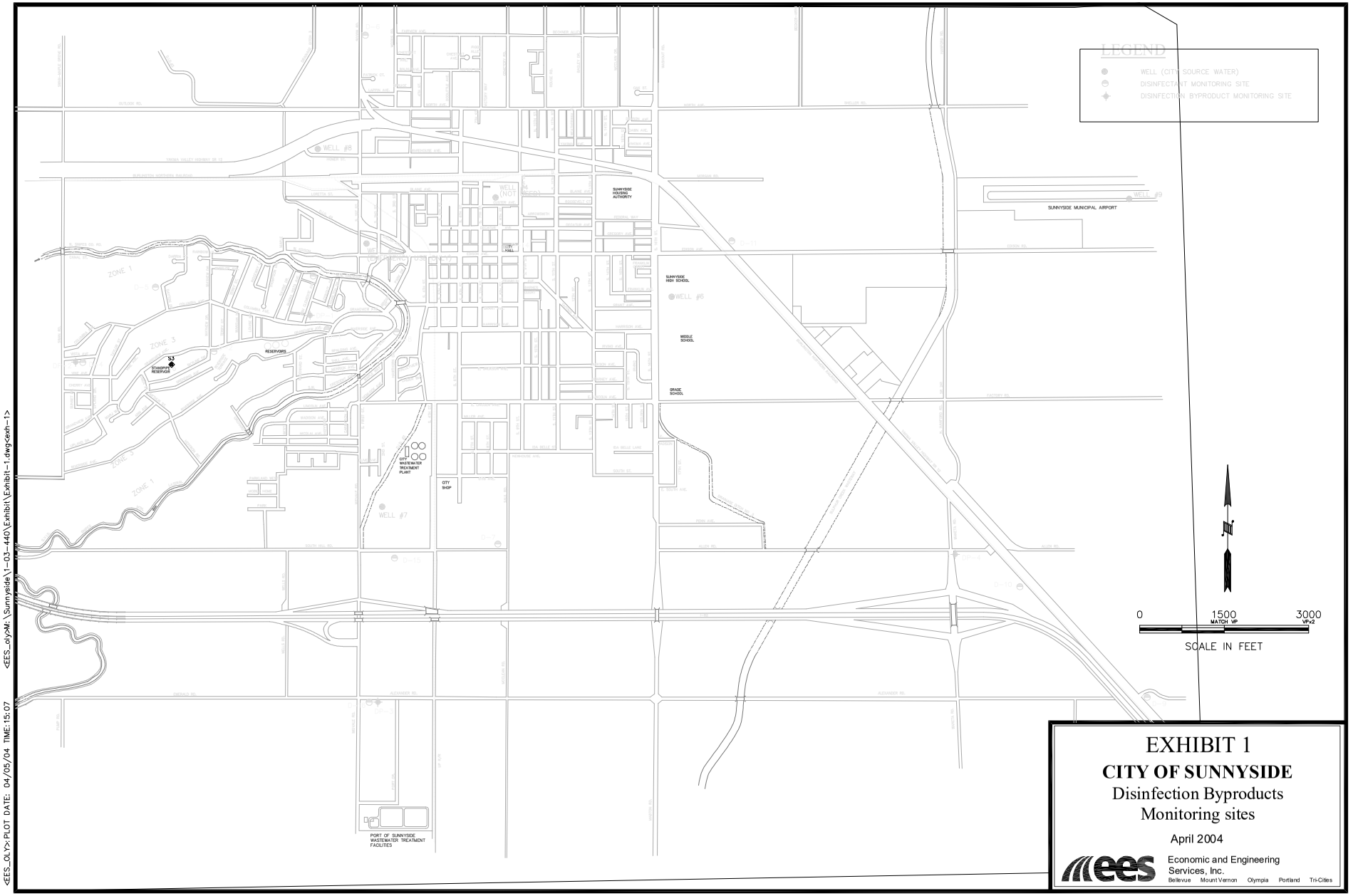


EXHIBIT 1

CITY OF SUNNYSIDE

Disinfection Byproducts
Monitoring sites

April 2004

Economic and Engineering
Services, Inc.
Bellevue Mount Vernon Olympia Portland Tri-Cities

City of SUNNYSIDE WASHINGTON

22

Capital Improvement Costs

HLA Engineering and Land Surveying, Inc.

Project S1-b: South Well - Saddle Mountain (Construction, 1500 gpm, 900 feet deep)

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 83,300.00	$ 83,300.00
2	Minor Change	FA	Est.	$ 25,000.00	$ 25,000.00
3	Well Drilling	LF	900	$ 1,000.00	$ 900,000.00
				Construction Cost Subtotal:	**$ 1,008,000.00**
				Sales Tax (8.2%):	$ 83,000.00
				Subtotal:	**$ 1,091,000.00**
				Contingency (20%):	$ 218,200.00
				Subtotal:	**$ 1,309,200.00**
				Engineering & Administration (15%):	**$ 196,400.00**
				Construction Engineering (15%):	**$ 196,400.00**
				TOTAL ESTIMATED COST	**$ 1,702,000.00**

Project S1-c: South Well Facilities

Item No.	Item Description	Unit	Quantity		Unit Price		Amount
1	Mobilization	LS	1	$	128,300.00	$	128,300.00
2	Minor Change	FA	Est.	$	25,000.00	$	25,000.00
3	Well Building	LS	1	$	800,000.00	$	800,000.00
4	Electrical and Controls	LS	1	$	500,000.00	$	500,000.00
5	Site Development	LS	1	$	100,000.00	$	100,000.00
					Construction Cost Subtotal:	**$**	**1,553,000.00**
					Sales Tax (8.2%):	$	127,000.00
					Subtotal:	**$**	**1,680,000.00**
					Contingency (20%):	$	336,000.00
					Subtotal:	**$**	**2,016,000.00**
					Engineering & Administration (15%):	**$**	**302,400.00**
					Construction Engineering (15%):	**$**	**302,400.00**
					TOTAL ESTIMATED COST	**$**	**2,620,800.00**

Project S2: Well No. 7 Iron Fouling Cleanup

Item No.	Item Description	Unit	Quantity		Unit Price		Amount
1	Mobilization	LS	1	$	80,000.00	$	80,000.00
2	Remove and Inspect Existing Well Pump and Motor	LS	1	$	40,000.00	$	40,000.00
3	Video Inspection	EA	2	$	2,500.00	$	5,000.00
4	Well Rehabilitation - Mechanical	HR	12	$	800.00	$	9,600.00
5	Mobilize Impulse Generation Equipment	LS	1	$	15,000.00	$	15,000.00
6	Well Rehabilitation - Impulse Generation	HR	12	$	1,500.00	$	18,000.00
7	Well Rehabilitation - Chemical	HR	24	$	800.00	$	19,200.00
8	Well Rehabilitation - Redevelopment	HR	10	$	800.00	$	8,000.00
9	Well Rehabilitation and Treatment Chemicals	LS	1	$	30,000.00	$	30,000.00
10	Control and Dispose of Well Rehabilitation Waste	LS	1	$	20,000.00	$	20,000.00
11	Furnish, Install, and remove Test Pump for Pumping Tests	LS	1	$	100,000.00	$	100,000.00
12	Operate Test Pump for Pumping Tests	HR	6	$	800.00	$	4,800.00
13	Furnish and Install New Well Pump, Motor, and Appurtenances	FA	1	$	120,000.00	$	120,000.00
14	Well Disinfection	LS	1	$	10,000.00	$	10,000.00
15	Site Cleanup	LS	1	$	15,000.00	$	15,000.00
					Construction Cost Subtotal:	**$**	**495,000.00**
					Sales Tax (8.2%):	$	41,000.00
					Subtotal:	**$**	**536,000.00**
					Contingency (15%):	$	80,400.00
					Subtotal:	**$**	**616,400.00**
					Engineering & Administration (15%):	**$**	**92,500.00**
					Construction Engineering (15%):	**$**	**92,500.00**
					TOTAL ESTIMATED COST	**$**	**801,400.00**

Project S2: Well No. 6 Iron Fouling Cleanup

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 60,000.00	$ 60,000.00
2	Remove and Inspect Existing Well Pump and Motor	LS	1	$ 30,000.00	$ 30,000.00
3	Video Inspection	EA	2	$ 2,500.00	$ 5,000.00
4	Well Rehabilitation - Mechanical	HR	10	$ 800.00	$ 8,000.00
5	Mobilize Impulse Generation Equipment	LS	1	$ 15,000.00	$ 15,000.00
6	Well Rehabilitation - Impulse Generation	HR	10	$ 1,500.00	$ 15,000.00
7	Well Rehabilitation - Chemical	HR	20	$ 800.00	$ 16,000.00
8	Well Rehabilitation - Redevelopment	HR	8	$ 800.00	$ 6,400.00
9	Well Rehabilitation and Treatment Chemicals	LS	1	$ 30,000.00	$ 30,000.00
10	Control and Dispose of Well Rehabilitation Waste	LS	1	$ 20,000.00	$ 20,000.00
11	Furnish, Install, and remove Test Pump for Pumping Tests	LS	1	$ 80,000.00	$ 80,000.00
12	Operate Test Pump for Pumping Tests	HR	6	$ 800.00	$ 4,800.00
13	Furnish and Install New Well Pump, Motor, and Appurtenances	FA	1	$ 100,000.00	$ 100,000.00
14	Well Disinfection	LS	1	$ 10,000.00	$ 10,000.00
15	Site Cleanup	LS	1	$ 15,000.00	$ 15,000.00
				Construction Cost Subtotal:	**$ 415,000.00**
				Sales Tax (8.2%):	$ 34,000.00
				Subtotal:	**$ 449,000.00**
				Contingency (15%):	$ 67,350.00
				Subtotal:	**$ 516,350.00**
				Engineering & Administration (15%):	**$ 77,500.00**
				Construction Engineering (15%):	**$ 77,500.00**
				TOTAL ESTIMATED COST	**$ 671,350.00**

Project S3: Hypochlorite System for Wells 11 and 12/13

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 9,000.00	$ 9,000.00
2	Well Chlorination System	EA	2	$ 50,000.00	$ 100,000.00
				Construction Cost Subtotal:	**$ 109,000.00**
				Sales Tax (8.2%):	$ 9,000.00
				Subtotal:	**$ 118,000.00**
				Contingency (20%):	$ 23,600.00
				Subtotal:	**$ 141,600.00**
				Engineering & Administration (15%):	**$ 21,200.00**
				Construction Engineering (15%):	**$ 21,200.00**
				TOTAL ESTIMATED COST	**$ 184,000.00**

Project S4: Hypochlorite Storage and Emergency Feed; Grandview & Skyline

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 15,800.00	$ 15,800.00
2	Hypochlorite Storage	LS	1	$ 125,000.00	$ 125,000.00
3	Reservoir Chlorination System	LS	1	$ 50,000.00	$ 50,000.00
				Construction Cost Subtotal:	**$ 191,000.00**
				Sales Tax (8.2%):	$ 16,000.00
				Subtotal:	**$ 207,000.00**
				Contingency (20%):	$ 41,400.00
				Subtotal:	**$ 248,400.00**
				Engineering & Administration (15%):	**$ 37,300.00**
				Construction Engineering (15%):	**$ 37,300.00**
				TOTAL ESTIMATED COST	**$ 323,000.00**

Project S5-b: North Well - Saddle Mountain (Construction, 1500 gpm, 900 feet deep)

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 83,300.00	$ 83,300.00
2	Minor Change	FA	Est.	$ 25,000.00	$ 25,000.00
3	Well Drilling	LF	900	$ 1,000.00	$ 900,000.00
				Construction Cost Subtotal:	**$ 1,008,000.00**
				Sales Tax (8.2%):	$ 83,000.00
				Subtotal:	**$ 1,091,000.00**
				Contingency (20%):	$ 218,200.00
				Subtotal:	**$ 1,309,200.00**
				Engineering & Administration (15%):	**$ 196,400.00**
				Construction Engineering (15%):	**$ 196,400.00**
				TOTAL ESTIMATED COST	**$ 1,702,000.00**

Project S5-c: North Well Facilities

Item No.	Item Description	Unit	Quantity		Unit Price		Amount
1	Mobilization	LS	1	$	128,300.00	$	128,300.00
2	Minor Change	FA	Est.	$	25,000.00	$	25,000.00
3	Well Building	LS	1	$	800,000.00	$	800,000.00
4	Electrical and Controls	LS	1	$	500,000.00	$	500,000.00
5	Site Development	LS	1	$	100,000.00	$	100,000.00
					Construction Cost Subtotal:	**$**	**1,553,000.00**
					Sales Tax (8.2%):	$	127,000.00
					Subtotal:	**$**	**1,680,000.00**
					Contingency (20%):	$	336,000.00
					Subtotal:	**$**	**2,016,000.00**
					Engineering & Administration (15%):	**$**	**302,400.00**
					Construction Engineering (15%):	**$**	**302,400.00**
					TOTAL ESTIMATED COST	**$**	**2,620,800.00**

Project D-1: 9th St. - 8" Water Line

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 7,400.00	$ 7,400.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	8-Inch DI Water Main	LF	350	$ 90.00	$ 31,500.00
4	8-Inch Gate Valve and Valve Box	EA	3	$ 2,500.00	$ 7,500.00
5	6-Inch Gate Valve and Valve Box	EA	1	$ 1,800.00	$ 1,800.00
6	Fire Hydrant Assembly	EA	1	$ 6,500.00	$ 6,500.00
7	Select Backfill	TON	150	$ 50.00	$ 7,500.00
8	Surface Repair	SY	230	$ 75.00	$ 17,250.00
				Construction Cost Subtotal:	**$ 89,000.00**
				Sales Tax (8.2%):	$ 7,000.00
				Subtotal:	**$ 96,000.00**
				Contingency (20%):	$ 19,200.00
				Subtotal:	**$ 115,200.00**
				Engineering & Administration (15%):	**$ 17,300.00**
				Construction Engineering (15%):	**$ 17,300.00**
				TOTAL ESTIMATED COST	**$ 149,800.00**

Project D-2: 1st St. to Trailer Park - 8" Waterline Loop

Item No.	Item Description	Unit	Quantity		Unit Price		Amount
1	Mobilization	LS	1	$	11,100.00	$	11,100.00
2	Temporary Traffic Control	LS	1	$	10,000.00	$	10,000.00
3	8-Inch DI Water Main	LF	550	$	90.00	$	49,500.00
4	8-Inch Gate Valve and Valve Box	EA	3	$	2,500.00	$	7,500.00
5	6-Inch Gate Valve and Valve Box	EA	2	$	1,800.00	$	3,600.00
6	Fire Hydrant Assembly	EA	2	$	6,500.00	$	13,000.00
7	Select Backfill	TON	240	$	50.00	$	12,000.00
8	Surface Repair	SY	370	$	75.00	$	27,750.00
					Construction Cost Subtotal:	**$**	**134,000.00**
					Sales Tax (8.2%):	$	11,000.00
					Subtotal:	**$**	**145,000.00**
					Contingency (20%):	$	29,000.00
					Subtotal:	**$**	**174,000.00**
					Engineering & Administration (15%):	**$**	**26,100.00**
					Construction Engineering (15%):	**$**	**26,100.00**
					TOTAL ESTIMATED COST	**$**	**226,200.00**

Project D-3: Edison Rd. to Hydrant - 12" Waterline

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 14,900.00	$ 14,900.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	720	$ 110.00	$ 79,200.00
4	12-Inch Gate Valve and Valve Box	EA	3	$ 2,800.00	$ 8,400.00
5	6-Inch Gate Valve and Valve Box	EA	2	$ 1,800.00	$ 3,600.00
6	Fire Hydrant Assembly	EA	2	$ 6,500.00	$ 13,000.00
7	Select Backfill	TON	310	$ 50.00	$ 15,500.00
8	Surface Repair	SY	480	$ 75.00	$ 36,000.00
				Construction Cost Subtotal:	**$ 181,000.00**
				Sales Tax (8.2%):	$ 15,000.00
				Subtotal:	**$ 196,000.00**
				Contingency (20%):	$ 39,200.00
				Subtotal:	**$ 235,200.00**
				Engineering & Administration (15%):	**$ 35,300.00**
				Construction Engineering (15%):	**$ 35,300.00**
				TOTAL ESTIMATED COST	**$ 305,800.00**

Project D-4: Eastway Dr. - 12" water line; 12" waterline from Federal Way

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 16,900.00	$ 16,900.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	840	$ 110.00	$ 92,400.00
4	12-Inch Gate Valve and Valve Box	EA	3	$ 2,800.00	$ 8,400.00
5	6-Inch Gate Valve and Valve Box	EA	2	$ 1,800.00	$ 3,600.00
6	Fire Hydrant Assembly	EA	2	$ 6,500.00	$ 13,000.00
7	Select Backfill	TON	370	$ 50.00	$ 18,500.00
8	Surface Repair	SY	560	$ 75.00	$ 42,000.00
				Construction Cost Subtotal:	**$ 205,000.00**
				Sales Tax (8.2%):	$ 17,000.00
				Subtotal:	**$ 222,000.00**
				Contingency (20%):	$ 44,400.00
				Subtotal:	**$ 266,400.00**
				Engineering & Administration (15%):	**$ 40,000.00**
				Construction Engineering (15%):	**$ 40,000.00**
				TOTAL ESTIMATED COST	**$ 346,400.00**

Project D-5: Yakima Valley Road - 12" Waterline Loop

Item No.	Item Description	Unit	Quantity		Unit Price		Amount
1	Mobilization	LS	1	$	1,800.00	$	1,800.00
2	Temporary Traffic Control	LS	0	$	-	$	-
3	12-Inch DI Water Main	LF	80	$	110.00	$	8,800.00
4	12-Inch Gate Valve and Valve Box	EA	2	$	2,800.00	$	5,600.00
5	6-Inch Gate Valve and Valve Box	EA	0	$	1,800.00	$	-
6	Fire Hydrant Assembly	EA	0	$	6,500.00	$	-
7	Select Backfill	TON	30	$	50.00	$	1,500.00
8	Surface Repair	SY	50	$	75.00	$	3,750.00
					Construction Cost Subtotal:	**$**	**21,000.00**
					Sales Tax (8.2%):	$	2,000.00
					Subtotal:	**$**	**23,000.00**
					Contingency (20%):	$	4,600.00
					Subtotal:	**$**	**27,600.00**
					Engineering & Administration (15%):	**$**	**4,100.00**
					Construction Engineering (15%):	**$**	**4,100.00**
					TOTAL ESTIMATED COST	**$**	**35,800.00**

Project D-6: North Ave. - 8" Waterline Loop

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 1,400.00	$ 1,400.00
2	Temporary Traffic Control	LS	0		$ -
3	8-Inch DI Water Main	LF	50	$ 90.00	$ 4,500.00
4	8-Inch Gate Valve and Valve Box	EA	3	$ 2,500.00	$ 7,500.00
5	6-Inch Gate Valve and Valve Box	EA	0	$ 1,800.00	$ -
6	Fire Hydrant Assembly	EA	0	$ 6,500.00	$ -
7	Select Backfill	TON	20	$ 50.00	$ 1,000.00
8	Surface Repair	SY	30	$ 75.00	$ 2,250.00
				Construction Cost Subtotal:	**$ 17,000.00**
				Sales Tax (8.2%):	$ 1,000.00
				Subtotal:	**$ 18,000.00**
				Contingency (20%):	$ 3,600.00
				Subtotal:	**$ 21,600.00**
				Engineering & Administration (15%):	**$ 3,200.00**
				Construction Engineering (15%):	**$ 3,200.00**
				TOTAL ESTIMATED COST	**$ 28,000.00**

Project D-7: S. 11th St. - 8" Tap to Hydrant

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 3,100.00	$ 3,100.00
2	Temporary Traffic Control	LS	0		$ -
3	8-Inch DI Water Main	LF	170	$ 90.00	$ 15,300.00
4	8-Inch Gate Valve and Valve Box	EA	3	$ 2,500.00	$ 7,500.00
5	6-Inch Gate Valve and Valve Box	EA	0	$ 1,800.00	$ -
6	Fire Hydrant Assembly	EA	0	$ 6,500.00	$ -
7	Select Backfill	TON	70	$ 50.00	$ 3,500.00
8	Surface Repair	SY	110	$ 75.00	$ 8,250.00
				Construction Cost Subtotal:	**$ 38,000.00**
				Sales Tax (8.2%):	$ 3,000.00
				Subtotal:	**$ 41,000.00**
				Contingency (20%):	$ 8,200.00
				Subtotal:	**$ 49,200.00**
				Engineering & Administration (15%):	**$ 7,400.00**
				Construction Engineering (15%):	**$ 7,400.00**
				TOTAL ESTIMATED COST	**$ 64,000.00**

Project D-8: Scoon Rd. and Private Road - 12" Waterline

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 27,200.00	$ 27,200.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	1350	$ 110.00	$ 148,500.00
4	12-Inch Gate Valve and Valve Box	EA	5	$ 2,800.00	$ 14,000.00
5	6-Inch Gate Valve and Valve Box	EA	4	$ 1,800.00	$ 7,200.00
6	Fire Hydrant Assembly	EA	4	$ 6,500.00	$ 26,000.00
7	Select Backfill	TON	590	$ 50.00	$ 29,500.00
8	Surface Repair	SY	900	$ 75.00	$ 67,500.00
				Construction Cost Subtotal:	**$ 330,000.00**
				Sales Tax (8.2%):	$ 27,000.00
				Subtotal:	**$ 357,000.00**
				Contingency (20%):	$ 71,400.00
				Subtotal:	**$ 428,400.00**
				Engineering & Administration (15%):	**$ 64,300.00**
				Construction Engineering (15%):	**$ 64,300.00**
				TOTAL ESTIMATED COST	**$ 557,000.00**

Project D-9: 5th St. to Blain Ave. Loop - 12" Waterline from Federal Way

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 36,600.00	$ 36,600.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	1800	$ 110.00	$ 198,000.00
4	12-Inch Gate Valve and Valve Box	EA	7	$ 2,800.00	$ 19,600.00
5	6-Inch Gate Valve and Valve Box	EA	6	$ 1,800.00	$ 10,800.00
6	Fire Hydrant Assembly	EA	6	$ 6,500.00	$ 39,000.00
7	Select Backfill	TON	780	$ 50.00	$ 39,000.00
8	Surface Repair	SY	1200	$ 75.00	$ 90,000.00
				Construction Cost Subtotal:	**$ 443,000.00**
				Sales Tax (8.2%):	$ 36,000.00
				Subtotal:	**$ 479,000.00**
				Contingency (20%):	$ 95,800.00
				Subtotal:	**$ 574,800.00**
				Engineering & Administration (15%):	**$ 86,200.00**
				Construction Engineering (15%):	**$ 86,200.00**
				TOTAL ESTIMATED COST	**$ 747,200.00**

Project D-10: Blain Ave. 9th to 11th Waterline

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 26,500.00	$ 26,500.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	1300	$ 110.00	$ 143,000.00
4	12-Inch Gate Valve and Valve Box	EA	5	$ 2,800.00	$ 14,000.00
5	6-Inch Gate Valve and Valve Box	EA	4	$ 1,800.00	$ 7,200.00
6	Fire Hydrant Assembly	EA	4	$ 6,500.00	$ 26,000.00
7	Select Backfill	TON	570	$ 50.00	$ 28,500.00
8	Surface Repair	SY	870	$ 75.00	$ 65,250.00
				Construction Cost Subtotal:	**$ 320,000.00**
				Sales Tax (8.2%):	$ 26,000.00
				Subtotal:	**$ 346,000.00**
				Contingency (20%):	$ 69,200.00
				Subtotal:	**$ 415,200.00**
				Engineering & Administration (15%):	**$ 62,300.00**
				Construction Engineering (15%):	**$ 62,300.00**
				TOTAL ESTIMATED COST	**$ 539,800.00**

Project D-11: 11th St. from Blain Ave. to Lincoln Ave.

