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Timberline Village #628 ODW ID# 88388 Part B Water System Plan

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Water System Plan Timberline Village #628

WSID: 88388

EXECUTIVE SUMMARY:

The Timberline Village #628 Water System Plan provides a long-term planning strategy for the water system over the 10-year and 20-year planning periods. The plan was prepared to update the previously approved plan in 1975, incorporate system changes, and increase the number of approved connections. The objectives of this plan are to evaluate the performance and adequacy of the water system, to determine what will be necessary to meet the infrastructure demands for the next 20 years, and to identify issues that may affect the operation of the water system. The plan was prepared in accordance with the Washington Administrative Code (WAC) 246-290-100.

The existing system supplies 286 (primarily part time) connections, which are calculated as 120 ERU (equivalent full time residential connections). The system currently has sufficient annual water rights to supply 222 ERU. Approval for 326 connections is requested at this time. In the unlikely event of all new connections being full time residences, this would result in a total of 160 ERU, well below the water right limitation of 222 ERU. This request is modest and conservative. Approval of these connections will allow fulfilment of the existing waiting list for connections and will also halt the resulting ongoing installation of exempt wells occurring within the Timberline Village service area. Approval of further connections may be requested in the future once additional in process water rights are obtained or additional history of reduced water loss is available.

Worksheet 4-1 -- ERU Capacity Summary

6/1/2021

Specific Single Family Residential Connection Criteria (measured or estimated demands.)

Average Day Demand (ADD) 197 gpd/ERU Maximum Day Demand (MDD) 714 gpd/ERU

Water System Connections Correlated to ERUs			
Service Classification	Total MDD for the classification, gpd	Total # Connections in the classification	ERUs
Residential			
Single-family	27846	39	39
Multifamily	411.336	12	2.1
Nonresidential			
Industrial			
Commercial	9282	4	13
Governmental			
Agricultural			
Recreational	36028	231	50.5
Other (specify)			
DSL	11,120		15.6
Other (identify)			
Total existing ERUS (Residential + Nonresidential + DSL + Other) = 120.1			

Service Capacity as ERUs and Water System Component (Facility)	ERU Capacity for Each Component	GPD Capacity for Each	Notes
Source(s)	319	438000	
Treatment	N/A	N/A	
Equalizing Storage	N/A	N/A	(source exceeds PHD)
Standby Storage	242	48,400	
Transmission	353	568800	
Water Rights (Qa)	222	51779	
Water Rights (Qi)	359	576000	
Other (specify)			
Water System Service Capac	ity (ERUs) =		222
(Based on the limiting water system component shown above.)			

Note: For the purposes of capacity analysis and water system plans, this form needs to be accompanied by the calculations that were used to come up with the ERU capacity figures.

- Capacity determinations are only for existing facilities that are operational for the water system
- •Not shown above are distribution system limitations (Section 4.5.4) on ERUs because these are location-specific within the distribution system. These limits are not expected to limit the ERU capacity of the entire water system.

Water System Design Manual

Capacity Analysis Calculations

Average Day Demand (ADD) 197 gpd/ERU
Maximum Day Demand (MDD) 714 gpd/ERU
Current Peak Hourly Demand (PHD) 174.3 gpm

Table 3-1

Number of ERUs (N)	С	F
15-50	3.0	0
51-100	2.5	25
101-250	2.0	75
251-500	1.8	125
>500	1.6	225

Source Capacity

Total Non-Emergency System Source Capacity	365 gpm
With Equalizing Storage (Must supply system MDD in 20 hours, Equ. 4-3)	613 ERU
Without Equalizing Storage (Must supply system PHD per Equ. 3-1)	319 ERU

Treatment (must supply system MDD in 24 hr less backwash) N/A ERU

Total Installed Storage:	60000 gallons
Operational Storage (OS)	6,000 gallons
Dead Storage (DS)	5,600 gallons
Fire Flow Storage (FFS) (Nested with Standby Storage)	15000 gallons

Available Equalizing Storage (ES) volume:	N/A	gallons
ES Capacity per Equ. 4-5	N/A	ERU
Available Standby Storage (SB)	48,40	00 gallons
SB Capacity per Equ. 4-7, 200 gallons per ERU	24	12 ERU

Distribution Capacity (based on hydraulic analysis)	395 gpm
Distribution Capacity (Must supply system PHD per Equ. 3-1)	353 ERU

Annual water right	58 ac-ft/yr
Average Daily limit:	51779 gpd
Annual water right capacity	222 ERU

DSL_{ERU} + (Avg Daily Limit-Daily DSL)/ADD_{ERU})

Instantaneous water right	400 gpm
Max daily limit	576000 gpd
Instantaneous water right capacity (without equalizing storage)	359 ERU

Table 1 Water System Information

270 approved connections, 286 existing connections (39 full time connections,
231 part time, 12 multi-family, and 4 commercial)
120 existing
S01, Well 1, AFM952, 1965, 8" well, 120 gpm pump capacity
S02, Well 2, AFM953, 1974, 8" well, 95 gpm pump capacity
None
Reservoir 1, 1982: 2 – 30,000 reservoirs, 60,000 gallons total
Wells pump to distribution in the lower zone and fill a reservoir in the upper
zone. Booster pumps pressurize the upper zone.
2,400' of 1.5" pipe
8,000' of 2" pipe
900' pf 3" pipe
12,500' of 4" pipe
3,300' of 6" pipe
2,000' of 8" pipe
Total: 29,000' of distribution pipe
G2-00887C, Qi = 160 gpm, Qa = 39 ac-ft/yr
G2-22984C, Qi = 160 gpm, Qa = 19 ac-ft/yr
G2-25619C, Qi = 400 gpm, Qa = 58 ac-ft/yr (non-additive)
Total existing certificates: Qi = 400 gpm, Qa = 58 ac-ft/yr
G2-29150, New application with priority date 11/7/94, Qi = 400 gpm, non-
additive, Qa = 58 ac-ft/yr additive
197 gpd/ERU
714 gpd/ERU
174 gpm (at current 286 connections and average DSL)
PUD No. 1 of Thurston County

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Timberline Village #628

Water System Plan

Acronyms

ADD Average Daily Demand
C Coefficient of Friction

DSL Distribution System Leakage ERU Equivalent Residential Unit

GWI Groundwater Under the Influence of Surface Water

HGL Hydraulic Grade Line

MCL Maximum Contaminant Level MDD Maximum Daily Demand

MPA Microscopic Particulate Analysis
NTNC Non-Transient Non-Community

PHD Peak Hourly Demand
ppb Parts per Billion
ppm Parts per Million
RSA Retail Service Area

SMA Satellite Management Agency

SWL Static Water Level

SWSMP Small Water System Management Program UTC Utilities and Transportation Commission

WDM Water Distribution Manager
WFI Water Facilities Inventory (form)
WSDM Water System Design Manual

WSDOH Washington State Department of Health

WSP Water System Plan
WUE Water Use Efficiency

Chapter 1 System Description

1.1 Ownership and Management

Timberline Village #628 Water System (WSID 88388B) is an existing Group A Community water system located 4 miles northeast of Packwood in Lewis County, Washington. The system serves full and part-time single-family residences, one condo building, and one hotel. The system has a large transient population due to the proximity to Mount Rainier National Park and White Pass Ski Area. The system is owned and operated by PUD No. 1 of Thurston County. The system is currently approved for 270 connections but has 286 connections existing. Pertinent information about the water system is summarized below:

Water System Name: Timberline Village #628
System Type: Group A Community

WSDOH ID Number: 88388 B

Location: Lewis County, Washington Sources: 2 active wells (S01, S02)

Approved Service Connections: 270

Type of Ownership: Special District

Name of Owner: PUD No. 1 of Thurston County

Owner Address: 1230 Ruddell Rd SE Lacey, WA 98503

Type of Management: Owner Managed

The Thurston PUD Water System Plan Part A — Umbrella Plan will be referenced throughout this WSP. Additional information regarding ownership and management is outlined in the Thurston PUD Umbrella WSP.

1.2 System History and Background

The Thurston PUD Umbrella WSP contains information regarding the history of the PUD.

The Timberline Village #628 Water System was originally developed by Far West Industries in the 1970s. The water system was acquired by PUD No. 1 of Thurston County in 2017. Well 1 was completed in 1965 and Well 2 was completed in 1974. Since the original construction, the system has installed two 30,000-gallon reservoirs and a booster pump station to serve the upper zone. The community grew at a relatively steady rate until 2017 when the water system was found to be overconnected and exceeding its water right, primarily due to high leak loss. Since this time Thurston PUD has instituted a variety of water conservation measures, replaced a failing section of the distribution system, and implemented an aggressive leak monitoring, locating, and repair program. These efforts have reduced leak loss and reduced annual usage to within the existing water right.

1.2.1 Existing Facilities

The system's source of potable water is entirely from groundwater. Groundwater is withdrawn from 2 wells located in the same vicinity. Well (AFM952) is drilled to 89 feet and Well (AFM953) is drilled to 63 feet. The total source capacity is 365 gpm.

The system is comprised of the two wells, storage, pressure boosting pumps, and water line. There is no backup power available for the wells or booster pumps. Controls are provided by pressure controls at the wells and via telephone communication from the reservoirs.

1.3 Related Plans

The following documents were consulted in the preparation of this Water System Plan:

- Lewis County Comprehensive Plan, updated 2017
- WRIA 25/26 Watershed Management Plan, Grays-Elochoman and Cowlitz River Watershed Planning, updated 2013

Lewis County maintains a *Comprehensive Plan* which was last updated in 2017. This document was developed to comply with the State's Growth Management Act (GMA). The *Comprehensive Plan* provides guidance on which the planning and land use projections within this WSP are based.

Timberline Village #628 is within the Cowlitz River watershed (WRIA 26). The plan which addresses water quality, conservation, and environmental resource issues.

No inconsistencies or objections to the Water System Plan have been identified at the time of writing.

The nearest adjacent water system is High Valley Country Club which is approximately 0.5 miles west of Timberline Village #628's service area boundary. This water system is located across the Cowlitz River.

See the Thurston PUD Umbrella WSP for related plans.

1.4 Service Area, Maps, and Land Use

A map of the service area, retail service area, and water rights place of use is shown in Appendix 10.2. Detailed system maps are included in Appendix 10.3.



Figure 1-1 Service Area

1.4.1 Retail Service Area

The retail service area is where a municipal water supplier has a duty to serve connections under the conditions described in Section 1.6. For the Timberline Village Water System, the retail service area is identical to the existing service area.

1.4.2 Future Service Area

No increase in the system's service area is currently anticipated. Future water system growth on the water system is expected to be from the infill of undeveloped lots within the existing service area. The service area currently consists of 421 parcels; under existing zoning, subdivision of larger existing parcels to create up to an additional 61 parcels is possible, giving a total of 482 parcels (493 connections including existing condominiums) within the existing service area.

1.4.3 Service Area Agreements

The Thurston PUD does not have any service area agreements with outside utilities. No competing utilities have registered service areas within the bound of the existing or future service areas proposed; therefore, no utility coordination is required.

1.4.4 Land Use and Zoning

Zoning within the Timberline Village #628 water system is shown on map prepared by Lewis County (see maps included in Appendix 10.2. The area is zoned Rural Residential Center with a density of one unit per gross acre (RRC – R1). The Timberline Village community is primarily part time residential and recreational, with some limited full time residences.

1.5 Service Area Policies

Service area policies are outlined in the Thurston PUD Umbrella Plan. Any new connections to the Timberline Village #628 water system will be provided on a first-come, first-serve basis.