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 74,300.00	$ 74,300.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	3710	$ 110.00	$ 408,100.00
4	12-Inch Gate Valve and Valve Box	EA	15	$ 2,800.00	$ 42,000.00
5	6-Inch Gate Valve and Valve Box	EA	12	$ 1,800.00	$ 21,600.00
6	Fire Hydrant Assembly	EA	12	$ 6,500.00	$ 78,000.00
7	Select Backfill	TON	1610	$ 50.00	$ 80,500.00
8	Surface Repair	SY	2470	$ 75.00	$ 185,250.00
				Construction Cost Subtotal:	**$ 900,000.00**
				Sales Tax (8.2%):	$ 74,000.00
				Subtotal:	**$ 974,000.00**
				Contingency (20%):	$ 194,800.00
				Subtotal:	**$ 1,168,800.00**
				Engineering & Administration (15%):	**$ 175,300.00**
				Construction Engineering (15%):	**$ 175,300.00**
				TOTAL ESTIMATED COST	**$ 1,519,400.00**

Project D-12: Madison to Parkland Neighborhood 8" Water Line

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 8,000.00	$ 8,000.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	8-Inch DI Water Main	LF	390	$ 90.00	$ 35,100.00
4	8-Inch Gate Valve and Valve Box	EA	3	$ 2,500.00	$ 7,500.00
5	6-Inch Gate Valve and Valve Box	EA	1	$ 1,800.00	$ 1,800.00
6	Fire Hydrant Assembly	EA	1	$ 6,500.00	$ 6,500.00
7	Select Backfill	TON	170	$ 50.00	$ 8,500.00
8	Surface Repair	SY	260	$ 75.00	$ 19,500.00
				Construction Cost Subtotal:	**$ 97,000.00**
				Sales Tax (8.2%):	$ 8,000.00
				Subtotal:	**$ 105,000.00**
				Contingency (20%):	$ 21,000.00
				Subtotal:	**$ 126,000.00**
				Engineering & Administration (15%):	**$ 18,900.00**
				Construction Engineering (15%):	**$ 18,900.00**
				TOTAL ESTIMATED COST	**$ 163,800.00**

Project D-13: Replace all 4" Water Lines with 12" Water Lines

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 235,400.00	$ 235,400.00
2	Temporary Traffic Control	LS	1	$ 50,000.00	$ 50,000.00
3	12-Inch DI Water Main	LF	13500	$ 110.00	$ 1,485,000.00
4	12-Inch Gate Valve and Valve Box	EA	40	$ 2,800.00	$ 112,000.00
5	6-Inch Gate Valve and Valve Box	EA	0	$ 1,800.00	$ -
6	Fire Hydrant Assembly	EA	0	$ 6,500.00	$ -
7	Select Backfill	TON	5870	$ 50.00	$ 293,500.00
8	Surface Repair	SY	9000	$ 75.00	$ 675,000.00
				Construction Cost Subtotal:	**$ 2,851,000.00**
				Sales Tax (8.2%):	$ 234,000.00
				Subtotal:	**$ 3,085,000.00**
				Contingency (20%):	$ 617,000.00
				Subtotal:	**$ 3,702,000.00**
				Engineering & Administration (15%):	**$ 555,300.00**
				Construction Engineering (15%):	**$ 555,300.00**
				TOTAL ESTIMATED COST	**$ 4,812,600.00**

Project D-14: Sunnyside-Mabton Rd. to Quail Ln. - 12" Water Line Loop

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 84,800.00	$ 84,800.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	4170	$ 110.00	$ 458,700.00
4	12-Inch Gate Valve and Valve Box	EA	18	$ 2,800.00	$ 50,400.00
5	6-Inch Gate Valve and Valve Box	EA	15	$ 1,800.00	$ 27,000.00
6	Fire Hydrant Assembly	EA	15	$ 6,500.00	$ 97,500.00
7	Select Backfill	TON	1810	$ 50.00	$ 90,500.00
8	Surface Repair	SY	2780	$ 75.00	$ 208,500.00
				Construction Cost Subtotal:	**$ 1,027,000.00**
				Sales Tax (8.2%):	$ 84,000.00
				Subtotal:	**$ 1,111,000.00**
				Contingency (20%):	$ 222,200.00
				Subtotal:	**$ 1,333,200.00**
				Engineering & Administration (15%):	**$ 200,000.00**
				Construction Engineering (15%):	**$ 200,000.00**
				TOTAL ESTIMATED COST	**$ 1,733,200.00**

Project D-15: South Sunnyside (East of Port WWTP) - 12" Water Line Loop

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 67,300.00	$ 67,300.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	3600	$ 110.00	$ 396,000.00
4	12-Inch Gate Valve and Valve Box	EA	12	$ 2,800.00	$ 33,600.00
5	6-Inch Gate Valve and Valve Box	EA	6	$ 1,800.00	$ 10,800.00
6	Fire Hydrant Assembly	EA	6	$ 6,500.00	$ 39,000.00
7	Select Backfill	TON	1570	$ 50.00	$ 78,500.00
8	Surface Repair	SY	2400	$ 75.00	$ 180,000.00
				Construction Cost Subtotal:	**$ 815,000.00**
				Sales Tax (8.2%):	$ 67,000.00
				Subtotal:	**$ 882,000.00**
				Contingency (20%):	$ 176,400.00
				Subtotal:	**$ 1,058,400.00**
				Engineering & Administration (15%):	**$ 158,800.00**
				Construction Engineering (15%):	**$ 158,800.00**
				TOTAL ESTIMATED COST	**$ 1,376,000.00**

Project D-16: West 12" Water Line Loop

Item No.	Item Description	Unit	Quantity		Unit Price		Amount
1	Mobilization	LS	1	$	25,600.00	$	25,600.00
2	Temporary Traffic Control	LS	1	$	10,000.00	$	10,000.00
3	12-Inch DI Water Main	LF	1250	$	110.00	$	137,500.00
4	12-Inch Gate Valve and Valve Box	EA	5	$	2,800.00	$	14,000.00
5	6-Inch Gate Valve and Valve Box	EA	4	$	1,800.00	$	7,200.00
6	Fire Hydrant Assembly	EA	4	$	6,500.00	$	26,000.00
7	Select Backfill	TON	540	$	50.00	$	27,000.00
8	Surface Repair	SY	830	$	75.00	$	62,250.00
					Construction Cost Subtotal:	**$**	**310,000.00**
					Sales Tax (8.2%):	$	25,000.00
					Subtotal:	**$**	**335,000.00**
					Contingency (20%):	$	67,000.00
					Subtotal:	**$**	**402,000.00**
					Engineering & Administration (15%):	**$**	**60,300.00**
					Construction Engineering (15%):	**$**	**60,300.00**
					TOTAL ESTIMATED COST	**$**	**522,600.00**

Project D-17: Sheller Rd. to Airport - Morgan 12" Water Line Loop

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 112,300.00	$ 112,300.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	5850	$ 110.00	$ 643,500.00
4	12-Inch Gate Valve and Valve Box	EA	18	$ 2,800.00	$ 50,400.00
5	6-Inch Gate Valve and Valve Box	EA	15	$ 1,800.00	$ 27,000.00
6	Fire Hydrant Assembly	EA	15	$ 6,500.00	$ 97,500.00
7	Select Backfill	TON	2540	$ 50.00	$ 127,000.00
8	Surface Repair	SY	3900	$ 75.00	$ 292,500.00
				Construction Cost Subtotal:	**$ 1,360,000.00**
				Sales Tax (8.2%):	$ 112,000.00
				Subtotal:	**$ 1,472,000.00**
				Contingency (20%):	$ 294,400.00
				Subtotal:	**$ 1,766,400.00**
				Engineering & Administration (15%):	**$ 265,000.00**
				Construction Engineering (15%):	**$ 265,000.00**
				TOTAL ESTIMATED COST	**$ 2,296,400.00**

Project D-18: E. Edison Ave. to YVH - 12" Water Line Loop

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 97,100.00	$ 97,100.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	4920	$ 110.00	$ 541,200.00
4	12-Inch Gate Valve and Valve Box	EA	18	$ 2,800.00	$ 50,400.00
5	6-Inch Gate Valve and Valve Box	EA	15	$ 1,800.00	$ 27,000.00
6	Fire Hydrant Assembly	EA	15	$ 6,500.00	$ 97,500.00
7	Select Backfill	TON	2140	$ 50.00	$ 107,000.00
8	Surface Repair	SY	3280	$ 75.00	$ 246,000.00
				Construction Cost Subtotal:	**$ 1,176,000.00**
				Sales Tax (8.2%):	$ 96,000.00
				Subtotal:	**$ 1,272,000.00**
				Contingency (20%):	$ 254,400.00
				Subtotal:	**$ 1,526,400.00**
				Engineering & Administration (15%):	**$ 229,000.00**
				Construction Engineering (15%):	**$ 229,000.00**
				TOTAL ESTIMATED COST	**$ 1,984,400.00**

Project D-19: East Sunnyside - Ray Rd. - 12" Water Line Loop

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 243,500.00	$ 243,500.00
2	Temporary Traffic Control	LS	1	$ 50,000.00	$ 50,000.00
3	12-Inch DI Water Main	LF	12170	$ 110.00	$ 1,338,700.00
4	12-Inch Gate Valve and Valve Box	EA	40	$ 2,800.00	$ 112,000.00
5	6-Inch Gate Valve and Valve Box	EA	40	$ 1,800.00	$ 72,000.00
6	Fire Hydrant Assembly	EA	40	$ 6,500.00	$ 260,000.00
7	Select Backfill	TON	5290	$ 50.00	$ 264,500.00
8	Surface Repair	SY	8110	$ 75.00	$ 608,250.00
				Construction Cost Subtotal:	**$ 2,949,000.00**
				Sales Tax (8.2%):	$ 242,000.00
				Subtotal:	**$ 3,191,000.00**
				Contingency (20%):	$ 638,200.00
				Subtotal:	**$ 3,829,200.00**
				Engineering & Administration (15%):	**$ 574,400.00**
				Construction Engineering (15%):	**$ 574,400.00**
				TOTAL ESTIMATED COST	**$ 4,978,000.00**

Project D-19: East Sunnyside - Ray Rd. - 12" Water Line Loop

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 177,800.00	$ 177,800.00
2	Temporary Traffic Control	LS	1	$ 50,000.00	$ 50,000.00
3	16-Inch DI Water Main	LF	7920	$ 150.00	$ 1,188,000.00
4	16-Inch Gate Valve and Valve Box	EA	20	$ 3,500.00	$ 70,000.00
5	6-Inch Gate Valve and Valve Box	EA	12	$ 1,800.00	$ 21,600.00
6	Fire Hydrant Assembly	EA	12	$ 6,500.00	$ 78,000.00
7	Select Backfill	TON	3440	$ 50.00	$ 172,000.00
8	Surface Repair	SY	5280	$ 75.00	$ 396,000.00
				Construction Cost Subtotal:	**$ 2,153,000.00**
				Sales Tax (8.2%):	$ 177,000.00
				Subtotal:	**$ 2,330,000.00**
				Contingency (20%):	$ 466,000.00
				Subtotal:	**$ 2,796,000.00**
				Engineering & Administration (15%):	**$ 419,400.00**
				Construction Engineering (15%):	**$ 419,400.00**
				TOTAL ESTIMATED COST	**$ 3,634,800.00**

Project D-21: Columbia Ave. - 8" Water Line Loop

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 10,000.00	$ 10,000.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	8-Inch DI Water Main	LF	530	$ 90.00	$ 47,700.00
4	8-Inch Gate Valve and Valve Box	EA	3	$ 2,500.00	$ 7,500.00
5	6-Inch Gate Valve and Valve Box	EA	1	$ 1,800.00	$ 1,800.00
6	Fire Hydrant Assembly	EA	1	$ 6,500.00	$ 6,500.00
7	Select Backfill	TON	230	$ 50.00	$ 11,500.00
8	Surface Repair	SY	350	$ 75.00	$ 26,250.00
				Construction Cost Subtotal:	**$ 121,000.00**
				Sales Tax (8.2%):	$ 10,000.00
				Subtotal:	**$ 131,000.00**
				Contingency (20%):	$ 26,200.00
				Subtotal:	**$ 157,200.00**
				Engineering & Administration (15%):	**$ 23,600.00**
				Construction Engineering (15%):	**$ 23,600.00**
				TOTAL ESTIMATED COST	**$ 204,400.00**

Project D-23: New PRV Station

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 4,100.00	$ 4,100.00
2	Pressure Reducing Valve	EA	1	$ 30,000.00	$ 30,000.00
3	Precast Concrete Vault	LS	1	$ 10,000.00	$ 10,000.00
4	8-Inch Gate Valve	EA	2	$ 2,500.00	$ 5,000.00
5	Surface Repair	SY	10	$ 75.00	$ 750.00
				Construction Cost Subtotal:	**$ 50,000.00**
				Sales Tax (8.2%):	$ 4,000.00
				Subtotal:	**$ 54,000.00**
				Contingency (20%):	$ 10,800.00
				Subtotal:	**$ 64,800.00**
				Engineering & Administration (15%):	**$ 9,700.00**
				Construction Engineering (15%):	**$ 9,700.00**
				TOTAL ESTIMATED COST	**$ 84,200.00**

Project D-24: Bagley Drive Looping

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 12,700.00	$ 12,700.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	650	$ 110.00	$ 71,500.00
4	12-Inch Gate Valve and Valve Box	EA	2	$ 2,800.00	$ 5,600.00
5	6-Inch Gate Valve and Valve Box	EA	1	$ 1,800.00	$ 1,800.00
6	Fire Hydrant Assembly	EA	1	$ 6,500.00	$ 6,500.00
7	Select Backfill	TON	280	$ 50.00	$ 14,000.00
8	Surface Repair	SY	430	$ 75.00	$ 32,250.00
				Construction Cost Subtotal:	**$ 154,000.00**
				Sales Tax (8.2%):	$ 13,000.00
				Subtotal:	**$ 167,000.00**
				Contingency (20%):	$ 33,400.00
				Subtotal:	**$ 200,400.00**
				Engineering & Administration (15%):	**$ 30,100.00**
				Construction Engineering (15%):	**$ 30,100.00**
				TOTAL ESTIMATED COST	**$ 260,600.00**

Project D-25: Wheeler Ave. Looping

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 5,600.00	$ 5,600.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	215	$ 110.00	$ 23,650.00
4	12-Inch Gate Valve and Valve Box	EA	2	$ 2,800.00	$ 5,600.00
5	6-Inch Gate Valve and Valve Box	EA	1	$ 1,800.00	$ 1,800.00
6	Fire Hydrant Assembly	EA	1	$ 6,500.00	$ 6,500.00
7	Select Backfill	TON	90	$ 50.00	$ 4,500.00
8	Surface Repair	SY	140	$ 75.00	$ 10,500.00
				Construction Cost Subtotal:	**$ 68,000.00**
				Sales Tax (8.2%):	$ 6,000.00
				Subtotal:	**$ 74,000.00**
				Contingency (20%):	$ 14,800.00
				Subtotal:	**$ 88,800.00**
				Engineering & Administration (15%):	**$ 13,300.00**
				Construction Engineering (15%):	**$ 13,300.00**
				TOTAL ESTIMATED COST	**$ 115,400.00**

Project D-26: Ridgeway Loop Looping

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 7,800.00	$ 7,800.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	350	$ 110.00	$ 38,500.00
4	12-Inch Gate Valve and Valve Box	EA	2	$ 2,800.00	$ 5,600.00
5	6-Inch Gate Valve and Valve Box	EA	1	$ 1,800.00	$ 1,800.00
6	Fire Hydrant Assembly	EA	1	$ 6,500.00	$ 6,500.00
7	Select Backfill	TON	150	$ 50.00	$ 7,500.00
8	Surface Repair	SY	230	$ 75.00	$ 17,250.00
				Construction Cost Subtotal:	**$ 95,000.00**
				Sales Tax (8.2%):	$ 8,000.00
				Subtotal:	**$ 103,000.00**
				Contingency (20%):	$ 20,600.00
				Subtotal:	**$ 123,600.00**
				Engineering & Administration (15%):	**$ 18,500.00**
				Construction Engineering (15%):	**$ 18,500.00**
				TOTAL ESTIMATED COST	**$ 160,600.00**

Project D-27: Swan Drive Looping

Item No.	Item Description	Unit	Quantity	Unit Price	Amount
1	Mobilization	LS	1	$ 8,300.00	$ 8,300.00
2	Temporary Traffic Control	LS	1	$ 10,000.00	$ 10,000.00
3	12-Inch DI Water Main	LF	375	$ 110.00	$ 41,250.00
4	12-Inch Gate Valve and Valve Box	EA	2	$ 2,800.00	$ 5,600.00
5	6-Inch Gate Valve and Valve Box	EA	1	$ 1,800.00	$ 1,800.00
6	Fire Hydrant Assembly	EA	1	$ 6,500.00	$ 6,500.00
7	Select Backfill	TON	160	$ 50.00	$ 8,000.00
8	Surface Repair	SY	250	$ 75.00	$ 18,750.00
				Construction Cost Subtotal:	**$ 100,000.00**
				Sales Tax (8.2%):	$ 8,000.00
				Subtotal:	**$ 108,000.00**
				Contingency (20%):	$ 21,600.00
				Subtotal:	**$ 129,600.00**
				Engineering & Administration (15%):	**$ 19,400.00**
				Construction Engineering (15%):	**$ 19,400.00**
				TOTAL ESTIMATED COST	**$ 168,400.00**

City of SUNNYSIDE WASHINGTON

23

Grandview Reservoir Diver Reports

HLA Engineering and Land Surveying, Inc.

City of Sunnyside
409 E. Lincoln Avenue
Sunnyside, WA 98944

DIVER INSPECTION REPORT

Reservoir 1

784,000 G CONCRETE

Summary of Contents:

Written Report with Recommendations
Repair Cost Estimates

896 E 400 S #310 | New Harmony, UT 84757 | 1-866-237-3483

INSPECTION REPORT

Reservoir 1
784,000 Gallons
Concrete

Dimensions: 85’ Dia. x 15’ H
Inspection Date: 09-05-2023

Section A-1: General

An inspection and cleaning of the ground level water tank was conducted by Advanced Diving Services Inc. on according to contract number 23-126.

The inspection was conducted by certified dive personnel. An electronic recording is included with this report to provide video documentation of the inspection and cleaning work completed.

Sec. A-1.1 Scope

Every steel water storage tank, standpipe, or reservoir should be carefully inspected prior to repair and/or repainting and at any time when leakage or some other apparent deterioration is observed. In any event, **all water tanks should be thoroughly inspected at intervals of not more than five years** (*American Water Works Association*, M42 1998, p 132).

Sec. A-1.2 Inspection Service

Advanced Diving Services Incorporated (ADS) began commercially inspecting water storage tanks in April 2000. ADS is certified in Commercial Diving, Offshore Safety & Survival, Red Cross CPR and First Aid, Hazardous Materials Incident, Response Operations, YMCA Advanced Scuba, Liquid Penetrant - Levels I & II, Magnetic Particle - Levels I & II, Ultrasonic – Levels I & II, Rope Access Technician - Level I, Chevron Riggers
Endorsement and Nuclear Quality Assurance.

ADS adhere to American Water Works Association standards for inspecting and repairing water tanks, AWWA D101-53. All Dive Maintenance Technicians and associated in-tank equipment are fully disinfected according to AWWA Standard C652-92 before entering potable water. All ADS operations pertaining to Diving and Confined Space, conducted on your system follow all applicable OSHA, AWWA, and ADCI standards, procedures, and regulations (including 1910.401 thru 1910.441). All inspection personnel are fully qualified commercial dive maintenance technicians certified in ASNT Non-Destructive testing. All our repair, sealing and coating materials meet or exceed NSF 60 & 61 standards.

Sec. A-1.3 Responsibility

Advanced Diving Services (ADS) is fully licensed and insured to provide commercial diving services. ADS carries property damage and liability insurance with a combined single limit per occurrence of $2,000,000, aggregate $2,000,000. ADS reasonably protect the tank/reservoir owner/agent against claims arising out of the inspection or cleaning work we provide.

Sec. A-1.4 Draining of Tank

During inspection and or cleaning, reservoir water levels must be kept at or near full capacity unless noted otherwise. On the date of inspection water level was near full capacity.