1.6 Duty to Serve

Timberline Village #628 has a duty to serve all new connections located within its Retail Service Area, provided the following four threshold factors are met, as described in Washington Administrative Code (WAC) 246-290-106:

- Timberline Village #628 has sufficient capacity to provide water in a safe and reliable manner.
 Timberline Village #628 holds a BLUE operating permit. The system is adequate for existing connections but is not allowed to add new connections. The system currently has more active connections than the approved number of connections. The goal of the WSP is to gain approval for additional connections.
- The service request is consistent with state and local regulations.
 The provision of service within the Retail Service Area is considered to be consistent with the Lewis County Comprehensive Plan.
- 3. Timberline Village #628 has sufficient water rights to provide service.

 A capacity analysis demonstrating existing water rights are sufficent to serve additional services is in process. Pending Water Right application G2-29150 for an additional 58 acre-feet per year or more will add significant additional available water rights if approved.
- 4. Timberline Village #628 can provide service in a timely and reasonable manner. For planning purposes, "timely service" is defined as receiving water service within 120 calendar days plus construction time. If the extent of water service requested required construction of major facilities such as the replacement of installation of new storage tanks, wells, booster pumps, or distribution mains, the time associated with engineering, regulatory review and approval, and construction may be added to the 120 days.

The provision of new water service is "reasonable" if:

- The conditions of service are consistent with local land use plans and development regulations.
- The conditions of service and associated costs are consistent with those documented in the water system plan, and
- The conditions of service and associated costs are consistent with the water system's standard practice experienced by other applicants requesting similar water service.

If the request cannot be permitted because these criteria cannot be met, the system shall issue a denial of water service and a brief explanation of the reason that service cannot be provided. The customer and the water system may negotiate a future facilities upgrade through a developer extension agreement; however, this may require significant engineering and construction, and would not be done as a part of the Duty to Serve.

1.7 Local Government Consistency

In accordance with the Municipal Water Law, Timberline Village #628 is working on obtaining a signed consistency statement from Lewis County to document that this WSP is consistent with local area planning. A copy of the Lewis County consistency statement will be included in Appendix 10.8 of the WSP.

1.8 Watershed Plan Consistency

As discussed in Section 1.3 above, Timberline Village #628 is within the Cowlitz watershed (WRIA 26). The WRIA 25/26 Watershed Management Plan, Grays-Elochoman and Cowlitz River Watershed Planning was consulted in preparation of this Water System Plan. The watershed management plan addresses water quality, conservation, and environmental resource issues. No inconsistencies between the watershed management plan and this Water System Plan were identified.

1.9 Complaints

Complaints regarding water service issues may be directed to Thurston PUD.

Chapter 2 Basic Planning Data

2.1 Current Population, Service Connections, and Equivalent Residential Units (ERUs)

2.1.1 Population and Demographics

The Timberline Village #628 water system is primarily a residential community comprised primarily of part tie residences, limited full time residences, and commercial services. Community buildings include a community center and pool. Commercial services include Packwood Lodge and a small restaurant.

The breakdown of services is as follows:

- Residential Connections
 - o 39 Full-time
 - o 231 Part-time
 - o 1 Condo (12 Units)
- Non-Residential Connections
 - o 1 Community Center
 - o 1 Community Pool
 - o 1 Restaurant
 - o 1 Hotel

The 2010 census data suggests the Lewis County households have an average of 2.5 people per household. Based on this, it is estimated 98 full time residents live in the 39 full time residences. The seasonal residences tend to be occupied by visitors to White Pass Ski Area by the homeowners or short-term rentals to visitors.

2.1.2 Types of Usage

The Timberline Village #628 water system has both residential and non-residential connections as part of the water system. The non-residential connections are the community center, pool, restaurant, and hotel. In addition, the system has a large portion of part time connections. The usage types for the system will be defined as full time residential, part time residential, community, commercial, and distribution system leakage (DSL).

Determination and criteria for full time versus part time residential connections is in Section 2.2.2.

2.2 Water Production and Usage

2.2.1 Meter Data

Timberline Village source and service meter data is recorded monthly. There are additional zone meters to help with leakage, these are also recorded monthly. Service and source meter data for the three year period from June 2019 to May 2023 was analyzed in this WSP.

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2.2.2 System Parameters: ADD and MDD

The full-time residential users are used as the basis for the ERU analysis. For the sake of analysis, a connection is considered to be a full time ERU if on average over the past three years it has less than 2 months per year with water use of less than 160 cf/month (40 gpd). This results in 39 full time connections, with an ADD of 197 gpd. This definition and number of full-time connections is supported by a 2022 survey conducted by Thurston PUD, wherein 16% of respondents stated that their home was a full time residence or vacation rental (which are included in the same category due to similar water use characteristics vs part time use properties). 16% of the existing 270 non-commercial or multi-family connections predicts 43 full time connections, similar to the 39 full time residential connections identified though review of metering records.

Part time residential and commercial ERU's are calculated by dividing their respective per connection MDD by the full time residential MDD. The ERU_{ADD} is the average of the monthly usage of full time residential connections between July 2020 and June 2023, which is 197 gpd/ERU. The Maximum Month's Average Day Demand (MMADD) is 393 gpd/ERU which occurred in December 2022. An ERU_{MDD} of 714 gpd/ERU is calculated by multiplying the MMADD by a peaking factor of 1.65 and a safety factor of 1.1. Based on metering records the 4 commercial connections equate to 13 ERU, the condo with 12 units equates to 2.1 ERU, and the 231 part time connections equate to 50.5 ERU (0.22 ERU per connection).

2.2.3 Distribution System Leakage

Timberline Village records source and service meter data monthly and compares them to determine leakage. The system has historically experienced significant distribution system leakage (DSL) due to a combination of poor original water line installation, a large distribution system, and low density development with low occupancy rates. The system is fully metered as of November 2019 and zone meters have been installed to analyze leakage. Additionally, Thurston PUD has been completing ongoing leak repair on known leaks and as leaks come up. This has resulted in a significant reduction is DSL.

The charts below show total pumped water from the wells, sold water (consumption), and DSL. Overall, DSL has a downward trend which reflects targeted main replacement and extensive leak detection repairs. The charts normalize loss from the 2022 fire and ensuing transmission main rupture.

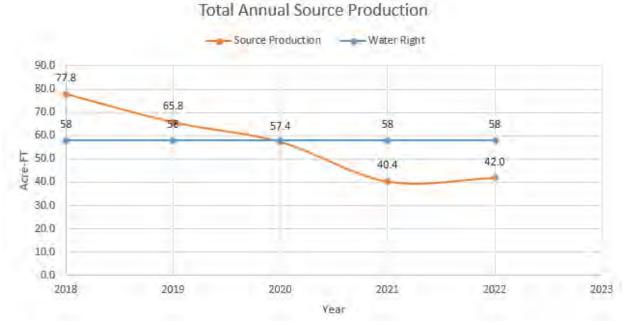


Figure 2-1 Water Consumption, Acre-Feet per Year

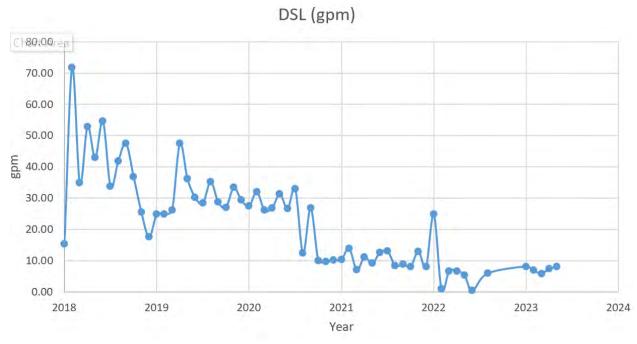


Figure 2-2 DSL in Total GPM

2.3 Water Supply Characteristics

The Timberline Village water system is supplied from 2 groundwater wells, drilled in 1965 and 1974. The wells appear to be finished in different aquifers. The well have been in continuous use since drilling and

there have not been any problems with availability of water from the sources. This indicates a high level of sustainability. Several leaks have recently been repaired throughout the distribution system, reducing the overall distribution system leakage, and therefore lowering demand on the sources of supply.

2.4 Water Supply Reliability Evaluation

The community is served from two sources. In addition the community has 60,000 gallons of reservoir capacity allocated for standby storage. The community does not have backup power at the well sites or the booster pumphouse. A generator transfer switch has recently been installed at the well pumphouse. No interties with other systems exist or are proposed for the Timberline Village Water System.

2.5 Future Population Projections and Land Use

2.5.1 Land Use and Zoning

The Timberline Village service area contains 421 existing parcels and is zoned RRC-R1 which corresponds to an area designated one unit per acre. Based on current zoning up to 61 additional lots may be possible, for a total of 482 lots possible. It is likely that not all lots are buildable, however some lots may be eligible for accessory dwelling units (ADUs). Based on this, buildout is assumed to be up to 482 parcels at this time; and including the condo units this results in a projected buildout of 593 connections.

2.6 Future Growth and Water Demand

The Lewis County Comprehensive Plan's mid-range county wide population growth estimate is approximately 1.05% per year over the next 20 years. Data from the U.S. Department of Commerce Bureau of Economic Analysis shows that the average annual growth rate for the period of 1970 to 2001 was 1.06% per year.

The Timberline Village community has traditionally experienced more rapid growth than the Lewis County average, likely due to the many recreational activities available in the area. Based on available records, Timberline Village grew at an average rate of 1.72% per year from 1993 until the moratorium on additional water connections in the first half of 2017. Given the continuing availability of recreational activities and trend of remote work it is likely that the trend of moderately elevated growth relative to Lewis County will continue.

The current wait list for water connections is 32 lots, though this is likely an under representation of pentup demand since many property owners have likely been waiting to sell their parcel or pursue development until connections are available. It is assumed that once additional connections are available connections will be granted to all properties on the waiting list and growth will resume at the previous rate of 1.72 % per year. Based on this, buildout is expected to be reached in the next 21 years.

Chapter 3 System Inventory and Analysis

3.1 System Design Standards

All design and future construction shall be completed in accordance with the Washington State Department of Health Water System Design Manual (Design Manual). The following is a brief summary of relevant standards set forth in the Design Manual:

Water Demand	Chapter	3
PHD	Equation	3-1
Capacity Analysis	Chapter	4
Distribution System	Chapter	6
Hydraulic Analysis	Section	6.1

Over the next 20 years the system does not anticipate growing beyond its existing service area. There are various sizes and types of waterlines in service today.

3.2 System Inventory and Asset Condition Assessment

3.2.1 Overview

The water system is served water by infrastructure located at two sites and the distribution system. The two sites are the well house (both wells are located here) and the reservoirs and booster pumphouse. The system is split into two pressure zones; the lower zone serves the areas from 1125 to 1250 feet elevation, comprising about 65% of the system, and the upper zone serves the remainder of the system from 1250 to 1375 feet elevation. The lower zone is pressurized by gravity from the reservoirs, and the upper zone is pressurized by the booster station.

Table 3-1 lists the sites and associated components:

DOH Source Reservoirs **Booster Pumps** Site Well(s) Number Well 1 and None None 1 SO1, SO2 Well 2 4- Grundfos CR8, 5 HP 2 None N/A 2 - 30,000 gallons ea.

Table 3-1: Summary of Sites

The distribution system consists of 1.5", 2", 3", 4", 6", and 8" waterlines. Water lines are looped on the north side of the highway with and span across Highway 12 to serve the south side and the upper summit zone. A summary of pipe sizes and quantities in service are shown in Table 3-2.