Sec. A-1.5 Work Included

Inspections include field examination of the tank exterior, cleaning, and a full color video report of the tank interior conducted by certified dive personnel. Inspection work does not include repairs, except that, if vent screens, cotter pins or nut pins are found to be missing, they may be replaced at once, or reported promptly to the tank/reservoir owner/agent for replacement. No repairs were made immediately after inspection.

Section A-2: Executive Report Summary

Sec. A-2.1 Condition of Tank

Interior Walls
Interior walls are in good condition.
Tank Floor
The tank floor is in good condition.
Roof
Roof is in good condition.

Sec. A-2.2 Pitting

No pitting was observed. Pitting may be found under rust nodules on interior plumbing.

Sec. A-2.3 General Tank Condition

Vents and Screens
The roof vent is in good condition.
Interior Stairs
Stairs are in good condition.
Roof Access Hatch
The hatch is secure, and gasket is present. It meets AWWA guidelines for curb and water tightness.
Interior Plumbing
The interior plumbing is in good condition.
Ventilation
The vent and outlet are in good condition.
Outlet Silt Stop
A silt stop is present.
Sample Tap
No sample tap was observed at inspection. If one is not present, it is recommended to add one to meet the standard.
Sediment
Average compacted silt and debris depth was 1/2".
Water Condition
Water visibility was good with no particulates or oil found on the surface.
OSHA Safety
Recommend installing OSHA confined space entry placards at reservoir access/entry locations (1) total.

Sec. A-2.4 Repair Work Performed

Cleaning/removal of sediment and loose floor debris were performed. No other repairs were provided at this time.

Sec. A-2.5 Recommendations

See page 14 for a complete list of recommendations.

Section A-3: Inspection Details

INSPECTION AND RESERVOIR DATA			
Customer Name:	City of Sunnyside	**Reservoir Name:**	Reservoir 1
Contact Person:	Daniel Tiliano	Location:	Sunnyside, WA
Contact Phone:	590-890-9726	Type:	Reservoir
Job Number:	23-126	Material:	Concrete
Inspection Date:	09-05-2023	Capacity:	784,000
Dive Supervisor:	Joe Stein	Diameter:	85'
Diver:	Chris Eaves	Height:	15’
Tender:	Dillon M	Floor S.F.:	5,672
Last Inspection:	n/a	Built By:	
Last Cleaned By:	n/a	Built Date:	1950
Weather Condition:		Courses	

A-3a. Reservoir Condition, Safety and Sanitary Review

Applicable Industry Standard Design Criteria:
Sanitary Survey, AWWA, OSHA, and Washington State Administrative Code

1. **WAC 246-291-210 Finished water storage facilities – Distribution Systems.**
2. **AWWA Standard D-115-20 Tendon Prestressed Concrete Water Tanks**
3. **NFPA 22**
4. **OSHA**

	Standard	**Pass**	**Fail**	**Notes**
	1. WAC 246-291-210			**Recommendation**
1. Site 2. Roof 3. Hatch 4. Vent	1. All distribution reservoirs shall have suitable watertight roofs or covers preventing entry by birds, animals, insects, and dust and shall include appropriate provisions to safeguard against trespass, vandalism, and sabotage.	PASS		
Roof	(i) A weathertight roof	PASS		
Hatch	(ii) A lockable Access Hatch	PASS		
Vent Screen	(iii) screened roof vent	PASS		
Overflow	(iv)overflow pipe with atmospheric discharge			Unknown
Sample Tap	(v) A sample tap			Unknown
	(vi) a drain to daylight			Unknown
Isolation	(vii)Tank isolation capability	PASS		
Circulation	(viii) Maintain water circulation, prevent water stagnation, and provide adequate disinfection contact time	PASS		
	2. AWWA D-115-20 Standards			
Watertight	3.8.3.2 Watertightness. Roof	PASS		
Screens	5.7.2 Screens. Vent and overflow screens satisfactory condition to prevent birds, rodents, insects, other contaminates from entering tank.	PASS		
	3.13.2.5 Vent screens protected from vandalism and accessible for inspection and cleaning	PASS		
Watertight	6.1.1 Watertight walls. Seepage that produces moisture that can be picked up on a dry hand (wet spot) is not acceptable.	PASS		
Watertight	6.1.2 Watertight Wall-floor joint. Visible flow of water is not acceptable.	PASS		
Piping	3.13.1 Inlet and Outlet Piping promote circulation. (Directional inlets, baffles, separate inlet/outlet extra care w/ large tank	PASS		
Outlet	3.13.1.2 4” Min Removable Silt Stop	PASS		
Overflow	3.13.2.1 Overflow system capacity to meet maximum inflow rate			Unknown
Overflow Screen	3.13.2.1 Overflow Screen or Flap Valve			Unknown
Water Level	3.13.2.4 Water level gage or sensor			Unknown
Ladder	3.13.4 OSHA Compliant Ladder	PASS		
Ladder	3.13.4 Outside Ladder security provision	PASS		
Roof Opening	3.13.3.1 Prevent leakage, atop curb at least 4”, Cover downturn at least 2”, padlock	PASS		
Roof Hatch	3.13.3.1 Roof hatch at least 30” square	PASS		
Hatch Railing	3.13.3.1 Protective handrail near hatch to meet OSHA standards	PASS		

	Standard	Pass	Fail	Notes
				Recommendations
	NFPA Standards			
	Tank ventilation shall have a capacity of at least 1.5 times the area of the larger of the inlet or outlet.	PASS		
	EPA Region 8 Standards			
Roof Vent(s)	Downturned vent opening shall be at least 24" above the horizontal roof surface.			N/A
	Not having a #24 mesh vent screen triggers a significant deficiency.	PASS		
	Buried or Semi-buried tanks must have downturned vents.			N/A
	Elevated tank vent screens must be a minimum of 8" above roof surface	PASS		
	Chimney vents must have a hood to cover that extends down to cover the screen.	PASS		

Other Considerations

Item	Standard	Pass	Fail	Notes
Documentation	Photos or video taken If no, why not?	PASS		Photo and Video Documentation
Contamination	Contamination in the tank (e.g., floating debris, inspects, other animal contamination, roots etc.)?	PASS		
Water	Water turbid, discolored, stale or foul?	PASS		
	Is stored water routinely turned over (standpipe with valves or mechanical mixer), even in times of low demand?			unknown
Interior Coating	Interior coating: blistering, peeling, scaling, rusting, any irregularities or other failure?	PASS		
Exterior coating	Exterior coating: blistering, peeling, scaling, rusting, any irregularities, or other failure?	PASS		
Sidewalls	Structural deficiencies, any irregularities or other failure?	PASS		
Interior roof	Structural deficiencies, any irregularities or other failure?	PASS		
Interior roof hatch	Structural deficiencies, any irregularities or other failure?	PASS		
Tank Floor	Floor corrosion or any structural deficiencies or irregularities?	PASS		
Floor Sediment	Type and depth of floor sediment Was sediment before cleaning over ¼" (effective depth of chlorine penetration)?		FAIL	1/2" removed with cleaning
Tank Penetrations	Tank penetrations (joints, gaskets), as seen from interior, adequately sealed?	PASS		
Watertight roof	When viewed from inside the tank, is there visible daylight around the hatches, vents, joints, or other fixtures? If yes, document location where light can be observed.	PASS		
	2. Standard NFPA 22			
Ventilation	Is there adequate ventilation as defined by NFPA with ventilation 1 ½ times the greater capacity of the inlet or outlet.	PASS		
Inlet Size	Inlet pipe diameter			Unknown
Outlet Size	Outlet pipe diameter			Unknown
Roof Vent Size	Roof Vent diameter			Unknown
	3. Misc. OSHA Standards			
Confined Space	Are confined space entry placards in place on or near reservoir access points?		FAIL	Need to install (1) placard
Ladder Cage	Are ladder cage(s) present?			N/A
Fall arrest	Are personal fall arrest systems in place?			N/A
Access	Are locking ladder gate(s) present?			N/A
Other	Any other concerns?			

(#1) Site #1

(#4) Site #4

(#2) Site #2

(#5) Site #5

(#3) Site #3

(#6) Vent

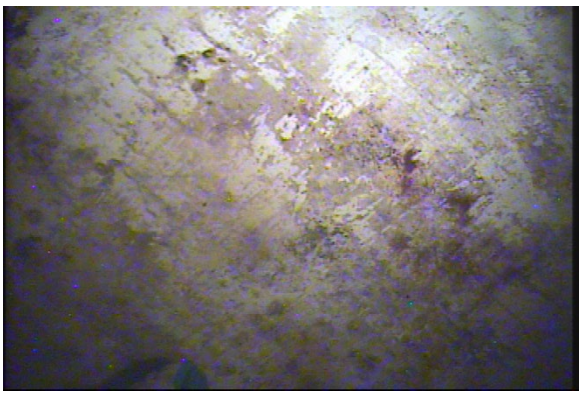
(#7) Vent Screen

(#10) Interior Condition Above the Water Line

(#8) Site #6

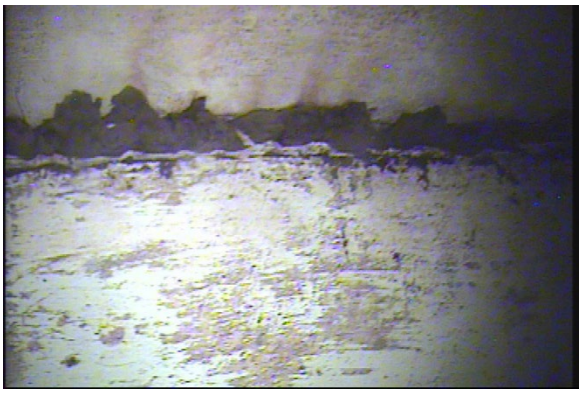
(#11) Interior Stairs

(#9) Hatch Gasket

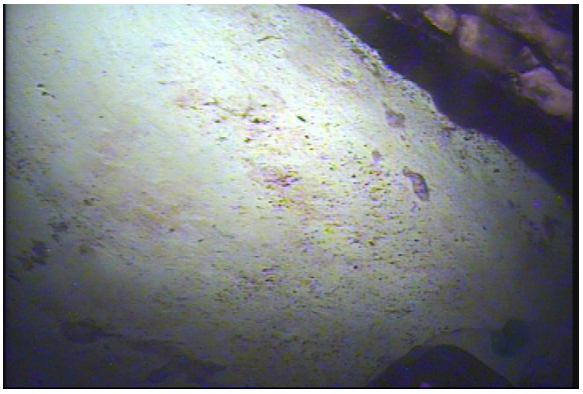


(#12) Wall Condition #1

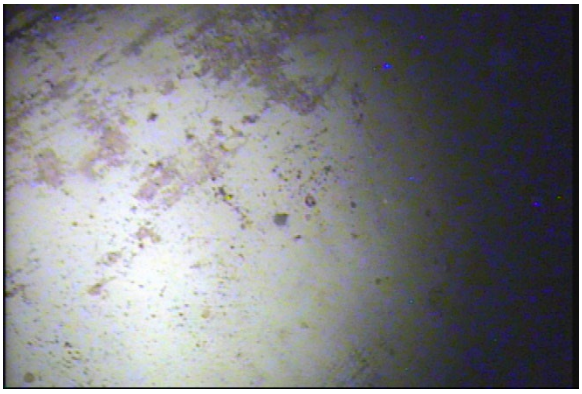
(#13) Wall Condition #2



(#16) Floor to Wall Seam



(#14) Floor Condition #1



(#17) Floor Condition

(#15) Floor To Wall Seam

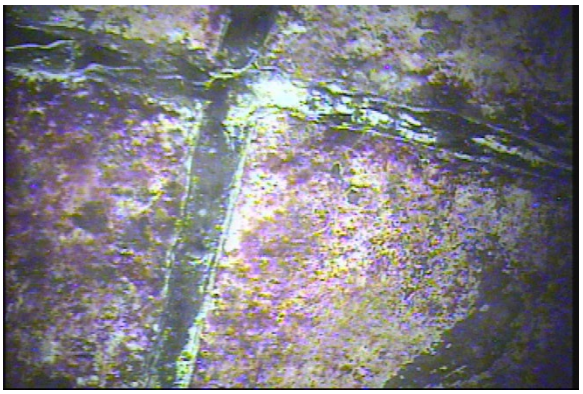
(#18) Interior Column Base

(#19) Floor Seam Sealant

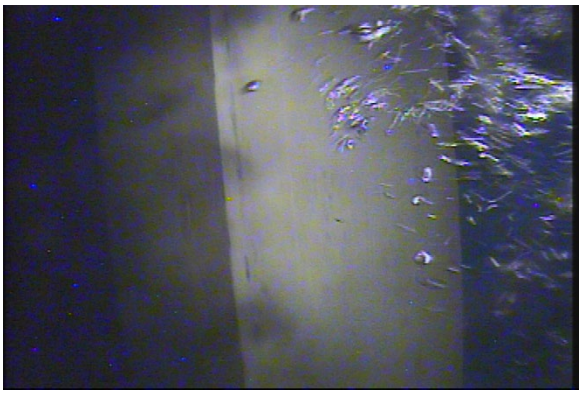
(#22) Floor to Wall Condition #3

(#20) Interior Plumbing #3

(#23) Interior Plumbing #4



(#21) Floor Seam Sealant



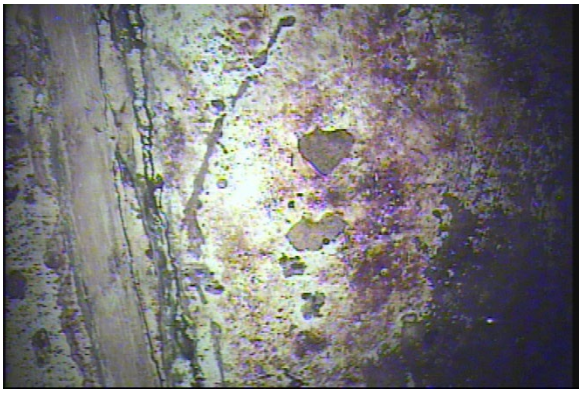
(#24) Interior Column

(#25) Interior Column

(#28) Tank Cleaning #1

(#26) Wall Condition #4

(#29) Tank Cleaning #2



(#27) Wall Condition #5

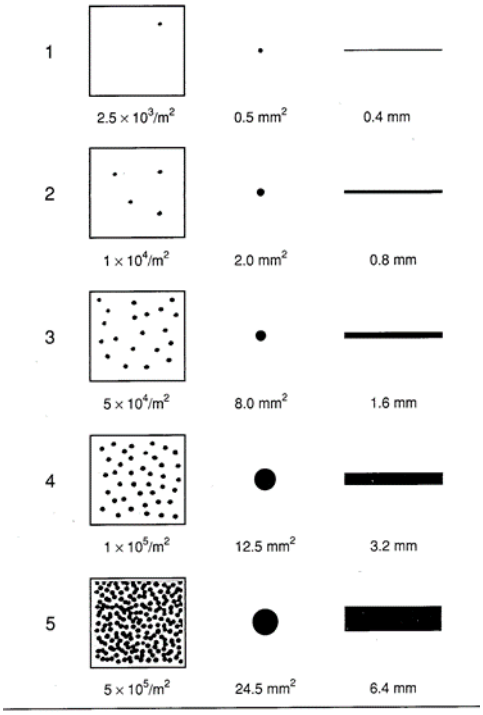
Corrosion Evaluation

The concrete structure is in good condition.

Corrosion areas are not represented on the ASTM chart.

The depth of corrosion was not measured.

STANDARD RATING CHART FOR PITS



Source: ASTM, G 46, Fig. 2 (2000 Edition). Reprinted, with permission, copyright ASTM.

Conclusion and Recommendations

Tank Condition

EXTERIOR: GOOD
INTERIOR: GOOD

Recommendations

Immediate

1. **Install (1) OSHA confined space entry placard to be placed on the roof access hatch.**

Special notes:

Ongoing Maintenance

- **Inspection and cleaning every 3-4 years.**

ESTIMATED COST OF REPAIRS

#	RECOMMENDATION(S)	Time Estimate	Count	Unit Cost	Total
	IMMEDIATE REPAIR				
1	**Install OSHA confined space placards**	1 day	1	$48.00	$48.00
	NOT-IMMEDIATE				

All surface and underwater repairs and recommendations, except sandblasting, can be performed by Advanced Diving Services, Inc. with the reservoir remaining in service.

ADVANCED DIVING SERVICES, INC. ®

James M. Nilsson, Director

City of Sunnyside
409 E. Lincoln Avenue
Sunnyside, WA 98944

DIVER INSPECTION REPORT

Reservoir 2

784,000 G BELOW-GRADE CONCRETE

Summary of Contents:

896 E 400 S #310 | New Harmony, UT 84757 | 1-866-237-3483

INSPECTION REPORT

Reservoir 2
784,000 Gallons
Below-Grade Concrete

Dimensions: 85’ Dia. x 15’ H
Inspection Date: 09-05-2023

Section A-1: General

An inspection and cleaning of the ground level water tank was conducted by Advanced Diving Services Inc. on according to contract number 23-126.

The inspection was conducted by certified dive personnel. An electronic recording is included with this report to provide video documentation of the inspection and cleaning work completed.

Sec. A-1.1 Scope

Every steel water storage tank, standpipe, or reservoir should be carefully inspected prior to repair and/or repainting and at any time when leakage or some other apparent deterioration is observed. In any event, **all water tanks should be thoroughly inspected at intervals of not more than five years** (*American Water Works Association*, M42 1998, p 132).

Sec. A-1.2 Inspection Service

Advanced Diving Services Incorporated (ADS) began commercially inspecting water storage tanks in April 2000. ADS is certified in Commercial Diving, Offshore Safety & Survival, Red Cross CPR and First Aid, Hazardous Materials Incident, Response Operations, YMCA Advanced Scuba, Liquid Penetrant - Levels I & II, Magnetic Particle - Levels I & II, Ultrasonic – Levels I & II, Rope Access Technician - Level I, Chevron Riggers
Endorsement and Nuclear Quality Assurance.

ADS adhere to American Water Works Association standards for inspecting and repairing water tanks, AWWA D101-53. All Dive Maintenance Technicians and associated in-tank equipment are fully disinfected according to AWWA Standard C652-92 before entering potable water. All ADS operations pertaining to Diving and Confined Space, conducted on your system follow all applicable OSHA, AWWA, and ADCI standards, procedures, and regulations (including 1910.401 thru 1910.441). All inspection personnel are fully qualified commercial dive maintenance technicians certified in ASNT Non-Destructive testing. All our repair, sealing and coating materials meet or exceed NSF 60 & 61 standards.

Sec. A-1.3 Responsibility

Advanced Diving Services (ADS) is fully licensed and insured to provide commercial diving services. ADS carries property damage and liability insurance with a combined single limit per occurrence of $2,000,000, aggregate $2,000,000. ADS reasonably protect the tank/reservoir owner/agent against claims arising out of the inspection or cleaning work we provide.

Sec. A-1.4 Draining of Tank

During inspection and or cleaning, reservoir water levels must be kept at or near full capacity unless noted otherwise. On the date of inspection water level was near full capacity.

Sec. A-1.5 Work Included

Inspections include field examination of the tank exterior, cleaning, and a full color video report of the tank interior conducted by certified dive personnel. Inspection work does not include repairs, except that, if vent screens, cotter pins or nut pins are found to be missing, they may be replaced at once, or reported promptly to the tank/reservoir owner/agent for replacement. No repairs were made immediately after inspection.

Section A-2: Executive Report Summary

Sec. A-2.1 Condition of Tank

Interior Walls
Interior walls are in good condition.
Tank Floor
The tank floor is in good condition with some spalling. See images #20 and 22-28. **Recommend repair.**

Sec. A-2.2 Pitting

No pitting was observed. Pitting may be found under rust nodules on interior plumbing.

Sec. A-2.3 General Tank Condition

Reservoir Site
The site is in good condition. There is no tank vandalism.
Fence
The fence is in good condition.
Roof
The roof is in good condition.
Access Hatch
The hatch and gasket are in good condition.
Vents and Screens
The roof vent is in good condition.
Interior Ladder
The internal ladder is in excellent condition with light corrosion.
Interior Plumbing
The interior plumbing is in good condition.
Ventilation
The vent and outlet are in good condition.
Outlet Silt Stop
A silt stop is present.
Sample Tap
No sample tap was observed at inspection. If one is not present, it is recommended to add one to meet the standard.
Sediment
Average compacted silt and debris depth was 1/2". **It is recommended to clean this reservoir more often to keep sediment accumulation below ¼". Chlorine disinfection is not effective at depths greater than ¼"**.
Water Condition
Water visibility was good with no particulates or oil found on the surface.
OSHA Safety
Recommend installing OSHA confined space entry placards at reservoir access/entry locations (1) total.

Sec. A-2.4 Repair Work Performed

Cleaning/removal of sediment and loose floor debris were performed. No other repairs were provided at this time.

Sec. A-2.5 Recommendations

See page 15 for a complete list of recommendations.