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Table 3-2: Pipe Inventory

Total	29,000 feet
8"	2,000
6"	3,300
4"	12,500
3"	900
2"	8,000
1.5"	2,400
Pipe Size	Length (feet)
Nominal	Installed

The wells and service connections are all metered and are read monthly. The PUD has also installed three zone meters which are known as: Ghost Town, Elkhorn, Fill Line, and Upper Zone. The zone meters have helped determine where leaks are occurring. Additionally, if the PUD observes a spike in a service meter reading, the property owner is contacted to determine if there is a leak present.

3.2.2 Sources

Timberline Village #628 has two wells. The well logs are in Appendix 10-5. A summary of the well is shown in Table 3-3.

Table 3-3: Summary of Sources

Well	Well Tag	Elevation (ft)	Well Depth (ft)	Static Water Level ¹ (ft)	Capacity (gpm)	Pumps To	Controlled By
						Distribution	Pressure/
1	AFM952	1186	89	36	125	/Tanks	Telephone
						Distribution	Pressure/
2	AFM953	1186	63	30	240	/Tanks	Telephone

3.2.3 Water Rights and Capacity

Table 3-4 summarizes the system's water rights; there is an additional pending water right permit application with a priority date of 1994 for an additional 58 acre-feet per year. Due to the length of time in waiting for processing of the application the PUD is now pursuing cost reimbursement processing. The water rights self-assessment tables and copies of the water right certificates can be found in Appendix 10-6.

¹ Static water level measurements from well logs

Table 3-4: Water Rights and Pumping Capacities

Certificate Number	Priority Date	Qi ¹ (gpm)	Qa² (acft/yr)
G2-00887 C	11/19/1968	160	39
G2-22984	7/15/1974	160	19
G2-25619	6/13/1980	400	58
Total		400	58

3.2.4 Storage

The system has two 30,000 gallon reservoirs which were built in 1982. The tanks are both horizontal steel tank each with a common inlet and outlet. The wells are called to fill the reservoirs via telephone communication from floats in the reservoirs. The reservoirs have vents but no overflows. The inlet/outlet piping is exposed. Each tank is approximately 12' in diameter and 36' in length. The tank volumes were modeled in AutoCAD due to their horizontal configuration.

Table 3-5: Storage Summary

	Dimensions (Feet)		Volumes (Gallons)				
Tank Name	Length	Diameter	Volume	Dead Storage (1.5' at top)	Operational Storage (1.5' vertical)	Dead Storage (1' at bottom)	Remaining Volume
Tank 1	36	12	30,000	1,800	3,000	1,000	24,200
Tank 3	36	12	30,000	1,800	3,000	1,000	24,200
Total			60,000	3,600	6,000	2,000	48,400

3.2.5 Booster Pumps

Timberline Village #628 has four identical 5-HP booster pumps with variable speed control which supply the upper pressure zone. The pumps are programmed to a setpoint of 70 psi. At 70 psi each pump can provide 65 gpm. The combined flow rate of these pumps is 260 gpm. There is no generator to provide power to the booster pumps. During a power outage the upper pressure zone (1/3 of the system) is without water.

3.2.6 Buildings

Timberline Village #628 has two buildings which house water system components. These buildings are summarized in Table 3-6.

¹ Qi is defined as the maximum instantaneous withdrawal rate allowed by water rights.

² Qa is defined as the maximum annual withdrawal allowed by water rights

Table 3-6: Summary of Buildings

Site	Building Size	Year Constructed	Notes
1	12'x16'	2021	Well 1, source meters
2	24'x14'	1992	Booster Pumps

The well pumphouse was replaced in 2021 including a new foundation and electrical panel after the previous pumphouse was damaged in a flood.

3.3 Capacity Analysis

The existing system supplies 286 connections, which are calculated as 120 ERU (equivalent full time residential connections). The system has sufficient annual water rights to supply 222 ERU. Approval for 326 connections is requested at this time. In the unlikely event of all new connections being full time residences, this would result in a total of 160 ERU, well below the most limiting capacity element (annual water rights).

As a conservative measures, water use estimates assume that all new connections will be full time residences, though it is probable based on historic trends and the 2022 customer survey that many or most new connections will be part time use. With only 16% of existing connections being full time, it is clear that in the 50-year history of the community there has been minimal conversion of part time to full time use, a trend also expected to continue based on community survey results. Given this a request for approval of 326 connections (160 ERU) provides a very substantial buffer in the event some additional existing part time connections transition to full time connections and it is reasonable to expect and conclude the system to will not exceed its water right.

See worksheet 4-1 on the following page, and current system limits in Table 3-7 below:

Table 3-7: System Capacity Summary

Limitation	Maximum ERU
Water Rights, Instantaneous withdrawal	359
Water Rights, Annual withdrawal	222
Total Source Production	319
Booster Pumps	N/A ¹
Reservoirs	242
Distribution System	353
Most Limiting Factor: Annual Water Rights	222

¹ – Booster pumps supply upper pressure zone only

3.4 Distribution System Analysis

A hydraulic analysis was performed by Northwest Water (see Appendix 10.3). Model results show that the system exhibits minor friction losses, with pressure differences largely driven by elevation. The results demonstrate the existing distribution system is limited to a flow rate of 395 gpm, well in excess of the existing PHD of 174 gpm.

3.5 Summary of System Deficiencies

There were no significant deficiencies found during the latest sanitary survey.

Washington State Department of Health recommends backup power for water systems without gravity supplied standby storage, which would include the upper pressure zone at Timberline. However, it is Thurston PUD's policy per resolution 22-39 to allow water system residents to elect to install backup power generation; residents of the Timberline water system have not chosen to pursue backup power installation at this time.

Chapter 4 Water Use Efficiency Program

4.1.1 Current Program

The Thurston PUD Board of Commissioners recognizes that water is a valuable commodity, and the wise and efficient use of water is a goal that is in the best interests of its constituents.

4.1.2 Goals

State regulation (WAC 246-290-830) requires the governing body of the municipal water system to develop the water use efficiency goals through a public process. The current WUE goal was considered in a public meeting held on October 19, 2020. The current goal for years 2021 through 2030 is to reduce and/or maintain the annual average demand per connection, for all Group A systems, to no more than 250 gallons per day. The Timberline water system is currently meeting this goal.

4.1.3 Measures

As part of a water system plan, DOH regulations also require the implementation of a specified number of water use efficiency measures. WAC 246-290-810 identifies the minimum number of water use efficiency measures that must be evaluated based on system size. Thurston PUD has less than 9,999 connections and therefore must evaluate or implement six supplementary water use efficiency measures in addition to the mandatory measures. Please see Part A WSP, chapter 3.4 for Water Use Efficiency Measures.

In addition to water efficiency measures identified in the Part A WSP, Thurston PUD currently offers customers the following efficiency related devices and incentives:

- Shower Timers -first come first serve basis
- Soil Moisture Meters -first come first serve basis
- Irrigation Timers -first come first serve basis
- High Efficiency toilet rebate (\$50.00)

4.1.4 Reclaimed Water

Systems serving more than 1,000 connections are required to evaluate reclaimed water opportunities. The Webster Hill system is comprised of properties that have private septic systems, and therefore would not be able to implement a sewer treatment plant for reclaimed water use. With fewer than 1,000 connections, Timberline is not required to further evaluate reclaimed water opportunities.

4.1.5 Consumer Education Program

Thurston PUD sends out seasonal water conservation tips to customers at least bi-annually within our monthly newsletter. Conservation is also included in our annual consumer confidence reports. Newsletters can be found online at http://www.thurstonpud.org/pud-news-newsletters.htm

4.1.6 Annual Reports

The annual report provided to DOH by July 1 must include:

- •Total system production and system wide consumption
- Distribution system leakage in percentage and volume
- Goal description, schedule, and progress toward meeting goals

Thurston PUD submits the annual WUE report on DOH's SENTRY database system, https://fortress.wa.gov/doh/eh/portal/odw/si/Disclaimer.aspx?Page=FindWaterSystem.aspx, before July 1 every year and adds a copy of the report to the website at http://www.thurstonpud.org/water-systems-ccr-2017 copy(1).htm. Additionally, the District reports this information to each customer on the annual Consumer Confidence Reports (CCR), example included in the Part A Water System Plan, Appendix J . The CCR provides each individual water system the current goal, total water produced and what the average household used for that water system.

4.1.7 Water Rates

Please see Water System Plan Part A, Section 6-6 and 6-7 for discussion and evaluation of current and future rates. Please see Thurston PUD website for current rates and fees http://thurstonpud.org/our-rates.htm.

4.2 Demand Forecast

See Sections 2.5 and 2.6 for population and demand forecasting.

4.3 Water Use Efficiency Savings

Since acquiring Timberline, Thurston PUD has reduced leak loss from approximately 40 gpm to 8 gpm. Thurston PUD has a significant successful history of improving water use efficiency of acquired systems. See WSP Part A section 3.8 for additional history of WUE Program success at Thurston PUD water systems.

4.4 DSL Exemption for Water Systems under 500 Connections

Timberline Village 628 serves less than 500 connections. Since acquiring the system Thurston PUD has taken significant measures to reduce leak loss, reducing DSL from over 40 gpm in 2018 to around 8 gpm. It is unlikely that leak rate can be further reduced given the current limitations in leak detection technology. Thurston PUD requests exemption to operate under the 20% leak loss limit, as there are no feasible means by which Thurston PUD may further reduce DSL.

4.5 Source and Service Metering

4.5.1 Source Meters

All sources are metered. Any additional sources developed in the future will be metered when installed. Source meters are read monthly.

4.5.2 Service Meters

The system became fully metered as of November 2019. Any new connections will be metered prior to connection to the water system. Service meters are read monthly.

4.6 Distribution System Leakage

If a system's distribution system leakage exceeds 10 percent, the conservation program must also provide an implementation program that includes leak detection and repair, and other measures to reduce water loss. Timberline Village's distribution leakage has exceeded 10% due to numerous leaks in the distribution system and very low system usage. The system was not fully metered until November 2019, so the DSL prior to this is not accurate. Below is a summary of the distribution system leakage as reported on the Water Use Efficiency Reports:

Year	Distribution Leakage %	Percentage of metered connections
2019	74.9 %	100 % (as of November)
2020	63.32 %	100 %
2021	40.3 %	100 %
2022	60.1 %	100 %

Thurston PUD has employed an aggressive leak detection program and has successfully found and fixed leaks, however a system wide bassline loss of 5 to 8 gpm remains due to micro leaks which are too small to detect. DSL resulting from this low baseline loss apears artificially inflated due to low system use. Because of the number of part time homes, average day demand on a per connection basis is only 69 gpd, which is only about one third the state average. Further, though the distribution system is fully built out, the service area is only approximately halfway developed. The combination of the above and relatively large lot size results in a very low usage per foot of distribution system and therefor even minor leakage shows up as high DSL on a percentage basis. Overall, leakage per foot of distribution system is lower than average for water systems in Washington State.

4.7 Water Loss Action Control Plan

See Part A WSP Appendix G.

Chapter 5 Source Water Protection

5.1 Wellhead Protection

The wellhead protection program has been developed in conjunction with the WSP. The following susceptibility assessment, protection area, and contamination source inventory will provide the necessary documentation to make educated management and land use decisions to prevent aquifer contamination.

5.1.1 Susceptibility Assessment

Ground Water Contamination Susceptibility Assessment forms for each source for the Timberline Village water system are included in Appendix 10-7. The results of the assessment are summarized in this Chapter.