Section A-3: Inspection Details

INSPECTION AND RESERVOIR DATA			
Customer Name:	City of Sunnyside	**Reservoir Name:**	Reservoir 2
Contact Person:	Daniel Tiliano	Location:	Sunnyside, WA
Contact Phone:	590-890-9726	Type:	Below Grade
Job Number:	23-126	Material:	Concrete
Inspection Date:	09-05-2023	Capacity:	784,000
Dive Supervisor:	Joe Stein	Diameter:	85'
Diver:	Chris Eaves	Height:	15’
Tender:	Dillon M	Floor S.F.:	5,672
Last Inspection:	n/a	Built By:	
Last Cleaned By:	n/a	Built Date:	1950
Weather Condition:		Courses	

A-3a. Reservoir Condition, Safety and Sanitary Review

Applicable Industry Standard Design Criteria:
Sanitary Survey, AWWA, OSHA, and Washington State Administrative Code

1. **WAC 246-291-210 Finished water storage facilities – Distribution Systems.**
2. **AWWA Standard D-115-20 Tendon Prestressed Concrete Water Tanks**
3. **NFPA 22**
4. **OSHA**

	Standard	**Pass**	**Fail**	**Notes**
	1. WAC 246-291-210			**Recommendation**
1. Site 2. Roof 3. Hatch 4. Vent	1. All distribution reservoirs shall have suitable watertight roofs or covers preventing entry by birds, animals, insects, and dust and shall include appropriate provisions to safeguard against trespass, vandalism, and sabotage.	PASS		
Roof	(i) A weathertight roof	PASS		
Hatch	(ii) A lockable Access Hatch	PASS		
Vent Screen	(iii) screened roof vent	PASS		
Overflow	(iv)overflow pipe with atmospheric discharge			N/A
Sample Tap	(v) A sample tap			N/A
	(vi) a drain to daylight			N/A
Isolation	(vii)Tank isolation capability	PASS		
Circulation	(viii) Maintain water circulation, prevent water stagnation, and provide adequate disinfection contact time	PASS		
	2. AWWA D-115-20 Standards			
Watertight	3.8.3.2 Watertightness. Roof	PASS		
Screens	5.7.2 Screens. Vent and overflow screens satisfactory condition to prevent birds, rodents, insects, other contaminates from entering tank.	PASS		
	3.13.2.5 Vent screens protected from vandalism and accessible for inspection and cleaning	PASS		
Watertight	6.1.1 Watertight walls. Seepage that produces moisture that can be picked up on a dry hand (wet spot) is not acceptable.	PASS		
Watertight	6.1.2 Watertight Wall-floor joint. Visible flow of water is not acceptable.	PASS		
Piping	3.13.1 Inlet and Outlet Piping promote circulation. (Directional inlets, baffles, separate inlet/outlet extra care w/ large tank	PASS		
Outlet	3.13.1.2 4” Min Removable Silt Stop	PASS		
Overflow	3.13.2.1 Overflow system capacity to meet maximum inflow rate			N/A
Overflow Screen	3.13.2.1 Overflow Screen or Flap Valve			N/A
Water Level	3.13.2.4 Water level gage or sensor			N/A
Ladder	3.13.4 OSHA Compliant Ladder	PASS		
Ladder	3.13.4 Outside Ladder security provision			N/A
Roof Opening	3.13.3.1 Prevent leakage, atop curb at least 4”, Cover downturn at least 2”, padlock	PASS		
Roof Hatch	3.13.3.1 Roof hatch at least 30” square	PASS		
Hatch Railing	3.13.3.1 Protective handrail near hatch to meet OSHA standards	PASS		

	Standard	Pass	Fail	Notes
				Recommendations
	NFPA Standards			
	Tank ventilation shall have a capacity of at least 1.5 times the area of the larger of the inlet or outlet.	PASS		
	EPA Region 8 Standards			
Roof Vent(s)	Downturned vent opening shall be at least 24" above the horizontal roof surface.			N/A
	Not having a #24 mesh vent screen triggers a significant deficiency.	PASS		
	Buried or Semi-buried tanks must have downturned vents.	PASS		
	Elevated tank vent screens must be a minimum of 8" above roof surface	PASS		
	Chimney vents must have a hood to cover that extends down to cover the screen.	PASS		

Other Considerations

Item	Standard	Pass	Fail	Notes
Documentation	Photos or video taken If no, why not?	PASS		Photo and Video Documentation
Contamination	Contamination in the tank (e.g., floating debris, inspects, other animal contamination, roots etc.)?	PASS		
Water	Water turbid, discolored, stale or foul?	PASS		
	Is stored water routinely turned over (standpipe with valves or mechanical mixer), even in times of low demand?			unknown
Interior Coating	Interior coating: blistering, peeling, scaling, rusting, any irregularities or other failure?	PASS		Spalling noted
Exterior coating	Exterior coating: blistering, peeling, scaling, rusting, any irregularities, or other failure?	PASS		
Sidewalls	Structural deficiencies, any irregularities or other failure?	PASS		
Interior roof	Structural deficiencies, any irregularities or other failure?	PASS		
Interior roof hatch	Structural deficiencies, any irregularities or other failure?	PASS		
Tank Floor	Floor corrosion or any structural deficiencies or irregularities?	PASS		Spalling noted
Floor Sediment	Type and depth of floor sediment Was sediment before cleaning over ¼" (effective depth of chlorine penetration)?		FAIL	1/2" removed with cleaning
Tank Penetrations	Tank penetrations (joints, gaskets), as seen from interior, adequately sealed?	PASS		
Watertight roof	When viewed from inside the tank, is there visible daylight around the hatches, vents, joints, or other fixtures? If yes, document location where light can be observed.	PASS		
	2. Standard NFPA 22			
Ventilation	Is there adequate ventilation as defined by NFPA with ventilation 1 ½ times the greater capacity of the inlet or outlet.	PASS		
Inlet Size	Inlet pipe diameter			Unknown
Outlet Size	Outlet pipe diameter			Unknown
Roof Vent Size	Roof Vent diameter			Unknown
	3. Misc. OSHA Standards			
Confined Space	Are confined space entry placards in place on or near reservoir access points?		FAIL	Need to install (1) placard
Ladder Cage	Are ladder cage(s) present?			N/A
Fall arrest	Are personal fall arrest systems in place?			N/A
Access	Are locking ladder gate(s) present?			N/A
Other	Any other concerns?			

(#1) Site #1

(#4) Site #4

(#2) Site #2

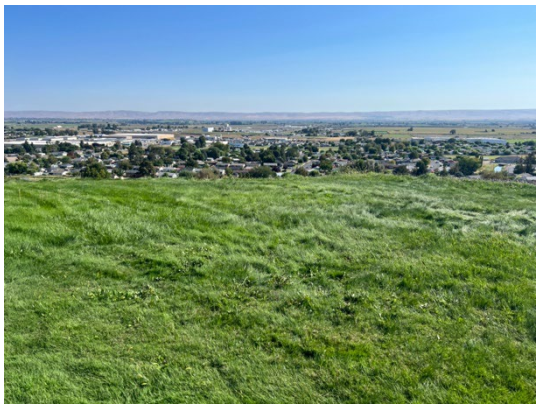
(#5) Site #5

(#3) Site #3

(#6) Vent

(#7) Vent Screen

(#10) Site



(#8) Site

(#11) Exterior Stairs

(#9) Site #7

(#12) Exterior Electrical and Access Hatch

(#13) Site #8

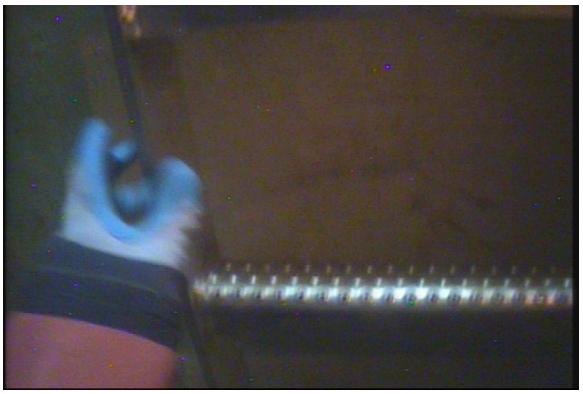
(#16) Access Hatch with Interior Ladder

(#14) Access Hatch

(#17) Ceiling Condition

(#15) Access Hatch Gasket

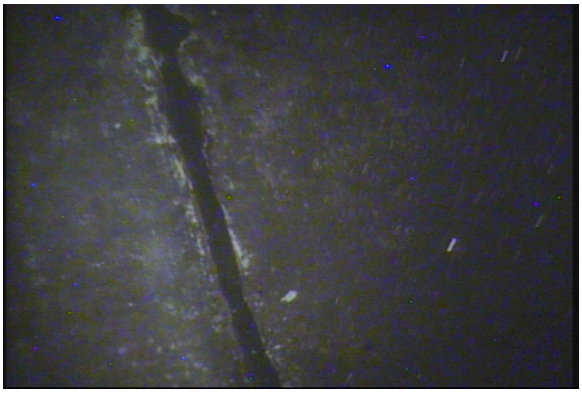
(#18) Interior Ladder Condition #1



(#19) Interior Ladder Condition #2

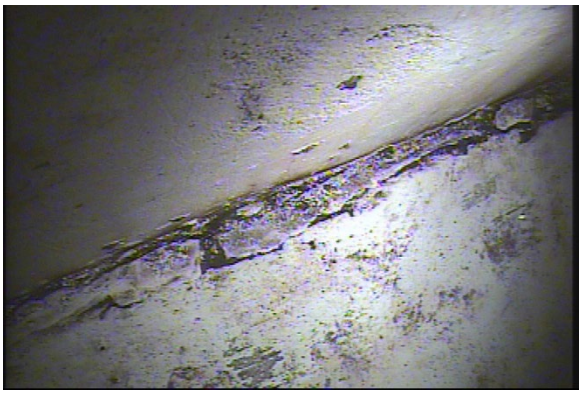
(#22) Floor Condition

(#20) Floor to Wall #1

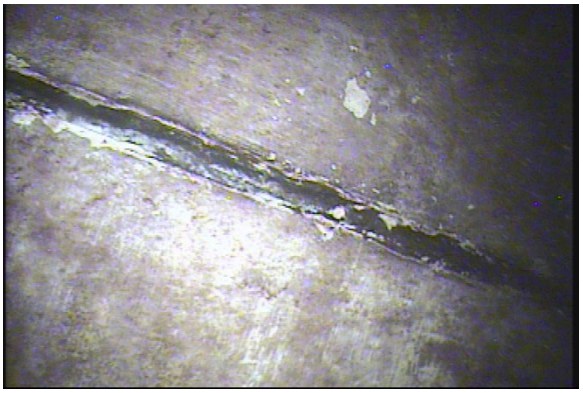


(#23) Floor to Wall #2

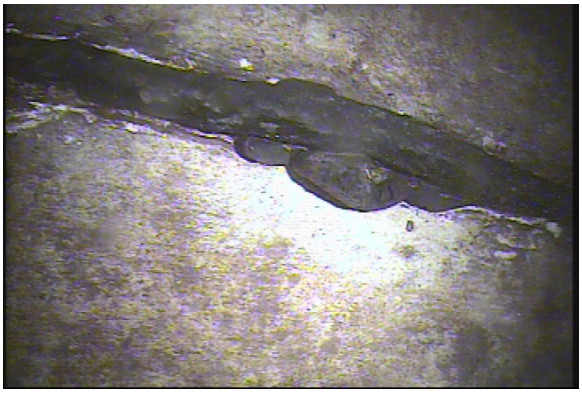
(#21) Interior Column



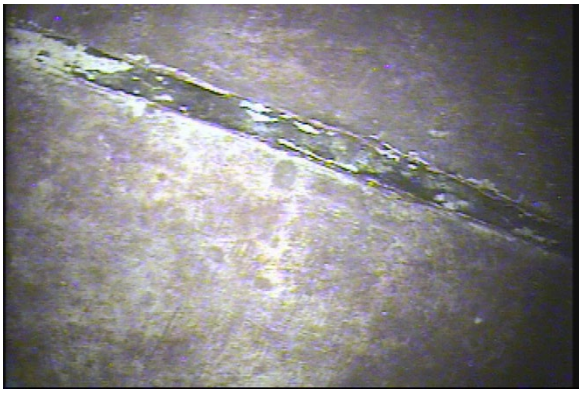
(#24) Floor to Wall #3



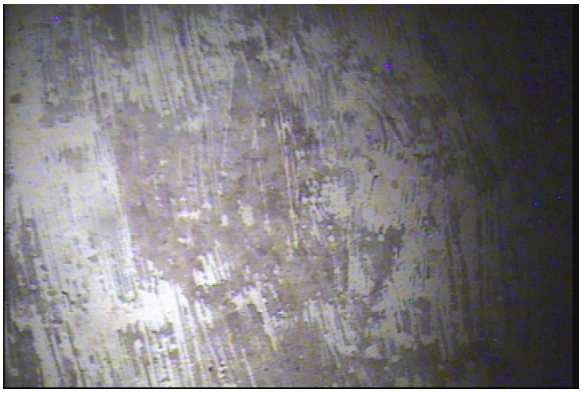
(#25) Floor Seam Sealant



(#28) Floor to Wall #7



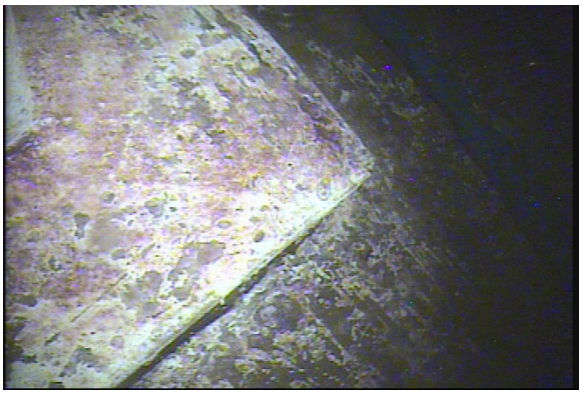
(#26) Floor to Wall #5



(#29) Wall Condition #1

(#27) Floor to Wall #6

(#30) Interior Columnn



(#31) Interior Column Base

(#32) Tank Cleaning #1

(#33) Tank Cleaning #2

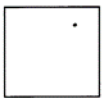
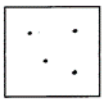
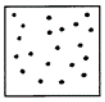
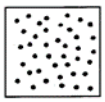
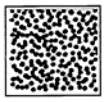
Corrosion Evaluation

The concrete structure is in good condition.

These corrosion areas are not represented on the ASTM chart.

The depth of corrosion was not measured.

STANDARD RATING CHART FOR PITS

	A Density	B Size	C Depth
1	 $2.5 \times 10^3/m^2$	$0.5\ mm^2$	0.4 mm
2	 $1 \times 10^4/m^2$	$2.0\ mm^2$	0.8 mm
3	 $5 \times 10^4/m^2$	$8.0\ mm^2$	1.6 mm
4	 $1 \times 10^5/m^2$	$12.5\ mm^2$	3.2 mm
5	 $5 \times 10^5/m^2$	$24.5\ mm^2$	6.4 mm

Source: ASTM, G 46, Fig. 2 (2000 Edition). Reprinted, with permission, copyright ASTM.

Conclusion and Recommendations

Tank Condition

EXTERIOR: GOOD
INTERIOR: GOOD

Recommendations

Immediate

1. **Install (1) OSHA confined space entry placard to be placed on the roof access hatch.**

Special notes:

Sediment depth was over ¼". It is recommended to clean this reservoir more often to keep sediment accumulation below ¼". Chlorine disinfection is not effective at depths greater than ¼".

Ongoing Maintenance

- **Inspection and cleaning every 1-2 years.**

ESTIMATED COST OF REPAIRS

#	RECOMMENDATION(S)	Time Estimate	Count	Unit Cost	Total
	IMMEDIATE REPAIR				
1	**Install OSHA confined space placards**	1 day	1	$48.00	$48.00
	NOT-IMMEDIATE				

All surface and underwater repairs and recommendations, except sandblasting, can be performed by Advanced Diving Services, Inc. with the reservoir remaining in service.

ADVANCED DIVING SERVICES, INC. ®

James M. Nilsson, Director

City of Sunnyside
409 E. Lincoln Avenue
Sunnyside, WA 98944

DIVER INSPECTION REPORT

Reservoir 3

847,000 G On-Grade Concrete

Summary of Contents:

Written Report with Recommendations
Repair Cost Estimates

896 E 400 S #310 | New Harmony, UT 84757 | 1-866-237-3483

INSPECTION REPORT

Reservoir 3
847,000 Gallons
On-Grade Concrete

Dimensions: 81' Dia. x 25' H
Inspection Date: 09-05-2023

Section A-1: General

An inspection and cleaning of the ground level water tank was conducted by Advanced Diving Services Inc. on according to contract number 23-126.

The inspection was conducted by certified dive personnel. An electronic recording is included with this report to provide video documentation of the inspection and cleaning work completed.

Sec. A-1.1 Scope

Every steel water storage tank, standpipe, or reservoir should be carefully inspected prior to repair and/or repainting and at any time when leakage or some other apparent deterioration is observed. In any event, **all water tanks should be thoroughly inspected at intervals of not more than five years** (*American Water Works Association*, M42 1998, p 132).

Sec. A-1.2 Inspection Service

Advanced Diving Services Incorporated (ADS) began commercially inspecting water storage tanks in April 2000. ADS is certified in Commercial Diving, Offshore Safety & Survival, Red Cross CPR and First Aid, Hazardous Materials Incident, Response Operations, YMCA Advanced Scuba, Liquid Penetrant - Levels I & II, Magnetic Particle - Levels I & II, Ultrasonic – Levels I & II, Rope Access Technician - Level I, Chevron Riggers
Endorsement and Nuclear Quality Assurance.

ADS adhere to American Water Works Association standards for inspecting and repairing water tanks, AWWA D101-53. All Dive Maintenance Technicians and associated in-tank equipment are fully disinfected according to AWWA Standard C652-92 before entering potable water. All ADS operations pertaining to Diving and Confined Space, conducted on your system follow all applicable OSHA, AWWA, and ADCI standards, procedures, and regulations (including 1910.401 thru 1910.441). All inspection personnel are fully qualified commercial dive maintenance technicians certified in ASNT Non-Destructive testing. All our repair, sealing and coating materials meet or exceed NSF 60 & 61 standards.

Sec. A-1.3 Responsibility

Advanced Diving Services (ADS) is fully licensed and insured to provide commercial diving services. ADS carries property damage and liability insurance with a combined single limit per occurrence of $2,000,000, aggregate $2,000,000. ADS reasonably protect the tank/reservoir owner/agent against claims arising out of the inspection or cleaning work we provide.

Sec. A-1.4 Draining of Tank

During inspection and or cleaning, reservoir water levels must be kept at or near full capacity unless noted otherwise. On the date of inspection water level was near full capacity.

Sec. A-1.5 Work Included

Inspections include field examination of the tank exterior, cleaning, and a full color video report of the tank interior conducted by certified dive personnel. Inspection work does not include repairs, except that, if vent screens, cotter pins or nut pins are found to be missing, they may be replaced at once, or reported promptly to the tank/reservoir owner/agent for replacement. No repairs were made immediately after inspection.

Section A-2: Executive Report Summary

Sec. A-2.1 Condition of Tank

Interior Walls
Interior walls are in good condition.
Tank Floor
The tank floor is in good condition The floor seam sealant is beginning to deteriorate and will need to be replaced in 5-7 years.

Sec. A-2.2 Pitting

No pitting was observed. Pitting may be found under rust nodules on interior plumbing.

Sec. A-2.3 General Tank Condition

Roof
The roof is in good condition.
Access Hatch
The hatch and gasket are in good condition.
Vents and Screens
The roof vent is in good condition.
Interior Ladder
The internal ladder is in good condition.
Interior Plumbing
The interior plumbing is in good condition.
Ventilation
The vent and outlet are in good condition.
Outlet Silt Stop
A silt stop is present.
Sample Tap
No sample tap was observed at inspection. If one is not present, it is recommended to add one to meet the standard.
Sediment
Average compacted silt and debris depth was 1/4".
Water Condition
Water visibility was good with no particulates or oil found on the surface.
OSHA Safety
Recommend installing OSHA confined space entry placards at reservoir access/entry locations (1) total.

Sec. A-2.4 Repair Work Performed

Cleaning/removal of sediment and loose floor debris were performed. No other repairs were provided at this time.

Sec. A-2.5 Recommendations

See page 15 for a complete list of recommendations.