5.1.2 Wellhead Protection Area

A map showing the 100-foot protected radii and the 6-month, 1-year, 5-year, and 10-year ground water travel radii is shown in Figure 5-1 below. The well protection radii are calculated using the formula found in the susceptibility assessment as provided by the WSDOH.

5.1.3 Contamination Source Inventory

The following are potential sources of contamination within the 10-year travel time radii:

- 1. Residential Septic Systems
- 2. Residential Chemical Applications (Pesticides, herbicides, etc)
- 3. The Cowlitz River

Since land use and zoning throughout the service area is unlikely to change, changes in, or addition of, sources of contamination are unlikely.

5.1.4 Notification of Findings

The following agencies will be provided with a letter (see Appendix 10-7 for a copy of the notification letter) requesting information about any potential sources of contamination within the Wellhead Protection Radii:

Lewis County Health Department Lewis County Department of Community Development Emergency Services (911)

All the homeowners with lots within the 10-year radii will also be sent a notification letter. See Appendix 10 for copies of the notification letters.

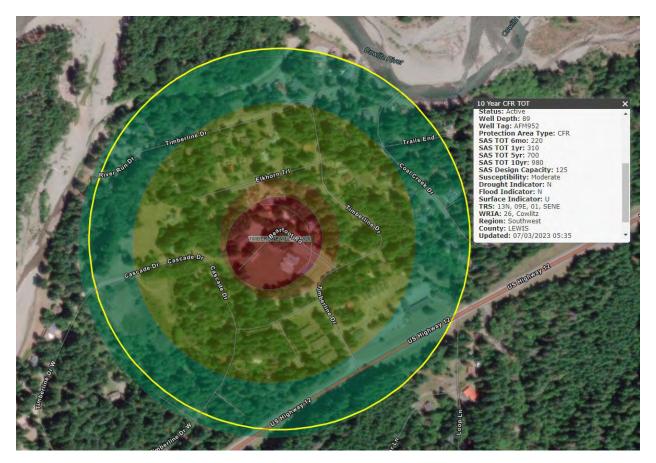


Figure 5-1: Wellhead Protection Areas

5.1.5 Contingency Planning

The system has some redundancy given that they have 2 permanent sources, though these sources are located adjacent to each other. Based on the well logs and water quality, the wells appear to draw from the same aquifer. In the unlikely event that the aquifer becomes contaminated, and the groundwater is inaccessible to the community, a boil water notification would be used on a short interim basis while long term treatment or another water source are pursued.

5.2 Water Quality Analysis

5.2.1 Asbestos

The system does not have any asbestos cement pipes, therefore, asbestos testing is not required.

5.2.2 Bacteriological Testing

The systems tests one sample from the distribution system for coliform bacteria each month. In the past 10 years, there have been 0 coliform violations. The Coliform Monitoring Plan is included in Appendix 10-7.

5.2.3 Inorganic Chemicals (IOC)

IOC samples have been taken from each source on the system over the past 5 years. No EPA-regulated primary contaminant has exceeded the states Maximum Contaminant Level (MCL). Well 1 exceeded the manganese MCL in 1996, however, subsequent samples have been below the MCL.

5.2.4 Lead and Copper

The system performs routine lead and copper sampling every 3 years from the distribution system. Lead and copper have been present in the samples above the minimum detection limits; however, none have exceeded the action level of the Lead/Copper rule so no treatment is required. The Lead and Copper Monitoring Plan is included in Appendix 10-7.

5.2.5 Nitrates

Annual Nitrate testing is performed at each of the systems sources. As of the most recent sampling in 2023 both wells had nitrate levels less than the lower limit of lab detection.

5.2.6 Radionuclides

Radionuclides samples were collected in 2021 from both sources, the Radium or Alpha particles emission for each well was less than the State Reporting Limit (SRL) of 1 mg/L and 3 mg/L, respectively.

5.2.7 VOCs and SOCs

Samples for volatile organic compounds (VOCs) and synthetic organic compounds (SOCs) were last collected in 2022 and all results were less than the SRL's.

Chapter 6 Operations and Maintenance

6.1 Water System Management, Personnel, and Certifications

See Thurston PUD WSP Part A, Sections 5.1 and 5.2.

6.2 Operations and Preventative Maintenance

The routine operation and preventative maintenance schedule for the system infrastructure is outlined in the WSP Part A in Chapter 5, Table 5-2, and further detailed in Appendix M. O & M procedures are fully detailed in Appendix N of the WSP Part A.

6.3 Comprehensive Water Quality Monitoring

Water quality sampling for each system is taken in accordance with the Water Quality Monitoring Schedule (WQMS). If any water quality testing exceeds the standards set forth in WAC 246-290-310, the DOH will be notified immediately. The current WQMS Report (Appendix 10.7) provides the sample schedule, which is summarized below in Table 6-1.

Monitoring Group	Test Panel	Sample Location	Schedule/Status
Coliform	Coli	Distribution	Monthly
Asbestos	ASB	Distribution	9 year
Lead and Copper	LCR	Distribution	3 year
Nitrate	NIT	All Sources	Annual
Complete Inorganic Chemicals	IOC	All Sources	Waiver – 9 year
Manganese	IOC	S01	3 year
Volatile Organic Contaminants	VOC	All Sources	Waiver – 6 year
Herbicides	Herb	All Sources	Waiver – 9 year
Pesticides	Pest	All Sources	Waiver – 3 year
PFAS	PFAS	All Sources	3 year
Soil Fumigants	Fumigant	All Sources	Waiver – 3 year
Radionuclide / Gross Alpha	RAD 228	All Sources	6 year

Table 6-1: Sampling Schedule

6.3.1 Coliform Monitoring Plan and Map

The coliform monitoring plan was prepared by Thurston PUD. The coliform monitoring plan can be found in Appendix 10-7. The system takes one routine samples per month from distribution. If there are any failures, repeat distribution samples and a source sample are taken per this plan. See the Coliform Monitoring Plan for details.