Section A-3: Inspection Details

INSPECTION AND RESERVOIR DATA			
Customer Name:	City of Sunnyside	**Reservoir Name:**	Reservoir 3
Contact Person:	Daniel Tiliano	Location:	Sunnyside, WA
Contact Phone:	590-890-9726	Type:	Semi-Buried
Job Number:	23-126	Material:	Concrete
Inspection Date:	09-05-2023	Capacity:	847,000
Dive Supervisor:	Joe Stein	Diameter:	81'
Diver:	Chris Eaves	Height:	25’
Tender:	Dillon M	Floor S.F.:	5,151
Last Inspection:	n/a	Built By:	
Last Cleaned By:	n/a	Built Date:	1950
Weather Condition:		Courses	

A-3a. Reservoir Condition, Safety and Sanitary Review

Applicable Industry Standard Design Criteria:
Sanitary Survey, AWWA, OSHA, and Washington State Administrative Code

1. **WAC 246-291-210 Finished water storage facilities – Distribution Systems.**
2. **AWWA Standard D-115-20 Tendon Prestressed Concrete Water Tanks**
3. **NFPA 22**
4. **OSHA**

	Standard	**Pass**	**Fail**	**Notes**
	1. WAC 246-291-210			**Recommendation**
1. Site 2. Roof 3. Hatch 4. Vent	1. All distribution reservoirs shall have suitable watertight roofs or covers preventing entry by birds, animals, insects, and dust and shall include appropriate provisions to safeguard against trespass, vandalism, and sabotage.	PASS		
Roof	(i) A weathertight roof	PASS		
Hatch	(ii) A lockable Access Hatch	PASS		
Vent Screen	(iii) screened roof vent	PASS		
Overflow	(iv)overflow pipe with atmospheric discharge			N/A
Sample Tap	(v) A sample tap			N/A
	(vi) a drain to daylight			N/A
Isolation	(vii)Tank isolation capability	PASS		
Circulation	(viii) Maintain water circulation, prevent water stagnation, and provide adequate disinfection contact time	PASS		
	2. AWWA D-115-20 Standards			
Watertight	3.8.3.2 Watertightness. Roof	PASS		
Screens	5.7.2 Screens. Vent and overflow screens satisfactory condition to prevent birds, rodents, insects, other contaminates from entering tank.	PASS		
	3.13.2.5 Vent screens protected from vandalism and accessible for inspection and cleaning	PASS		
Watertight	6.1.1 Watertight walls. Seepage that produces moisture that can be picked up on a dry hand (wet spot) is not acceptable.	PASS		
Watertight	6.1.2 Watertight Wall-floor joint. Visible flow of water is not acceptable.	PASS		
Piping	3.13.1 Inlet and Outlet Piping promote circulation. (Directional inlets, baffles, separate inlet/outlet extra care w/ large tank	PASS		
Outlet	3.13.1.2 4” Min Removable Silt Stop	PASS		
Overflow	3.13.2.1 Overflow system capacity to meet maximum inflow rate	PASS		
Overflow Screen	3.13.2.1 Overflow Screen or Flap Valve			Unknown
Water Level	3.13.2.4 Water level gage or sensor			Unknown
Ladder	3.13.4 OSHA Compliant Ladder	PASS		
Ladder	3.13.4 Outside Ladder security provision	PASS		
Roof Opening	3.13.3.1 Prevent leakage, atop curb at least 4”, Cover downturn at least 2”, padlock	PASS		
Roof Hatch	3.13.3.1 Roof hatch at least 30” square	PASS		
Hatch Railing	3.13.3.1 Protective handrail near hatch to meet OSHA standards	PASS		

	Standard	Pass	Fail	Notes
				Recommendations
	NFPA Standards			
	Tank ventilation shall have a capacity of at least 1.5 times the area of the larger of the inlet or outlet.	PASS		
	EPA Region 8 Standards			
Roof Vent(s)	Downturned vent opening shall be at least 24" above the horizontal roof surface.			Unknown
	Not having a #24 mesh vent screen triggers a significant deficiency.	PASS		
	Buried or Semi-buried tanks must have downturned vents.	PASS		
	Elevated tank vent screens must be a minimum of 8" above roof surface	PASS		
	Chimney vents must have a hood to cover that extends down to cover the screen.	PASS		

Other Considerations

Item	Standard	Pass	Fail	Notes
Documentation	Photos or video taken If no, why not?	PASS		Photo and Video Documentation
Contamination	Contamination in the tank (e.g., floating debris, inspects, other animal contamination, roots etc.)?	PASS		
Water	Water turbid, discolored, stale or foul?	PASS		
	Is stored water routinely turned over (standpipe with valves or mechanical mixer), even in times of low demand?			unknown
Interior Coating	Interior coating: blistering, peeling, scaling, rusting, any irregularities or other failure?	PASS		Spalling noted
Exterior coating	Exterior coating: blistering, peeling, scaling, rusting, any irregularities, or other failure?	PASS		
Sidewalls	Structural deficiencies, any irregularities or other failure?	PASS		
Interior roof	Structural deficiencies, any irregularities or other failure?	PASS		
Interior roof hatch	Structural deficiencies, any irregularities or other failure?	PASS		
Tank Floor	Floor corrosion or any structural deficiencies or irregularities?	PASS		Spalling noted
Floor Sediment	Type and depth of floor sediment Was sediment before cleaning over ¼" (effective depth of chlorine penetration)?	PASS		1/4" removed with cleaning
Tank Penetrations	Tank penetrations (joints, gaskets), as seen from interior, adequately sealed?	PASS		
Watertight roof	When viewed from inside the tank, is there visible daylight around the hatches, vents, joints, or other fixtures? If yes, document location where light can be observed.	PASS		
	2. Standard NFPA 22			
Ventilation	Is there adequate ventilation as defined by NFPA with ventilation 1 ½ times the greater capacity of the inlet or outlet.	PASS		
Inlet Size	Inlet pipe diameter			Unknown
Outlet Size	Outlet pipe diameter			Unknown
Roof Vent Size	Roof Vent diameter			Unknown
	3. Misc. OSHA Standards			
Confined Space	Are confined space entry placards in place on or near reservoir access points?		FAIL	Need to install (1) placard
Ladder Cage	Are ladder cage(s) present?	PASS		
Fall arrest	Are personal fall arrest systems in place?	PASS		
Access	Are locking ladder gate(s) present?	PASS		
Other	Any other concerns?			

(#1) Site, Site Foundation, Exterior Tank Condition, and Exterior Ladder

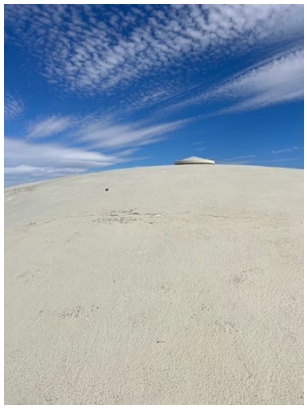
(#4) Course Condition and Exterior Ladder #1

(#2) Site, Site Foundation, and Exterior Tank Condition

(#5) Exterior Ladder with Fall Arrest Safety Cable

(#3) Course Condition

(#6) Course Condition and Exterior Ladder #3



(#7) Roof Condition #1

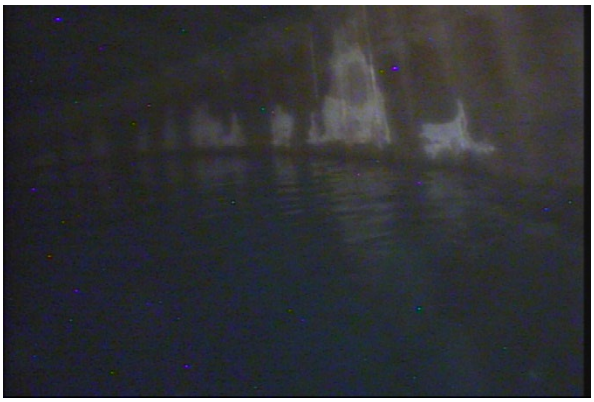
(#8) Roof Condition #2

(#9) Roof Condition #3

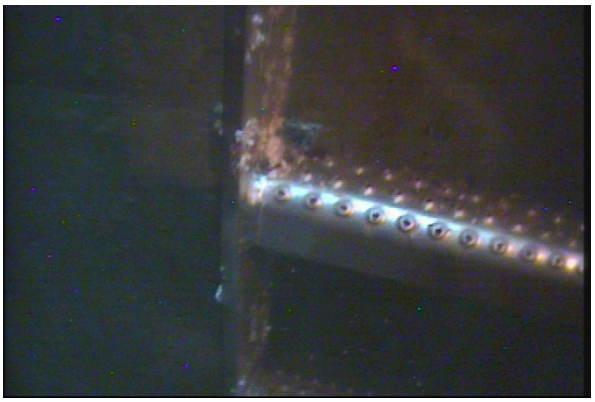
(#10) Roof Access Hatch

(#11) Access Hatch Gasket

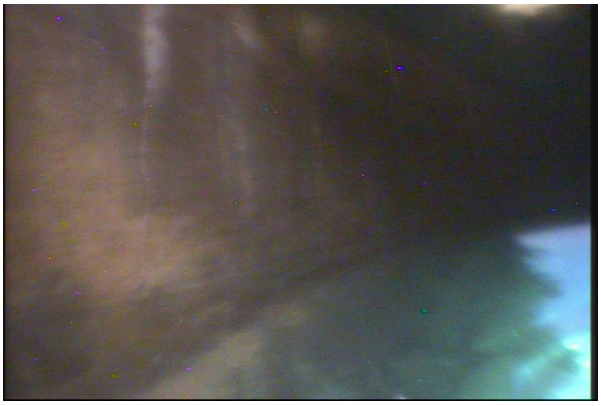
(#12) Interior of Access Hatch



(#13) Ceiling Condition #1



(#16) Interior Ladder Condition #1



(#14) Ceiling Condition #2

(#17) Interior Ladder Condition #2

(#15) Wall Condition #1

(#18) Wall Condition #2

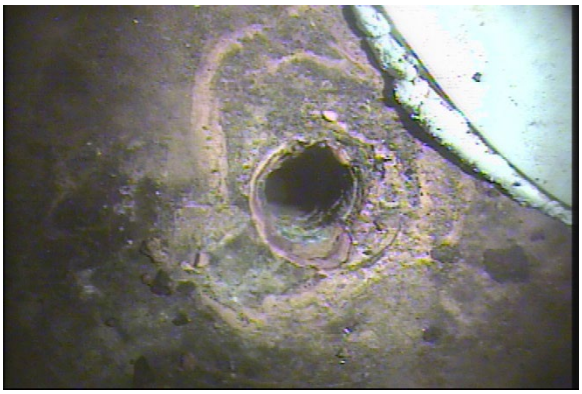
(#19) Floor Seam Sealant

(#22) Wall Condition #4

(#20) Floor Condition #2

(#23) Manway

(#21) Wall Condition #3

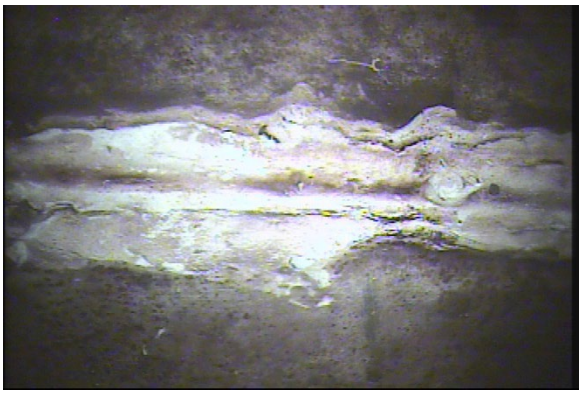


(#24) Interior Plumbing #1

(#25) Outlet with Silt Stop

(#28) Floor Seam Sealant

(#26) Wall Condition #5



(#29) Floor Seam Sealant

(#27) Floor to Wall Condition #1

(#30) Floor Condition #5

(#31) Floor to Wall Condition #2

(#34) Floor Condition #7

(#32) Floor to Wall Condition #3

(#35) Tank Cleaning #1

(#33) Floor Condition #6

(#36) Tank Cleaning #2

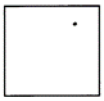
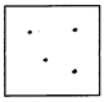
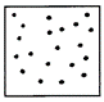
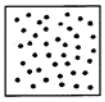
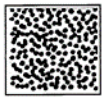
Corrosion Evaluation

The concrete structure is in good condition with noticeable spalling.

These corrosion areas are not represented on the ASTM chart.

The depth of corrosion was not measured.

STANDARD RATING CHART FOR PITS

	A	B	C
	Density	Size	Depth
1			
	$2.5 \times 10^3/m^2$	0.5 mm^2	0.4 mm
2			
	$1 \times 10^4/m^2$	2.0 mm^2	0.8 mm
3			
	$5 \times 10^4/m^2$	8.0 mm^2	1.6 mm
4			
	$1 \times 10^5/m^2$	12.5 mm^2	3.2 mm
5			
	$5 \times 10^5/m^2$	24.5 mm^2	6.4 mm

Source: ASTM, G 46, Fig. 2 (2000 Edition). Reprinted, with permission, copyright ASTM.

Conclusion and Recommendations

Tank Condition

EXTERIOR: GOOD
INTERIOR: GOOD

Recommendations

Immediate

1. **Install (1) OSHA confined space entry placard to be placed on the roof access hatch.**

Special notes:

The floor seam sealant is beginning to deteriorate and will need to be replaced in 5-7 years.

Ongoing Maintenance

- **Inspection and cleaning every 3-4 years.**

ESTIMATED COST OF REPAIRS

#	RECOMMENDATION(S)	Time Estimate	Count	Unit Cost	Total
	IMMEDIATE REPAIR				
1	**Install OSHA confined space placards**	1 day	1	$48.00	$48.00
	NOT-IMMEDIATE				

All surface and underwater repairs and recommendations, except sandblasting, can be performed by Advanced Diving Services, Inc. with the reservoir remaining in service.

ADVANCED DIVING SERVICES, INC. ®

James M. Nilsson, Director

City of SUNNYSIDE WASHINGTON

24

Wellhead Contaminant Notifications

HLA Engineering and Land Surveying, Inc.

City of SUNNYSIDE WASHINGTON

25

Lead and Copper Monitoring Plan

HLA Engineering and Land Surveying, Inc.

SUNNYSIDE

Department of Public Works
818 East Edison Avenue
Sunnyside, WA 98944
Office: 509-837-5206 • Fax: 509-837-3268

Date: _____

Dear Customer:

The City of Sunnyside is once again testing the water system for lead and copper according to the rules set forth by the Environmental Protection Agency and the Washington State Department of Health. The City would appreciate using your residence as a sampling site.

The samples can only be taken after the water in your tap has been motionless for at least 6 hours, and then drawn from your kitchen cold water tap. Therefore, we are asking you to take the sample.

SAMPLING FOR LEAD / COPPER

The sampling process is as follows:

STEP # 1: Write on the bottle the DATE and TIME the sample was collected.

STEP # 2: Fill the bottle from the COLD water tap. Remember, the water must be motionless for 6 hours and fill the bottle with the first quart that comes out of the tap. DO NOT let the water run prior to taking the sample.

STEP # 3: Place on your front porch/steps for collection or please bring the sample to City Hall.

I want to thank you for your cooperation. If you have any questions please call the Public Works office at 837-5206

Sincerely,

Kirk Weets
Sunnyside Water Division

City of Sunnyside
Public Works Department
818 E Edison Ave
Sunnyside WA 98944

Phone: 509-837-5206
Fax: 509-837-3268

CONSUMER NOTICE
Lead and Copper Water Sample Results

The CITY OF SUNNYSIDE, WA Water System, ID # 85400 3 , is providing you with the lead and copper test results on the water sample collected at your location on _____. Please share this notice with everyone who uses or drinks the water.

The following results are for «sample_location»:

Lead = «lead» mg/L **Copper =** «copper» mg/L

The maximum contaminant level goal (MCLG) is the level of a contaminant in drinking water below which there are no known or expected risks to health. MCLGs allow for a margin of safety. The action level is the concentration of a contaminant that, if exceeded, triggers treatment requirements or actions a water system must follow.

- The MCLG for lead is "0" and the action level is 15 ppb (or .015 mg/L).
- The MCLG and action level for copper is 1,300 ppb (or 1.3 mg/L).

The water system's compliance with the Lead and Copper Rule (LCR) is calculated by using sample results collected from sites in our sampling pool. Your location's lead or copper results may be higher or lower than the compliance calculation for the overall water system and does not reflect our water system's compliance with the LCR. We will notify all water users if the lead or copper results from our water system exceed the action level.

For more information, please contact:

City of Sunnyside
Public Works Department
509-837-5206
818 E Edison Ave
Sunnyside WA 98944

This notice is being sent to you on _____ .

Please turn over for important information on lead and copper.

HOW LEAD GETS INTO WATER

Lead in drinking water most often comes from water distribution lines or household plumbing rather than from the water system source. Plumbing sources can include lead pipes, lead solder, faucets, valves, and other components made of brass. Lead from other sources (such as lead-based paint and contaminated dust or soil) can increase a person's overall exposure, which adds to the effects of lead in water.

POTENTIAL HEALTH EFFECTS OF LEAD

The greatest risk of lead exposure is to infants, young children, and pregnant women. Lead can cause serious health problems if too much enters the body. Lead is stored in the bones and can be released later in life. Lead can cause damage to the brain and kidneys, interfere with production of red blood cells that carry oxygen, and may result in lowered IQ in children. During pregnancy, the child receives lead from the mother's bones, which may affect brain development. Low levels of lead can affect adults with high blood pressure or kidney problems.

HOW COPPER GETS INTO WATER

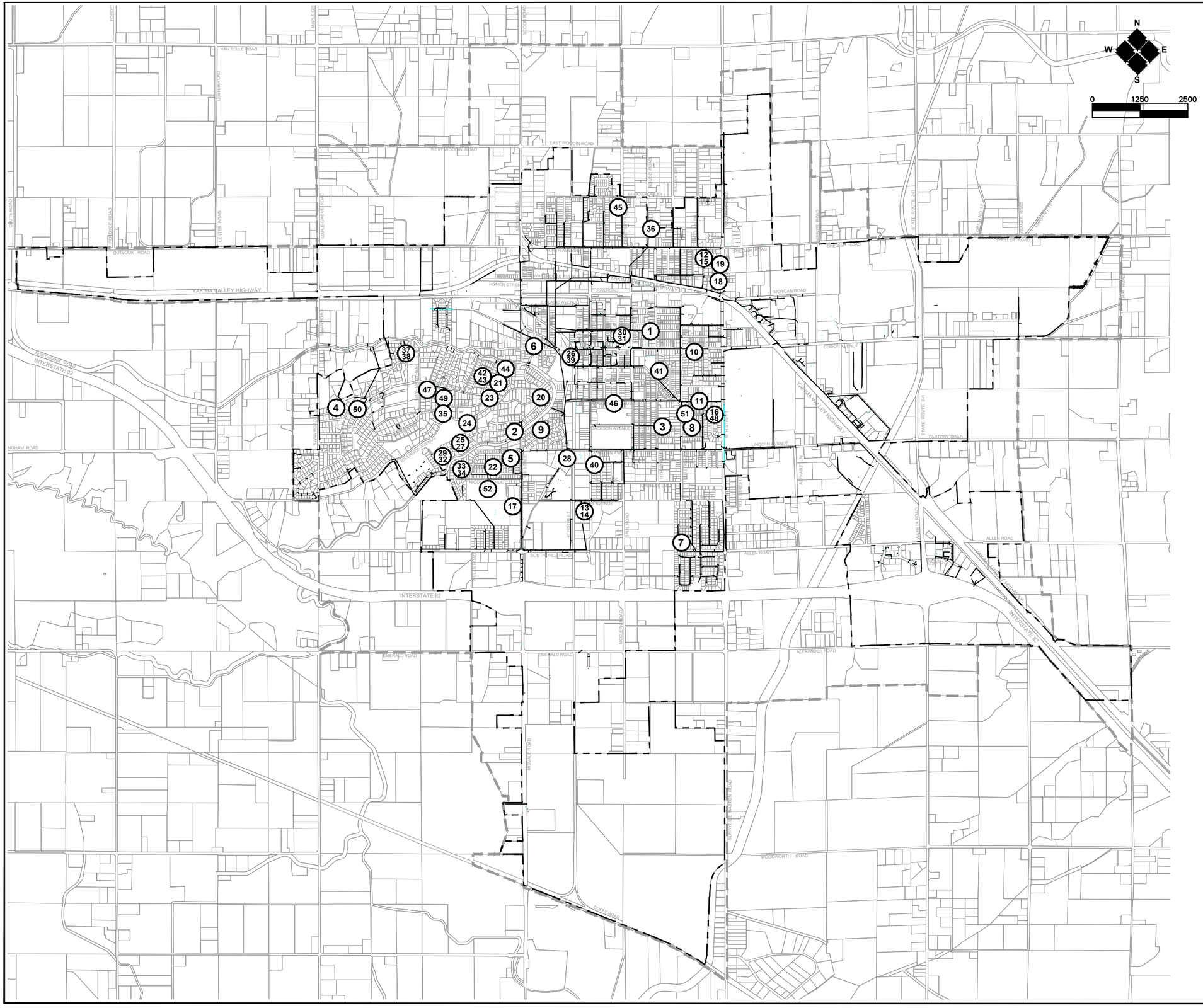
Copper is a mineral and natural component in soils. In the correct amounts, it is an essential nutrient for humans and plants. In Washington State, most copper in drinking water comes from corrosion of household plumbing. Plumbing sources can include copper pipe and brass fixtures. Copper from plumbing corrosion can accumulate overnight.

POTENTIAL HEALTH EFFECTS OF COPPER

Although copper is an essential mineral in the diet, too much copper can cause health problems. Copper is widely distributed within the tissues of the body, but accumulates primarily in the liver and kidneys. A single dose of 15 mg of copper can cause nausea, vomiting, diarrhea, and intestinal cramps. Severe cases of copper poisoning have led to anemia and to disruption of liver and kidney functions. Individuals with Wilson's or Menke's diseases are at higher risk from copper exposure.

HOW YOU CAN REDUCE EXPOSURE

- When your water has been sitting for several hours, flush the pipe by running the cold-water tap until the water is noticeably colder before using the water for drinking or cooking. **(The longer water has been sitting in the pipes, the more dissolved metals it may contain).**
- Use only cold water for drinking, cooking, and making baby formula. Hot water may contain higher levels of lead or copper.
- Frequently clean the filter screens and aerators in faucets to remove captured particles.
- If building or remodeling, only use "lead free" or low lead piping and materials. Avoid using copper piping or brass fixtures for locations where water will be consumed or used in food preparation (such as kitchen or bathroom sinks).



CITY OF SUNNYSIDE

Water System Plan Update

LEAD AND COPPER MONITORING SITES

LEGEND

CITY LIMITS / RETAIL SERVICE AREA

SERVICE AREA BOUNDARY (UGA) AND WATER RIGHT PLACE OF USE

MONITORING SITES

1. 1007 Decatur Ave.
2. 108 Maple Way
3. 1107 Jackson Ave.
4. 1145 Columbia Ave.
5. 119 W. Lincoln Ave.
6. 120 E. Edison Ave.
7. 1302 Mint Lane
8. 1319 Jackson Ave.
9. 133 E. Hemlock Ave.
10. 1401 E. Edison Ave.
11. 1408 Harrison Ave.
12. 1414 Denson Ave.
13. 1509 S. 6th St.
14. 1509A S. 6th St.
15. 1510 Denson Ave.
16. 1516 E. Irving Ave.
17. 1521 S. 1st St.
18. 1531 Yakima Ave.
19. 1533 Denson Ave.
20. 208 E. Riverside Dr.
21. 215 Lookout Dr.
22. 219 W. Madison Ave.
23. 220 W. Grandview Ave.
24. 314 Peach Ave.
25. 315 Merrick Ave.
26. 327 E. Edison Ave.
27. 406 Merrick Ave.
28. 409 E. Lincoln Ave.
29. 411 Merrick Ave.
30. 412 S. 8th St.
31. 416 S. 8th St.
32. 419 Merrick Ave.
33. 424 Nicolai Ave.
34. 425 W. Madison Ave.
35. 495 Grandview Ave.
36. 510 Rouse Rd.
37. 518 Dayton Dr.
38. 522 Dayton Dr.
39. 533 S. 4th St.
40. 607 Miller Ave.
41. 608 S. 11th St.
42. 632 Buena Vista Ave.
43. 633 San Clemente Ave.
44. 686 Hamilton Dr.
45. 711 Cemetery Rd.
46. 721 Harrison Ave.
47. 803 Terry St.
48. 815 S. 16th St.
49. 816 Maridan Dr.
50. 825 Taylor St.
51. 904 S. 13th St.
52. Parkland Dr #18

City of SUNNYSIDE WASHINGTON

HLA Engineering and Land Surveying, Inc.
2803 River Road
Yakima, WA 98902
509.966.7000
Fax 509.965.3800
www.hlacivil.com

PRINTED: 11/09/23
P:\Projects\2022\22166\WSP Figure Lead & Copper Monitoring Sites.dwg

City of SUNNYSIDE WASHINGTON

26

Emergency Response Plan

HLA Engineering and Land Surveying, Inc.

Community Water System

Emergency Response Plan

City of Sunnyside

Emergency Response Plan

CWS and ERP Information

Please fill in the information below as indicated.

PWSID	85400 3
Street Address	818 E Edison Ave
City, State Zip Code	Sunnyside, WA 98944
Phone number	(509) 837-5206
Population Served	17,002
Prepared by	Daniel Tiliano
Reviewed by	Raul Sanchez
Date completed	5/30/2024

PLAN DISTRIBUTION

Please fill in the recipient's name and title, the person who gave them the plan and on what date.

RECIPIENT/TITLE	DISTRIBUTED BY	DATE

CHANGE HISTORY

Please describe the changes made to this plan since its original development, who made the changes and on what date the changes were incorporated into this plan.

DESCRIPTION OF CHANGE	NAME/TITLE	DATE
Original Development	Daniel Tiliano / Water Division Supervisor	11/22/2021
Revised	Daniel Tiliano / Water Division Supervisor	5/30/2024
Revised	Daniel Tiliano / Water Division Supervisor	6/6/2024

TABLE OF CONTENTS

UTILITY INFORMATION

During an incident, you need to have system information about your water utility readily available for your personnel, first responders, repair contractors/vendors, the media, and other response partner agencies.

i Utility Overview

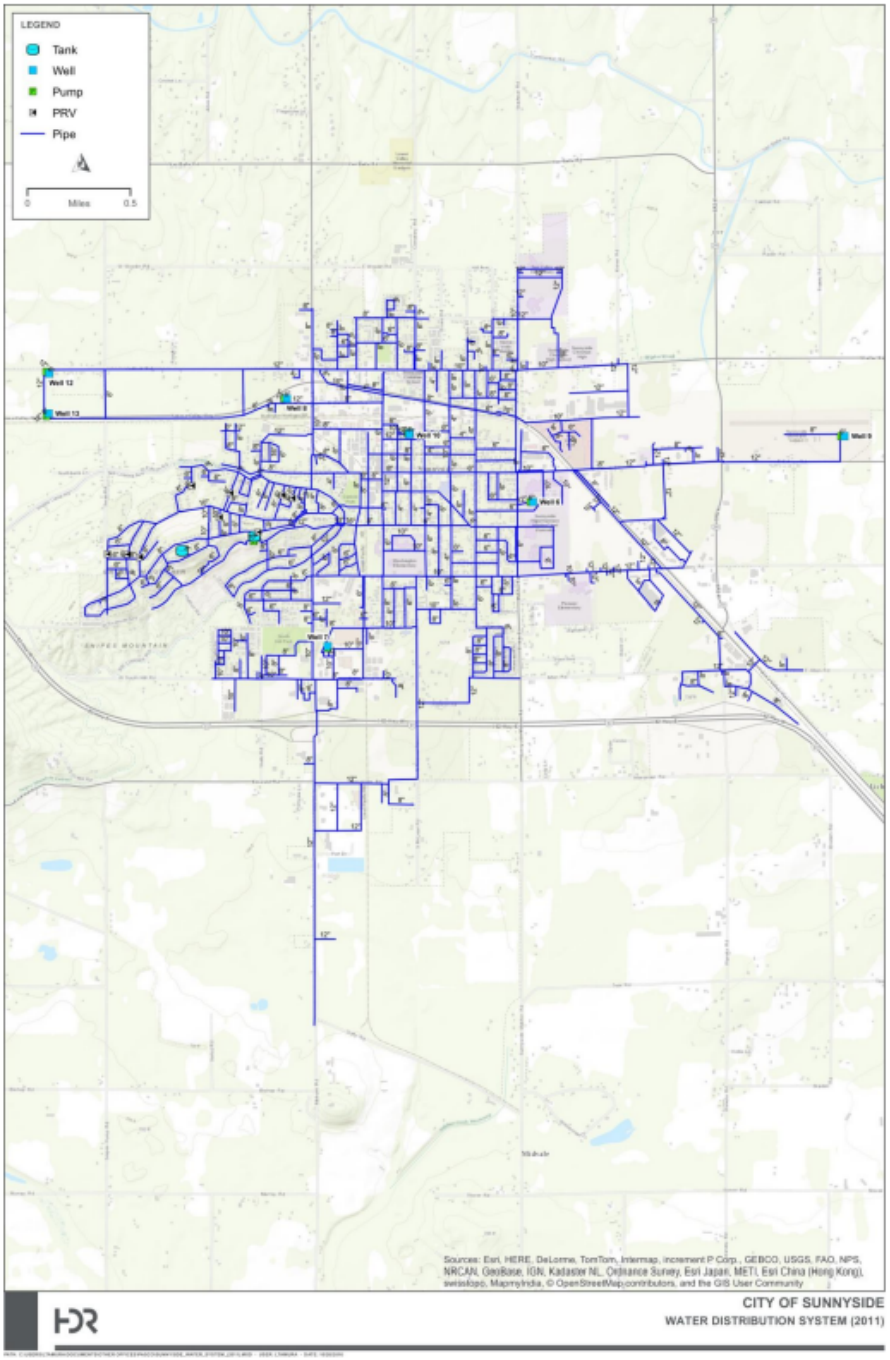
Provide basic information about your utility.

Utility Information	
PWSID	854003
Utility name and address	City of Sunnyside 818 E Edison Ave Sunnyside, WA 98944
Owner	City of Sunnyside
Directions to utility from major roadway, include lat./long. coordinates	Take Exit 67. Head North on S 1st St. Head East on E S Hill Rd. Head North on S 4th St. The Water Division Shop is located to the west of the intersection of S 4th St & E Lincoln Ave.
Total population served and total service connections	Total population served: 17,002 Total service connections: 3,752
Name, title, phone number of primary contact (e.g., ERP Lead)	Daniel Tiliano Water Division Supervisor (509) 836-6365
Alternate contact	(509) 790-9726
Location of treatment, distribution, collection schematics and operation manuals	On Map.

Use this checklist to ensure the following additional utility information (as applicable) is included as a part of your ERP.

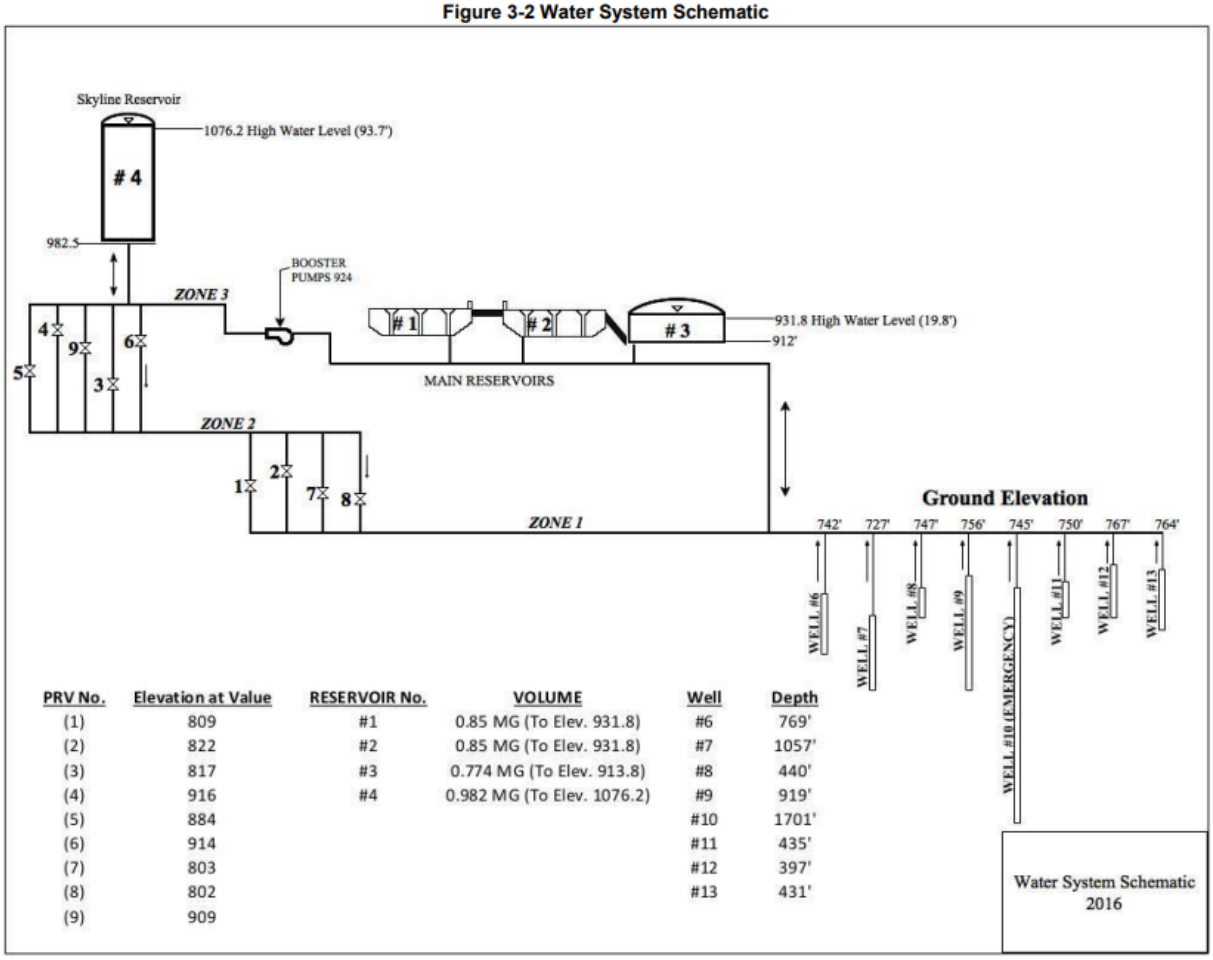
- ☒ Map of distribution systems

Figure 3-1 Existing System Map



☒ Pressure boundary map

Figure 3-2 Water System Schematic

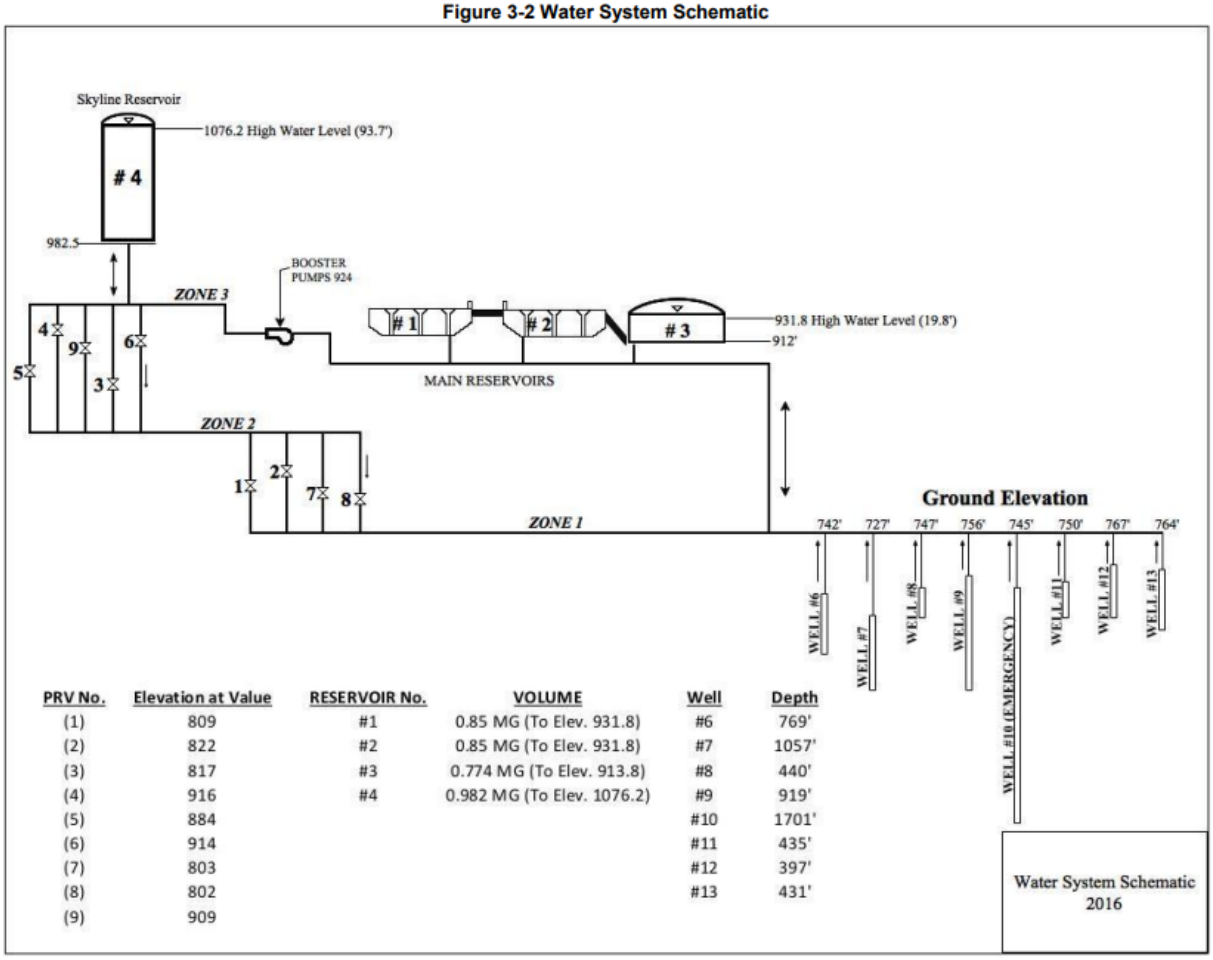


PRV No.	Elevation at Value	RESERVOIR No.	VOLUME	Well	Depth
(1)	809	#1	0.85 MG (To Elev. 931.8)	#6	769'
(2)	822	#2	0.85 MG (To Elev. 931.8)	#7	1057'
(3)	817	#3	0.774 MG (To Elev. 913.8)	#8	440'
(4)	916	#4	0.982 MG (To Elev. 1076.2)	#9	919'
(5)	884			#10	1701'
(6)	914			#11	435'
(7)	803			#12	397'
(8)	802			#13	431'
(9)	909				

29

☒ Process flow diagram

Figure 3-2 Water System Schematic



PRV No.	Elevation at Value	RESERVOIR No.	VOLUME
(1)	809	#1	0.85 MG (To Elev. 931.8)
(2)	822	#2	0.85 MG (To Elev. 931.8)
(3)	817	#3	0.774 MG (To Elev. 913.8)
(4)	916	#4	0.982 MG (To Elev. 1076.2)
(5)	884		
(6)	914		
(7)	803		
(8)	802		
(9)	909		

Well	Depth
#6	769'
#7	1057'
#8	440'
#9	919'
#10	1701'
#11	435'
#12	397'
#13	431'

29

☐ Site plans and “as built” drawings for the following components of your system (as applicable):

- Pumping facilities
  - Well #6
    - G-Public Works>WATER DIVISION>As builds>Map Room>WELL 6
  - Well #7
    - G-Public Works>WATER DIVISION>As builds>Map Room>WELL 7
  - Well #8
    - G-Public Works>WATER DIVISION>As builds>Map Room>WELL 8
  - Well #9
    - G-Public Works>WATER DIVISION>As builds>Map Room>WELL 9
  - Well #11
    - G-Public Works>WATER DIVISION>As builds>Map Room>WELL 10 AND 11 PUMP STATION IMPROVEMENTS PHASE 1 1.2006
  - Well #12
    - G-Public Works>WATER DIVISION>As builds>Map Room>WELLS 12.13 PUMP STATION
  - Well #13

        - G-Public Works>WATER DIVISION>As builds>Map Room>WELLS 12.13 PUMP STATION
- Reservoir / storage facilities
    - Grandview Reservoir #1
        - G-Public Works>WATER DIVISION>As builds>Map Room>GRANDVIEW RESERVOIR
    - Grandview Reservoir #2
        - G-Public Works>WATER DIVISION>As builds>Map Room>GRANDVIEW RESERVOIR
    - Grandview Reservoir #3
        - G-Public Works>WATER DIVISION>As builds>Map Room>GRANDVIEW RESERVOIR
    - Skyline Reservoir
        - G-Public Works>WATER DIVISION>As builds>Map Room>SKYLINE RESERVOIR
- Water treatment facilities
    - N/A, we use ground water.
- Chemical storage locations
    - Well #11
        - Decommissioned:
            - On-Site Sodium Hypochlorite Generation System Supply Tank
                - 6,500 Gallons
        - G-Public Works>WATER DIVISION>As builds>Map Room>WELL 10 AND 11 PUMP STATION IMPROVEMENTS PHASE 1 1.2006>SHEETS 12 – 14.
    - Well #12/13
        - Sodium Hypochlorite Supply Tank
            - 1,500 Gallons
        - G-Public Works>WATER DIVISION>As builds>Map Room>WELL 12.13 PUMP STATION>23 SHEETS WELL 12.13b>01D-01, 01D-02, 01D-03.
        - Chlorine Gas
            - 2 – 150lb cylinders one in use and the other on standby.
        -
- Booster pump stations
    - Grandview Reservoir Booster Pumps
        - #1: P-Public Works>WATER DIVISION>WELLS AND RES FOLDERS>Grandview Res>Booster Pumps
        - #2: P-Public Works>WATER DIVISION>WELLS AND RES FOLDERS>Grandview Res>Booster Pumps
        - #3: P-Public Works>WATER DIVISION>WELLS AND RES FOLDERS>Grandview Res>Booster Pumps
        - #4: P-Public Works>WATER DIVISION>WELLS AND RES FOLDERS>Grandview Res>Booster Pumps
        - #5: P-Public Works>WATER DIVISION>WELLS AND RES FOLDERS>Grandview Res>Booster Pumps
    - Well #9 Booster Pump
        - #1: P-Public Works>WATER DIVISION>WELLS AND RES FOLDERS>Well #9>Booster Pump 9>Sheet 4 Scan 2021-12-6
            - This shows the location of the artesian booster pump at Well #9
- Pressure-regulating valve (PRV) sites

PRV No.	Location of PRV	Elevation	Valve Size	*Cla-Val Model No.	Inlet PSI	Outlet PSI	Sustaining PSI
Zone 3 → Zone 2							
3	Terry & Columbia Ave.	871	6"	90G-01AB	83	58	
4	Upland & Vine	915.9 916.4	1 ½" 6"	90G-01AS 90G-01AB	68 68	47 42	
5	Swan Rd & Vine	883.6	6"	92G-01B	80	55	50
6	328 Grandview	914.3 912.2	1 ½" 6"	90G-01AS 90G-01AB	65 65	45 40	
9	Vine & Taylor	908.8 909	1 ½" 6"	90G-01AS 90G-01AB	67 67	50 50	
Zone 2 → Zone 1							
1	Darrin Court & Dayton Dr.	809.9 810.1	1 ½" 6"	90G-01AS 92G-01B	98 98	53 48	65 65
2	545 Terry	822.2	6"	92G-01B	83	58	50
7	San Clemente & S. Lookout	803.4 803.6	2" 6"	92G-01BS 92G-01BCS	102 102	57 52	60 60
8	South Lookout	802.0 802.2	2" 6"	92G-01BS 6" 92-01	102 102	58 53	60 60

- **SWAN ROAD & VINE** **#5** **YEARLY**
  - 1 - 6" 92G-01B
- **UPLAND & VINE** **#4** **YEARLY**
  - 1 - 1 ½" 90G-01AS
  - 1 - 6" 90G-01AB
- **VINE & TAYLOR** **#9** **YEARLY**
  - 1 - 1 ½" 90G-01AS
  - 1 - 6" 90G-01AB
- **DARRIN COURT & DAYTON DRIVE** **#1** **YEARLY**
  - 1 - 1 ½" 90G-01AS
  - 1 - 6" 92G-01B
- **TERRY & COLUMBIA AVENUE** **#3** **YEARLY**
  - 1 - 6" 90G-01AB
- **545 TERRY** **#2** **YEARLY**
  - 1 - 6" 92G-01B
- **SAN CLEMENTE & SOUTH LOOKOUT** **#7** **YEARLY**
  - 1 - 2" 92G-01BS
  - 1 - 6" 92G-01BCS

- **SOUTH LOOKOUT** #8 **YEARLY**
  - 1 - 2” 92G-01BS
  - 1 - 6” 92G-01B
- **STANDPIPE AT CITY SHOPS** **YEARLY**
  - 1 - 2” 136EG-01A 120/60
- 328 GRANDVIEW #6 REBUILD
  - 1 - 1 ½” 90G-01AS
  - 1 - 6” 90G-01AB
- **WELL #6** **REBUILD**
  - 1 - 4” 61G-06B
- **WELL #7** **REBUILD**
  - 1 - 4” 61G-06B
  - 1 - 8” 40A-01AB
  - 1 - 2 ½” 52G-01
- **WELL #8** **YEARLY**
  - 1 - 4” 61G-02
  - 1 - 8” 650G-01BD
  - 1 - 2 ½” 52G-03
- **WELL #9** **YEARLY**
  - 1 - 10” 660G-11AB
  - 1 - 6” 660G-11AB
  - 1 - 3” 50G-01
  - 1 - 6” 61G-19B W/PRESSURE RELEIF OVERRIDE
- **PUMP HOUSE #11 NEW 2006** **YEARLY**
  - 1 – 6" 131G-01BDCSY
  - 1 – 4" 661G-07
- **WELL #12** **YEARLY**
  - 1 – 4" 131G-22BCDSY
  - 1 – 4" 661G-21AB
- **WELL #13** **YEARLY**
  - 1 – 6" 131G-22BCDSY
  - 1 – 6" 661G-21AB
-
-

☐ Distribution system diagrams and instrumentation information

☐ Equipment specifications and operation instructions
- G-Public Works>WATER DIVISION>INVENTORY>Equipment Roster

☐ Emergency power and light generation operation specifications
- G-Public Works>WATER DIVISION>Gen Sets>Water Department

- G-Public Works>WATER DIVISION>Gen Sets>Well #8
- G-Public Works>WATER DIVISION>Gen Sets>Well #9
- G-Public Works>WATER DIVISION>Gen Sets>Well #11

☐ Supervisory Control and Data Acquisition (SCADA) system operation instructions
- SCADA is used to turn on and off wells and booster pumps at different set points to maintain a balance of our distribution system as well as keep a constant level in our reservoirs.

☐ Communications systems operation instructions
- The Water Division has several forms of communication.
  - Email
  - Radio
  - Cell Phone
  - Landline
  - Air Fiber (High Speed Wireless)

ii Personnel Information

Attach your personnel roster here or fill out the table below.

Water Division Contacts

Raul Sanchez – Public Works Director

- Office #: (509) 837-5399 (#1012)
- Work Cell #: (509) 790-9725
- Personal Cell #: (509) 831-7474

Andrew Robinson – Deputy Public Works Director

- Office #: (509) 836-6311 (#1022)
- Work Cell #: (509) 781-1819

Annette Lara – Public Works Administrative Assistant

- Office #: (509) 837-5206 (#1013)
- Office #: (509) 836-6333
- Work Cell #: (509) 836-1183
- Fax #: (509) 837-3268

Daniel Tiliano – Water Division Supervisor

- Office #: (509) 836-6365 (#3201)
- Work Cell #: (509) 790-9726
- Radio #: 412

Jesus Valencia – Maintenance Worker: Water

- Office #: (509) 836-6366 (#3202)
- Work Cell #: (509) 712-5941
- Personal Cell #: (509) 830-4053
- Radio #: 413

Edgar Reyes – Maintenance Worker: Water

- Office #: (509) 836-6366 (#3202)
- Work Cell #: (509) 502-8057
- Personal Cell #: (509) 312-9868
- Radio #: 414

Robert Zapien – Maintenance Worker: Water

- Office #: (509) 836-6366 (#3202)
- Work Cell #: (509) 502-8052
- Personal Cell #: (509) 305-4943
- Radio #: 415

Alejandro (Alex) Chavez – Maintenance Worker: Water

- Office #: (509) 836-6366 (#3202)
- Work Cell #: (509) 712-5935
- Personal Cell #: (509) 985-6744
- Radio #: 416

Joshua Castro – Maintenance Worker: Water

- Office #: (509) 836-6366 (#3202)
- Work Cell #: (509) 712-5941
- Personal Cell #: (509) 830-4053
- Radio #: 417

iii Primary Utility Components

List all the components necessary to maintain effective operation of your utility. Simply add more rows to the tables below if you have additional components. Text in italics represents examples – be sure to delete italicized text as necessary as you fill out the tables below and throughout this template.

Wells

Well Name	Depth/Location	Available Yield	Treatment Requirements/Associated Treatment Plant
Well #6	769' / 46.321377, -119.998977	1,570 GPM	Disinfection – Chlorine Gas
Well #7	1057' / 46.311060, -120.018554	1,000 GPM	Disinfection – Chlorine Gas
Well #8	440' / 46.329095, -120.023088	800 GPM	Disinfection – Chlorine Gas
Well #9 Booster	919' / 46.325522, -119.968183	350 GPM	Disinfection – Chlorine Gas
Well #9	919' / 46.325539, -119.968218	1,175 GPM	Disinfection – Chlorine Gas
Well #11	435' / 46.326523, -120.011192	400 GPM	Disinfection – Chlorine Gas
Well #12	397' / 46.330876, -120.047323	350 GPM	Disinfection – Sodium Hypochlorite and Chlorine Gas
Well #13	431' / 46.328751, -120.049404	650 GPM	Disinfection – Sodium Hypochlorite and Chlorine Gas

Intakes

Intake Name	Depth/Location	Capacity	Treatment Requirements/Associated Treatment Plant
N/A			

Treatment Plants

Plant name	Location	Capacity	Treatment Train
N/A			

Treatment Plants

Plant name	Location	Capacity	Treatment Train

Storage and Distribution System – Tanks, Primary Mains and Pumping Stations

Location	Area Served	Comments
Grandview Reservoir #1 / 351 W Grandview Ave. 46.319452, -120.026542	Looped	
Grandview Reservoir #2 / 351 W Grandview Ave. 46.319445, -120.026095	Looped	
Grandview Reservoir #3 / 351 W Grandview Ave. 46.319423, -120.025568	Looped	
Skyline Reservoir / 720 Skyline Ave. 46.318229, -120.032714	Looped	

Treatment Chemical Storage Facilities

Location	Chemical(s)	Comments
Well #11	*Sodium Hypochlorite Liquid solution, 0.8%*	*Storage Tank 6,500 gallons for sodium hypochlorite. As of 5/30/2024, Well #11 is using Chlorine gas as it's disinfection.*
Well #12/#13	Sodium Hypochlorite Liquid solution, 0.8%	Storage Tank 1,500 gallons for sodium hypochlorite. Well #12 & #13 is now using Chlorine gas as it's initial disinfection and can use sodium hypochlorite as a back up.

Other Key Facilities

Location	Function	Comments

iv Industry Chemical Handling and Storage Facilities

List surrounding chemical production, handling or storage industries that could impact your utility during incidents such as accidental releases, hurricanes or earthquakes.

Industry Chemical Handling Facilities

Facility Name	Location	Distance	Chemical and Exposure Pathway
N/A			

Chemical Storage Tanks

Facility Name	Location	Distance	Chemical and Exposure Pathway
Grandview Reservoir Generator	*351 W Grandview Ave. Sunnyside, WA 98944*		*100-gallon storage tank (UST) holding gasoline. Earthquakes may cause disruption or leaking of the tank.*
Well #11	*200 S 7th St. Sunnyside, WA 98944*		6,500-gallon supply tank of 0.8% Sodium Hypochlorite. Not Active. No longer operational as of 5/30/2024.
Well #12 / #13	2920 Outlook Rd		1,500-gallon supply tank of 0.8% Sodium Hypochlorite. Active.

v Safety

List safety materials and important safety information to help protect utility personnel during an incident. You may also reference your utility Health and Safety Plan, if available.

Safety Materials

Type	Location
Lock Out Tag Out	409 E Lincoln Ave., Sunnyside WA 98944 – Hallway between shop and conference room.
Confined Space Entry Forms	409 E Lincoln Ave., Sunnyside WA 98944 – File cabinet SE corner of employee office.
Safety Cabinet	409 E Lincoln Ave., Sunnyside WA 98944 – In shop next to roll up door.
Safety Box – CINTAS	409 E Lincoln Ave, Sunnyside WA 98944 – In Break room. Safety items for Water Crew.

Safety Information

Topic	Description

Safety Information	
Topic	**Description**

vi Response Resources

Provide an inventory of available resources (e.g., equipment, supplies) either maintained on site or readily available off site (e.g., neighboring water system) in the table below, or insert an existing inventory sheet.

Resources			
Kind	**Type**	**Quantity**	**Location**
Generator – Grandview Reservoir	*CAT GEN SET 3306 PC – Ser #: 66D49095. ST*	*1*	
Generator – Well #11	*CAT GEN SET 3312 – Ser #: 81202204. ST*	*1*	
Generator – Well #8	*ONAN GEN SET 200DFAA 76819E – Ser #: G950581109. ST*	*1*	
Generator – Well #9	*CAT GEN SET 3306 – Ser #: 9NR02695. ST*	*1*	
Generator – Water Division	*GENERAC GEN SET – Part #: A4531, Model #: 00910-1, Ser #: 3102131*	*1*	
Generator – Mobile Light Generator	*6205.2RS 0001013282*	*1*	
Fuel	City of Sunnyside Fleet - Fuel	1	*Connell Oil dba CO-ENERGY* *106 N 9th St. Sunnyside, WA 98944* *(509) 837-5274*
Pump	City of Sunnyside Water Division uses Davis Pump for pump/well maintenance.		*Davis Pump & Electric Motors* *2500 Sunnyside Mabton Rd., Sunnyside, WA 98944* *(509) 837-5303*
Inventory Parts	*Brass & copper fittings, saddles, repair bands,*		*H.D. Fowler Yakima Branch* *1100 River Rd., Yakima, WA 98902* *Contact: Travis Stillwaugh (509) 728-9999*
Inventory Parts	*Sensus Meters, Registers, Smartpoints, etc.*		*Ferguson* *1130 W Washington St.* *Pasco, WA 99301* *Contact: Brandon Cushing (509) 430-0757*
Other			

Resources			
Kind	**Type**	**Quantity**	**Location**

vii Key Local Services

Note the closest locations of key logistical and medical services that you or mutual aid and assistance providers may need during an incident. Include a map if available.

Essential Services	
Facility	**Location/Description**
Hospital	*Astria Sunnyside Hospital Medical Center* *802 Miller Ave* *Sunnyside, WA 98944*
Gas station	*Connell Oil dba CO-ENERGY* *106 N 9th St. Sunnyside, WA 98944* *(509) 837-5274*
Pharmacy	Safeway Pharmacy: 613 S 6th St. Sunnyside, WA 98944 Walmart Pharmacy: 2675 E Lincoln Ave, Sunnyside, WA 98944 Rite Aid Pharmacy: 2010 Yakima Valley Hwy STE C1, Sunnyside, WA 98944
ATM	ATM: 409 S 7th St. Sunnyside, WA 98944 / Bank of America ATM: 529 S 7th St, Sunnyside, WA 98944 / U.S. Bank ATM: 1802 E Edison Ave., Sunnyside, WA 98944 ATM: 600 Yakima Valley Hwy, Sunnyside, WA 98944 / Sunnyside Food Mart ATM: 322 S 6th St. Sunnyside, WA 98944 ATM: 1524 Yakima Valley Hwy. Sunnyside, WA 98944 / In Chevron ATM: 107 W Lincoln Ave., Sunnyside, WA 98944 ATM: 2690 E Lincoln Ave, Sunnyside, WA 98944 / In Columbia Bank ATM: 1820 Yakima Valley Hwy, Sunnyside, WA 98944 / In Mid Valley Mall ATM: 2600 Yakima Valley Hwy, Sunnyside, WA 98944 ATM: 3400 Picard Pl, Sunnyside, WA 98944 / In the Grand Cinemas ATM: 600 Yakima Valley Hwy, Sunnyside, WA 98944 ATM: 1825 Waneta Rd., Sunnyside, WA 98944 / In Outpost ATM: 322 S 6th St., Sunnyside, WA 98944 / HAPO Community Credit Union ATM: 1820 Yakima Valley Hwy Ste B Sunnyside, WA 98944 / HomeStreet Bank ATM: 31501 Yakima Valley Hwy., Sunnyside, WA 98944 ATM: 31A Ray Rd., Sunnyside, WA 98944 / In Lower Valley Golf Club ATM: 911 E Edison Ave, Sunnyside, WA 98944 / Banner Bank
Grocery store	Safeway: 613 S 6th St. Sunnyside, WA 98944 Grocery Outlett: 2600 Yakima Valley Hwy, Sunnyside, WA 98944 Fiesta Foods: 2010 Yakima Valley Hwy #7, Sunnyside, WA 98944 TW Market: 1143 Tacoma Ave, Sunnyside, WA 98944 410 Market: 1301 Yakima Valley Hwy, Sunnyside, WA 98944 STM Market: 309 Yakima Valley Hwy, Sunnyside, WA 98944 Estudillo's Food Store: 2601 Sheller Rd, Sunnyside, WA 98944 Edison Market: 1520 E Edison Ave., Sunnyside, WA, 98944 Azteca Market Place: 1103 Yakima Valley Hwy., Sunnyside, WA 98944 Tienda Del Pueblo: 530 Franklin Ave., Sunnyside, WA 98944 Walmart Supercenter: 2675 E Lincoln Ave. Sunnyside, WA 98944 T M Market: 417 Cemetery Rd., Sunnyside, WA 98944 Buena Vista Mini Market: 701 S 6th St., Sunnyside, WA 98944

Essential Services	
Facility	**Location/Description**
	Carniceria La Barata: 105-111 N 6th St., Sunnyside, WA 98944 Valley View Market: 107 W Lincoln Ave., Sunnyside, WA 98944 Sunnyside Food Mart: 600 Yakima Valley Hwy., Sunnyside, WA 98944 16th St Market: 1121 S 16th St., Sunnyside, WA 98944 Dollar Tree: 2660 Yakima Valley Hwy., Sunnyside, WA 98944
Other service	

1 RESILIENCE STRATEGIES

This section contains strategies and resources to improve the resilience of the system, including the physical security and cybersecurity of the system.

1.1 Emergency Response Roles

Describe the roles and responsibilities for key utility and external response partner personnel in the table below. You can add, edit or delete rows as necessary.

Water Utility and Partner Roles

Name/Title	Emergency Response Role	Responsibilities
Raul Sanchez/ Public Works Director	*Emergency Response Director*	*Leads the Public Works Department*
Daniel Tiliano/ Water Division Supervisor	*Emergency Response Lead*	*Responsible for all incident response activities, including developing strategies and tactics and ordering and releasing resources.*
Jesus Valencia/ Water Maintenance Crew Operator	*Alternate Emergency Response Lead*	*Perform duties as assigned by ER Lead; assumes duties listed above when ER Lead is not available.*
Jacqueline Renteria/City Clerk	*Public Information and Services*	*Responsible for leading the public information effort based on information supplied by either the ER or Alternate ER Lead.*
Annette Lara/ Administrative Assistant	*Alternate Public Information and Services*	*Responsible for assisting the public information effort based on information supplied by either the ER or Alternate ER Lead.*
Robert Layman/Police Chief	*Security*	*Will provide incident security as needed once notified by ER Lead.*
Cameron Haubrich/Fire Chief	Fire & Ambulance Services	Will provide fire and ambulance services as needed once notified by ER Lead.

External Response Partner Roles		
Name/Title	**Organization**	**Responsibilities During an Incident**
Local Partners		
	County Emergency Management/EOC *2403 S 18th St Ste 200* *Union Gap, WA 98903* *(509) 574-1900*	Emergency Management, Groundwater Management,
	911	Emergency Incidents
	Sunnyside Police *401 Homer St.* *Sunnyside, WA 98944*	Police Services
	Fire/HazMat	Fire Suppression / Fire Prevention
	LEPC	In the works of forming a partnership with local governments and industries as a resource for enhancing hazardous materials preparedness.
	Elected officials • Dean Broersma, Mayor • Jorge Galvan, Deputy Mayor • Vicky Frausto, Councilor • Keren Vazquez, Councilor • Julia Hart, Councilor • Vicki Ripley, Councilor • Martin Beeler, Councilor	The council adopts ordinances, sets the annual budget, and directs the City through the city manager.
	Neighboring Wastewater utility Grandview Wastewater Prosser Wastewater	Ability to assist in emergency situations.
	Neighboring Water utility Grandview Water Prosser Water	Ability to assist in emergency situations.
	Power utility Cascade Natural Gas 512 Decatur Avenue Sunnyside, WA 98944 (509) 837-2174	Assist with gas leak, carbon monoxide alarm a line break or any other natural gas service emergency.
	Health department Yakima Health District 128 N 2nd St Yakima, WA 98901 (509) 575-4040	Responsible for suspicious packages or substances, illnesses, dead animals, health emergencies,
	Contractor/vendor	
	Industry representative	

	Mutual aid	
	Other	
	Other	
State Partners		
	Primacy Agency: *The Office of Drinking Water*	Has full authority and responsibility for implementation of the SDWA in Washington since 1976.
	Health department *Mailing Address:* *Washington State Department of Health* *Adjudicative Service Office* *P.O. Box 47879* *Olympia, WA 98504-7879* *Physical Address:* *Washington State Department of Health* *Adjudicative Service Office* *111 Israel Rd. S.E.* *Tumwater, WA 98501* *Phone/Fax:* *Phone: (360) 236-4695* *Fax: (360) 359-7957* *E-mail Address:* *ACOFax@doh.wa.gov*	
	Police *Washington State Patrol* *Helen Sommers Building* *106 11th Ave. SW* *Olympia, WA 98501* *(360) 596-4000*	
	WARN	
	Laboratories *Ag Health Laboratories* *609 Franklin Ave.* *Sunnyside, WA 98944*	
	Other	
	Other	
Federal Partners		

	EPA regional office *EPA Region 10 (Pacific Northwest) Environmental Protection Agency* *1200 Sixth Avenue, Suite 155* *Seattle, WA 98101* *Phone: (206) 553-1200* *(800) 424-4372 (toll free in Region 10)* *Fax: (206) 553-2955* *Toll free: (800) 424-4372*	
	FBI field office *1110 3rd Avenue* *Seattle, WA 98191-2904* *(206) 622-0460*	
	CDC *Centers for Disease Control and Prevention* *1600 Clifton Rd.* *Atlanta, GA 30329* *800-232-4636*	
	Other	
	Other	

1.2 Incident Command System (ICS) Roles

ICS is used to organize both near-term and long-term field-level operations for a broad spectrum of emergencies, from small to complex incidents, both natural and manmade. An ICS Incident Organization Chart (ICS Form 207), available at FEMA's ICS Resource Center, may be completed for your utility and inserted here or attached to your ERP.

1.3 Communication

Communication during an incident is critical to relay information to employees, response partners and critical customers about potential risks to health, infrastructure, and the environment.

1.3.1 Internal Communication

List all utility emergency response team members, their response role, title and contact information.

Contact List

Name	Role/Title	Phone	Alternate Phone	Email
Rob Layman	*Interim City Manager*	*(509) 836-6300*	*(509) 836-1096*	*rlayman@sunnyside-wa.gov*
Jacqueline Renteria	*City Clerk / Communications Director*	*(509) 836-6310*	*(509) 790-9729*	jrenteria@sunnyside-wa.gov
Maricela Galvan	*Deputy City Clerk / Executive Assistant*			mgalvan@sunnyside-wa.gov
Raul Sanchez	Public Works Director	(509) 837-5399		rsanchez@sunnyside-wa.gov

Contact List

Name	Role/Title	Phone	Alternate Phone	Email
Annette Lara	Administrative Assistant/Deputy City Clerk	(509) 837-5206	(509) 836-1183	alara@sunnyside-wa.gov
Daniel Tiliano	Water Division Supervisor	(509) 836-6365	(509) 790-9726	dtiliano@sunnyside-wa.gov
Hugo Morales	Wastewater & Storm Supervisor	(509) 836-6566	(509) 712-5952	hmorales@sunnyside-wa.gov
Jaime Alvarez	Street Supervisor	(509) 836-6363	(509) 790-9724	jalvarez@sunnyside-wa.gov
Mitch Ziegler	Parks/Facility Maintenance Supervisor	(509) 790-9723	(509) 837-5206	mziegler@sunnyside-wa.gov
Jesus Valencia	Water Maintenance	(509) 836-6366	(509) 830-4053	jvalencia2@sunnyside-wa.gov
Edgar Reyes	Water Maintenance	(509) 836-6366	(509) 502-8057	ereyes@sunnyside-wa.gov
Robert Zapien	Water Maintenance	(509) 836-6366	(509) 502-8052	rzapien@sunnyside-wa.gov
Alejandro Chavez	Water Maintenance	(509) 836-6366	(509) 712-5935	achavez@sunnyside-wa.gov
Joshua Castro	Water Maintenance	(509) 836-6366	(509) 712-5942	jcastro@sunnyside-wa.gov
Izaiah Alvarado	Seasonal Worker	(509) 790-9707		
Victor Munoz	Seasonal Worker	(509) 831-2351		

1.3.2 External Response Partner Communication

List all external response partners, their response role or position as well as contact information.

External Response Partner Contact List

Organization or Department	Point Person Name or Position	Phone	Alternate Phone	Email or Website
Local Partners				
County Emergency Management/EOC	*Tony Miller, Director*	*(509) 574-2155*	*(509) 574-1900*	*antone.miller@co.yakima.wa.us*
911		*Business Phone: (509) 248-9911*	*Non-Emergency Dispatch (509) 457-0207*	*suncomm@yakimawa.gov*
Police	Grandview Police Chief – Kal Fuller	(509) 882-9223	(509) 882-1232	kal.fuller@grandviewpd.us
	Grandview Assistant Police Chief – Seth Bailey	(509) 882-9223		seth.bailey@grandviewpd.us
	Toppenish Police Chief – Joseph Mehline	(509) 836-6229	(509) 865-1629	
	Prosser Police Chief – John Markus	(509) 786-1500 Ext. 8220		jmarkus@ci.prosser.wa.us
Fire/HazMat	Grandview Fire Chief - Pat Mason	(509) 882-9224		pmason@grandview.wa.us
	Toppenish Fire Chief – Tim Smith	(509) 865-3111		
	Prosser Fire Chief – Charles Damron	(509) 786-3873		cdamron@westbentonfirerescue.org
	Prosser Deputy Fire Chief – Erubiel Clara	(509) 786-3873		eclara@westbentonfirerescue.org
LEPC				lepc@co.yakima.wa.us
Elected officials				
	Grandview Council			
	Council #1 – Joan Souders	(509) 882-9200		soudersj@grandview.wa.us
	Council #2 – Javier Rodriguez	(509) 882-9200		rodriguezj@grandview.wa.us
	Council #3 – Diana Jennings	(509) 882-9200		jenningsd@grandview.wa.us

External Response Partner Contact List

Organization or Department	Point Person Name or Position	Phone	Alternate Phone	Email or Website
	Council #4 – Robert Ozuna	(509) 882-9200		ozunar@grandview.wa.us
	Mayor Pro-Tem Council #5 – Bill Moore	(509) 882-9200		mooreb@grandview.wa.us
	Council #6 – David Diaz	(509) 882-9200		diazd@grandview.wa.us
	Council #7 – Mike Everett	(509) 882-1133		everettm@grandview.wa.us
	Toppenish Council			
	Position 1 - Elpidia Saavedra, Mayor	(509) 865-2080		Elpidia.Saavedra@cityoftoppenish.us
	Position 2 – Cristian Sanchez, Councilmember	(509) 865-2080		Cristian.Sanchez@cityoftoppenish.us
	Position 3 – Josh Garza, Councilmember	(509) 865-2080		Josh.Garza@cityoftoppenish.us
	Position 4 – Ezequiel Morfin, Councilmember	(509) 865-2080		Ezequiel.Morfin@cityoftoppenish.us
	Position 5 - George Garcia, Councilmember	(509) 865-2080		George.Garcia@cityoftoppenish.us
	Position 6, Naila Duval, Councilmember	(509) 865-2080		Naila.Duval@cityoftoppenish.us
	Position 7, Loren Belton, Councilmember	(509) 865-2080		Loren.Belton@cityoftoppenish.us
	Prosser Council			
	Gary Vegar – Mayor	(509) 786-2332		gvegar@ci.prosser.wa.us
	Council Position No. 1 – Don Aubrey	(509) 786-2332		daubrey@ci.prosser.wa.us
	Council Position No. 2 – Morgan Everett	(509) 786-2332		meverett@ci.prosser.wa.us
	Council Position No. 3 – Felix Cortes	(509) 786-2332		fcortes@ci.prosser.wa.us

External Response Partner Contact List

Organization or Department	Point Person Name or Position	Phone	Alternate Phone	Email or Website
	Council Position No. 4 – Maricela Sanchez	(509) 786-2332		msanchez@ci.prosser.wa.us
	Council Position No. 5 – Carolina Licano	(509) 786-2332		clicano@ci.prosser.wa.us
	Council Position No. 6 – Steve Becken	(509) 786-2332		sbecken@ci.prosser.wa.us
	Council Position No. 7 – Anna Kellogg	(509) 786-2332		akellogg@ci.prosser.wa.us
Wastewater utility				
Water utility				
City of Grandview Wastewater	Dave Lorenz – WWTP Superintendent	(509) 894-4320		dlorenz@grandview.wa.us
City of Toppenish Wastewater	Shaun Burgess - Interim Public Works Director	(509) 865-4500	(509) 865-2080	Shaun.Burgess@cityoftoppenish.us
City of Prosser Wastewater	Dan Cavazos – WWTP Superintendent	(509) 786-1101		dcavazos@ci.prosser.wa.us
Power utility				
	Pacific Power	1-888-221-7070	1-877-508-5088	
Health department				
	Yakima County Health District	(509) 249-6525	(509) 930-5867	Kait.Wolterstorff@co.yakima.wa.us
Contractor/vendor				
Industry rep.				
Mutual aid				
Other				
State Partners				
Primacy agency				
Health department				
Police				

External Response Partner Contact List

Organization or Department	Point Person Name or Position	Phone	Alternate Phone	Email or Website
WARN				
Laboratories				
Other				
Federal Partners				
EPA regional office				
FBI field office				
CDC				
Other				

1.3.3 Critical Customer Communication

List critical customers below who should be given priority notification due to their reliance on the water supply either for medical reasons, based on usage, public health mission or because they may serve customers considered to be sensitive sub-populations.

Critical Customer Contact List

Organization or Department	Point Person Name or Position	Contact Instructions	Phone	Alternate Phone	Email or Website
Wholesale customer					
Senior living center					
Nursing home					
Hospital					
Dialysis clinic					
Hotel					

Critical Customer Contact List

Organization or Department	Point Person Name or Position	Contact Instructions	Phone	Alternate Phone	Email or Website
Transportation center					
School					
University	N/A				
Daycare center					
Panda Bear Child Care Center			(509) 839-6500		
Alvarez Child Care Center			(509) 837-3976		
Sunnyside Christian Childcare Center			(509) 831-1509		www.scchildcarecenter.com
Little Castle Daycare LLC			(509) 391-6522		
Daniela Child Care LLC			(509) 515-8158		
Little Hands Daycare			(509) 790-7972		
Start Learning Daycare			(509) 274-8319		
My Little Rainbow DayCare LLC			(509) 305-1706		
Learning Land Express Pre-School			(509) 839-2300		www.leraninglandexpress.com
Fanny Home Child Day Care			(509) 837-5087		
Gabby's Childcare			(509) 831-3292		
Daniela Child Care LLC			(509) 515-8158		
Factory					
Government building					
Large water user					
Darigold Inc.			(509) 837-8000		

Critical Customer Contact List					
Organization or Department	**Point Person Name or Position**	**Contact Instructions**	**Phone**	**Alternate Phone**	**Email or Website**
Other					

1.3.4 Communication Equipment Inventory

Inventory your utility's communication equipment below.

Communication Equipment			
Type	**Assigned to**	**Location**	**Number/Frequency/Channel**
Motorola Handie-Talkie HT1250 Day Wireless System Yakima – (509) 248-0314	*Water Supervisor – Daniel Tiliano*	*Water Division*	*1* *Model: AAH25KDF9AA5AN* *FCC ID: AZ489FT3794* *CAN TYPE: WARHA109195424A* *TANAPA: PMUD1482D* *VER. NO: R05.17.02* *Serial #: 749TNA2815*
Motorola Handie-Talkie HT1250 Day Wireless System Yakima – (509) 248-0314	*Water Maintenance*	*Water Division*	*2* *Model:*

1.4 Media Outreach

List contact information for all media outlets that your utility may coordinate with during notification efforts. Additionally, include existing risk communication procedures, such as composing and delivering messages (e.g. message mapping), or reference an existing Risk Communication Plan.

Contact List

Organization or Department	Point Person Name & Position	Phone	Alternate phone	Email or Website
Utility social media coordinator				
	Raul Sanchez – Public Works Director	*(509) 837-8399*	*(509) 790-9725*	*rsanchez@sunnyside-wa.gov*
	Jacqueline Renteria – City Clerk / Communications Director	*(509) 836-6310*	*(509) 790-9729*	*jrenteria@sunnyside-wa.gov*
Newspaper - Local				
Sunnyside Sun	Ileana Martinez – Co-Owner & Media Director	(509) 837-4500 Ext. 115		imartinez@sunnysidesun.com
Sunnyside Sun	Job Wise – Co-Owner & General Manager	(509) 837-4500 Ext. 116		jwise@sunnysidesun.com
Yakima Herald	Greg Halling – Executive Editor	(509) 577-7703		ghalling@yakimaherald.com
Newspaper – Regional/State				
Radio station				
TV station				
KIMA-TV	N/A	(509) 575-0029		mediainquiries@sbgtv.com
Advertising agency				
Other				
Other				

1.5 Public Notification Templates

Insert your templates for public notifications here, or reference where they may be found. Ensure that your templates are consistent with the regulatory requirements for public notification contained in the Public Notification Rule (see 40 CFR 141, Subpart Q) and all relevant state regulations.

2 EMERGENCY PLANS AND PROCEDURES

This section contains plans and procedures that can be implemented in the event of a malevolent act or natural hazard that threatens your utility's ability to deliver safe drinking water.

2.1 Core Response Procedures

Core procedures are the "building blocks" for incident specific response procedures, as they are typically implemented across a broad variety of incidents (e.g., hurricane, earthquake, flood). List all your core procedures here.

Access	
Item	**Description**
Debris clearing	*We currently have a concrete and landscaping chain saw. We also own a John Deere Mini excavator that is able to clear debris/earth.*
Alternate routes	*Grandview Reservoir has several entrances on Grandview Ave and one entrance on Riverside Ave.* *Skyline Reservoir has one entry and exit.* *Well Sites:* *Well #6: 2 Entry doors to the building* *Well #7: 1 Entry door to the building* *Well #8: 2 Entry doors to the building* *Well #9: 2 Entry doors to the building* *Well #11: 1 Entry door to the building* *Well #12/#13: 1 Entry door and 1 roll up door to the building.*
Identification badges	*There are no official utility IDs at this time.*
Other	

Physical Security	
Item	**Description**
Access control procedures	*Currently we use DL Windows for door code entry and gate code entry at the Water Division Shop located at 409 E Lincoln Ave., Sunnyside, WA 98944.* *IT and Water Supervisor has access to omit or add entrants to the Water Division.*
Restricted areas	*PLC room is restricted to Public.*
Evidence protection measures	*Police or Code Enforcement will contact the Supervisor in case of any water issues. If the Supervisor is not available, anyone can contact Utility Billing and notify our Customer Service for that day. We also have an After Hours and Weekend Call List for emergencies.*
Security culture	*We have added cameras and door code entry to increase our organizational attentiveness to security to help reduce vulnerability and enhance preparedness.*
Other	

Cybersecurity	
Item	**Description**
Notification	*IT (Dennis and/or Jafet) are contacted immediately in the event of a cyber incident, such as a Network or SCADA breach.* *S&B (425) 644-1700 handles our SCADA system. If there are any breaches, Contact Jim Swanson or Riley Romac.*
Documentation	*SCADA documents all our adjustments and changes.*
Other	

Power Loss	
Item	**Description**
Backup power systems	*Generators previously mentioned are the backup to our Well sites and Grandview Reservoir.* *Well #8: Fixed* *Well #9: Fixed* *Well #11: Fixed* *Well #12/#13: Portable* *Grandview Reservoir: Fixed* *Water Division Shop: Fixed* *Portable Light Generator*
Power utility	*Power utility contact information is listed in Section 3.2 above.*
Fuel plan	*Fuel has been delivered and topped off at all our Generator sites by Andrew Robinson, Deputy Public Works Director on 3/2024.*
Maintenance plan	*Annual maintenance scheduled.* *Load testing every 2 years.*
Other	

Emergency Alternate Drinking Water Supplies*	
Item	**Description**

* Interconnections are listed and described in Section 3.1

Sampling and Analysis

Item	Description
Sampling procedures	*Coliform Procedures are in out Water System Plan*
Pre-identified sampling locations	*Located on our Water System Plan*
Sampling containers and preservatives	*Received from our lab, Ag Health, Sunnyside WA.*
Sample collection	*Located on our Water System Plan*
Sample transportation	*Sampler will transport samples to Ag Health in a cooler.*
Laboratory capabilities	*Ag Health is able to test or send our tests required by DOH to a local lab.*
Other	

Local Contract/State/Federal Laboratory Contact List

Name				Addres
		Analytes/Methods	**Phone**	**Email or Website**
		Metals, VOCs and SVOCs		

Family and Utility Personnel Well Being

Item	Description
Family disaster plan	*Contact significant other to asses and determine situation.*
Assembly area	*List all the assembly areas and evacuation procedures for personnel.* *Meet at Break Room*
Supplies	*Snacks, water in containers in the break room, and safety equipment.*
Other	

2.2 Incident-Specific Response Procedures

Insert applicable Incident-Specific Response Procedures (ISRPs), specialized procedures tailored to an incident type. Incidents may include, but are not limited to, the following:

- Cybersecurity
- Drought
- Earthquake
- Extreme Cold and Winter Storms
- Extreme Heat
- Flooding
- Harmful Algal Bloom
- Hurricane
- Tornado
- Tsunami
- Volcanic Activity
- Wildfire
- Source Water Contamination
- Distribution System Contamination

EPA's website provides a number of incident action checklists (IACs) that you can use to help develop your own ISRPs. EPA also published the Prepared for Contamination in Your Distribution System? guidance that can help you develop a distribution system contamination ISRP.

3 MITIGATION ACTIONS

This section contains actions, procedures, and equipment which can obviate or significantly lessen the impact of a malevolent act or natural hazard on the public health and the safety and supply of drinking water provided to your community and individuals, including the development of alternative source water options, relocation of water intakes, and construction of flood protection barriers.

3.1 Alternative Source Water Options and Interconnected Utilities

List information on alternative source water options and interconnected utilities to mitigate impacts during incidents.

Alternative Source Water Options

Type	Location	Comments
City of Grandview Water System	*City of Grandview*	*May require transporting water between communities depending on nature of emergency*
City of Prosser Water System	*City of Prosser*	*May require transporting water between communities depending on nature of emergency*
City of Mabton Water System	*City of Mabton*	*May require transporting water between communities depending on nature of emergency*

Interconnected Utilities

Utility Name	Location	Contact Information	Comments

3.2 Other Mitigation Actions

List any mitigation procedures or projects implemented at your utility, such as raising facilities and controls or constructing berms to protect against flood damage.

Mitigation Actions		
Type	**Location**	**Comments**

4 DETECTION STRATEGIES

This section contains strategies that can be used to aid in the detection of malevolent acts or natural hazards that threaten the security or resilience of the system.

List the detection strategies and methods your utility uses to aid in the detection of malevolent acts or natural hazards. Also list the corresponding procedure to be used if the threat is detected.

Detection Strategies

Threat	Detection Method	Procedure
Unauthorized entry	• *Alarm from intrusion detection system*	*Call 911*
Source water contamination	• *National Response Center notifications* • *Notification from 911 for releases resulting from transportation accidents*	*Source Water Contamination Incident Response Plan*
Distribution system contamination	• *Customer complaint surveillance* • *Public health surveillance*	*Distribution System Contamination Response Procedure*
Cyber intrusion	• *Automated IT and operation technology (OT) system intrusion detection monitoring* • *Notification from utility staff*	*Cyber Incident Action Checklist*
Hazardous chemical release	• *Chlorine gas in air monitors*	*Call fire department*
Hurricane	• *Weather Service alerts*	*Hurricane Incident Action Checklist*
Flood	• *Notification from Army Corp*	*Flood Incident Action Checklist*
Power outage	• *Notification from energy provider* • *Alarm from line power sensor*	*Generator Start-up Checklist*
Other		
Other		

City of SUNNYSIDE WASHINGTON

27

Mutual Assistance Agreement

HLA Engineering and Land Surveying, Inc.

ORIGINAL

INTERLOCAL AGREEMENT AMONG AND BETWEEN CITY OF GRANDVIEW, CITY OF MABTON, CITY OF PROSSER AND CITY OF SUNNYSIDE REGARDING THE COOPERATIVE USE OF FACILITIES, EQUIMENT AND PERSONNEL

THIS INTERLOCAL AGREEMENT is entered into by, between and among the parties named herein for the uses and purpose stated below pursuant to the authority of Chapter 39.34 RCW and applicable law.

Section 1. PARTIES
The parties to this Agreement are:

A. CITY OF PROSSER, hereinafter called "PROSSER," is a municipal corporation of the State of Washington with City Hall located at 601 7th Street, Prosser, Washington 99350.

B. CITY OF GRANDVIEW, hereinafter called "GRANDVIEW," is a municipal corporation of the State of Washington with City Hall located at 207 West Second Street, Grandview, Washington 98930.

C. CITY OF SUNNYSIDE, hereinafter called "SUNNYSIDE," is a municipal corporation of the State of Washington with City Hall located at 818 East Edison Avenue, Sunnyside, Washington 98944.

D. CITY OF MABTON, hereinafter called "MABTON," is a municipal corporation of the State of Washington with City Hall located at 305 Main Street, Mabton, Washington 98935.

SECTION 2. AUTHORITY
Each of the parties is authorized to enter into this Interlocal Agreement (hereafter "Agreement") pursuant to Chapter 39.34 RCW which permits local governmental units to make the most efficient use of their powers by enabling them to cooperate with other localities on a basis of mutual advantage and thereby to provide services and facilities in a manner and pursuant to forms of governmental organization that will accord best with geographic, economic, population and other factors influencing the needs and development of local communities.

SECTION 3. PURPOSE
The parties named above desire to formalize an operational framework that will encourage and promote the coordination and use of facilities and resources of each and all parties in accordance with the authority cited in Section 2 above.

NOW, THEREFORE, in consideration of the mutual covenants, conditions and benefits herein, the parties agree as follows:

SECTION 4. MASTER AGREEMENT

The City Administrator of PROSSER, the City Administrator of GRANDVIEW, the City Manager of SUNNYSIDE and the Mayor of MABTON (hereafter collectively called "Executive Officers") are hereby authorized to execute one or more separate agreements that, by this reference, shall become part of this Agreement, provided that such separate agreements are signed by the parties participating in the specific undertaking and reference this Agreement. The separate agreements shall address issues relating to share of facilities and/or resources controlled or owned by the parties or any of them. Such separate agreements (hereafter "Specific Project Agreements") may address any matter of mutual concern or benefit, and may include, but are not limited to, the following:

- Use of facilities, equipment, personnel
- Access to facilities, equipment, personnel
- Operation and maintenance of facilities
- Operation of programs
- Charges, costs or fees
- Site improvements
- Times, dates and duration of use or access to equipment and facilities
- Joint purchasing
- Joint services

Prior to execution of any Specific Project Agreement, each party shall obtain any and all necessary and appropriate approvals from their respective legislative bodies.

SECTION 5. ADMINISTRATION

5.1 Joint Board. This Agreement shall not create any separate legal entity. This Agreement shall be administered by a Joint Board consisting of the Executive Officers, who shall meet and confer at such times deemed necessary and appropriate for the efficient conduct of business pertaining to such administration. Each Executive Officer shall be responsible for reporting the conduct of such administration to their respective legislative bodies.

5.2 Budgets and Costs of Administration for Joint Projects. Fiscal matters and descriptions of any shared services, programs, facilities and equipment, including budget and costs of administration of projects set forth in Specific Project Agreements pursuant to Section 4 above, and each party's responsibilities delineated therein.

5.3 Operating Fund. Nevertheless, the Joint Board may create any operating fund authorized by law, including but not limited to, establishment of a special fund with a state, county, city, or district treasurer servicing an involved public agency designated "Operating fund of Prosser-Grandview-Sunnyside-Mabton Joint Board."

5.4 Acquisition and Disposition of Property. Any real or personal property acquired shall be pursuant to Separate Project Agreement pursuant to Section 4 above, which shall address the means of acquisition, funding of acquisition, use and disposition of such property. Disposition of any real or personal property acquired pursuant to this Agreement but not addressed in any Separate Project Agreement, or as otherwise agreed in writing, shall be disposed of as follows:

(a) In the event of termination by all parties to any Separate Project Agreement, such property shall be sold. Proceeds from any sale of property shall be divided and paid to each party in proportion to the amount contributed by such party for the acquisition thereof. For any property not sold, title shall vest in each party in proportion to the amount contributed by each party for the acquisition thereof as tenants in common.

(b) In the event of termination by one party to any Separate Project Agreement, leaving two parties participating, the terminating party shall be paid and reimbursed the amount originally contributed by the terminating party for the acquisition of such property, less applicable depreciation.

No provision of this Agreement or Separate Project Agreement made pursuant to this Agreement shall relieve any public agency of any obligation or responsibility imposed upon it by law except that:

(a) To the event of actual and timely performance thereof by a joint board or other legal or administrative entity created by an agreement made pursuant to this chapter, the performance may be offered in satisfaction of the obligation or responsibility; and

(b) With respect to one or more public agencies purchasing or otherwise contracting through a bid, proposal, or contract awarded by another public agency or by a group of public agencies, any statutory obligation to provide notice for bids or proposals that applies to the public agencies involved is satisfied if the public agency or group of public agencies that awarded the bid proposal, or contract complied with its own statutory requirements and either (i) posted the bid or solicitation notice on a web site established and maintained by a public agency, purchasing cooperative, or similar service provider, for purposes of posting public notice of bid or proposal solicitations, or (ii) provided an access link on the state's web portal to the notice.

SECTION 6. INDEMNIFICATION

Each party shall defend, indemnify and hold harmless the other party, its elected officials, officers, agents, volunteers or assigns from any and all claims, demands, losses, liens, damages, actions, employees, judgments, liabilities, penalties, fines, lawsuits, costs and expenses (including attorney fees) which result from, arise out of, or are incidental to the indemnifying party's performance or failure to perform under this Agreement.

This section shall survive the termination of this Agreement.

SECTION 7. INSURANCE

Each party shall obtain or maintain in effect sufficient liability and property insurance to cover its participation in the programs and projects entered into pursuant to this Agreement. The parties agree and understand that specific projects or programs may require issuance of separate insurance coverage, which costs and responsibilities will be addressed in each Separate Project Agreement.

SECTION 8. TERMINATION – EFFECT

Any party may terminate its participation in this Agreement upon one year's advance written notice to the other parties. Upon termination, the terminating party shall remain responsible for payment of any financial commitment undertaken pursuant to any individual Separate Project Agreement, which financial commitment represents payment for services already performed.

SECTION 9. DISPUTE RESOLUTION

In the event of any dispute or difference arising by reason of this Agreement or any provision or term thereof or the use and/or payment for any facility for the purpose of this Agreement, the dispute or difference shall be attempted to be resolved by the Joint Board. If the dispute or difference is unable to be resolved by the Joint Board, the matters shall be referred to the legislative bodies of the affected parties for resolution. Such decision shall be arrived at as expeditiously as possible.

SECTION 10. THIRD PARTY BENEFICIARIES

There are no third party beneficiaries to this Agreement, and this Agreement shall not be interpreted or construed to create such rights.

SECTION 11. INTEGRATED AGREEMENT – AMENDMENT

This Agreement, with and each Specific Project Agreement hereafter attached and incorporated herein, constitutes the entire agreement between the parties, which shall not be amended except in writing signed by all parties.

SECTION 12. GENERAL PROVISIONS

12.1 This Agreement shall be effective upon the date signed by the last party to execute the Agreement. This Agreement may be executed in counterpart.

12.2 A copy of this Agreement shall be filed with the applicable County Auditor's offices, or in lieu of filing this Agreement with the County Auditors, each party may list a copy of this Agreement on its website pursuant to RCW 39.34.040.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as follows:

CITY OF PROSSER

By: _____
Mayor

Date: 12-22-11

ATTEST:

By: _____
City Clerk

APPROVED AS TO FORM:

By: _____
City Attorney

CITY OF GRANDVIEW

By: _____
Mayor

Date: 11/22/2014

ATTEST:

By: _____
City Clerk

APPROVED AS TO FORM:

By: _____
City Attorney

CITY OF MABTON

By: _____
Mayor

Date: 12/13/11

ATTEST:

By: _____
City Clerk

APPROVED AS TO FORM:

By: _____
City Attorney

CITY OF SUNNYSIDE

By: _____
Mark J. Gervasi, City Manager

Date: 1/24/2012

ATTEST:

By: _____
Delilah Saenz, City Clerk

APPROVED AS TO FORM:

By: _____
Menke Jackson Beyer Ehlis & Harper, LLP
Attorneys for the City of Sunnyside

CITY CONTRACT NO: A-2012-13
RESOLUTION NO: 2012-09
COUNCIL MTG: 1-23-12

City of SUNNYSIDE WASHINGTON

28

Water System Plan Adoption Documentation

HLA Engineering and Land Surveying, Inc.

City of SUNNYSIDE WASHINGTON

29

Protective Covenant Documentation

HLA Engineering and Land Surveying, Inc.