6.3.2 Lead and Copper Monitoring

The Lead and Copper Monitoring plan can be found in Appendix 10.7.

6.4 Emergency Response Program

The Emergency Response Plan is found in the WSP Part A, Appendix P.

6.5 Cross Connection Control

The cross-connection control policy and program are located in the WSP Part A, Appendix R. A list of the cross connection control device and testing dates is included in Appendix 10.10.

6.6 Sanitary Survey Findings

The latest sanitary survey was performed in 2021. There were no significant deficiencies or significant findings identified during the survey. An observation was made that the bladder tank in the upper pumphouse is not protected by a pressure relief valve (PRV). Another observation was made that the reservoirs do not have overflows and that vent screens are partially clogged. Addition of a PRV and a reservoir overflow and new vent screens have been added to the list of improvements in Chapter 8. The complete sanitary survey is included in Appendix 10.1.

6.7 Record Keeping, Reporting, and Customer Complaint Program

See WSP Part A, Section 5.9

6.8 Customer Complaint Response Procedures

See WSP Part A, Section 5.10

Chapter 7 Distribution Facilities Design and Construction Standards

The Timberline Village water system requests exemption from project report and construction document submittal per WAC 246-290-125 for distribution main projects. The distribution design and construction standards are outlined in the Thurston PUD WSP Part A, Appendix A. A map of the distribution system is included in Appendix 10.3.

Chapter 8 Capital Improvement Program

8.1 Prioritization Criteria

Improvements are prioritized according to the following criteria listed from highest to lowest in importance:

- 1. Public Health Risks
- 2. Adequate Supply
- 3. WSDOH Operation and Design Standards
- 4. Achieving Conservation Goals
- 5. Regularly Scheduled Improvements
- 6. Aesthetic and Optional Improvements

8.2 Prioritized List of Improvements

The system has no significant public health risks, has more than adequate supply, and meets or exceeds all WSDOH guidelines for operation and design standards. Therefore, the highest three prioritization criteria are already met and the following improvements are prioritized based on the remaining criteria (4-6) as well as project scope and cost.

- 1. Cellular source metering and large leak alarm system
- 2. Obtain Additional Water Rights
- 3. Distribution system replacement
- 4. Replace Booster Station
- 5. Sanitary Survey Recommendations

8.3 Assessment of Improvements

8.3.1 Cellular source metering and large leak alarm system

Thurston PUD reads source and service meters on a monthly basis and also employs zone metering to identify leakage. Installation of a cellular enabled source meter monitor with alarm thresholds allows detection of development of large leaks in a more timely basis than monthly meter reading alone.

8.3.2 Obtain Additional Water Rights

Thurston PUD is pursuing an additional water right for 58 acre-feet per year through the cost reimbursement program. The original application has a priority date of 1994. Issuance of a permit is anticipated in early 2024.

8.3.3 Replace Distribution System

Thurston PUD has completed targeted replacement of improperly installed sections of the distribution system. The remainder of the existing distribution system is primarily under 50 years of age and not due for replacement. However, installation quality of the original distribution system was poor, therefore Thurston PUD plans to initiate further targeted replacements of the distribution system over the current

10-year planning period, and targets completing replacement of the entire distribution system within the next 20 years.

8.3.4 Replace Booster Station

The booster station building was installed in 1974 and requires replacement, including the electrical system and pump controls. The pumps and plumbing have remaining useful life and will be retained.

8.3.5 Sanitary Survey Recommendations

Observations at the most recent sanitary survey included installation of a pressure relief valve on the booster station bladder tank, installation of reservoir overflows, and replacement of reservoir vent screens.

8.4 Improvement Program Summary and Schedule

The community will perform all of the upgrades proposed in section 8.3. The improvements are anticipated within the next 10 years. Table 8-1 provides an overview of the likely schedule for capital improvements projects.

Table 8-1: Improvement Schedule

Improvement	Estimated Cost	Schedule	Source of
improvement	(2023 dollars)	Scriedule	Funds
1. Online source meter/alarm system	\$3,000	2023	Reserves
2. Obtain Additional Water Rights	\$30,000	2023	Reserves
3. Replace Distribution System/Upgrade	\$6,300,000	2024 -	Loan or
Distribution to Support Fire Flow	\$0,300,000	2043	Grant
4. Booster Station building, electrical,	\$73,000	2024	Reserves
and controls	\$73,000	2024	Nesei ves
5. Sanitary Survey Recommendations	\$3,000	2024	Reserves

Chapter 9 Financial Program

See WSP Part A, Section 6. Thurston PUD's current Asset Management Program incorporates planning for all 273 Thurston PUD systems can be downloaded from the Thurston PUD website or made available upon request.

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Chapter 10 Appendices and Supporting Documents

10.1	WFI, Operating Permit, Sanitary Survey
10.2	Vicinity and Zoning Maps
10.3	Distribution System Maps and Hydraulic Analysis
10.4	Meter Data
10.5	Well Logs and Pumps
10.6	Water Rights, WRSA
10.7	Water Quality Monitoring & Consumer Confidence Report
10.8	Local Government Consistency and Susceptibility Assessments and
	Correspondence
10.9	Cross Connection Control Program
10.10	WSP Adoption and Minutes

Appendix 10.1
WFI, Permit, Sanitary Survey
WFI
Operating Permit
Sanitary Survey



WATER FACILITIES INVENTORY (WFI) FORM

ONE FORM PER SYSTEM

RETURN TO: Southwest Regional Office POB 87423 Olympia WA 98504-7823

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1	3. WATER SYSTEM (DWNERSHIP (mark only o	ne)																	CTODAG	25.044	PACIT	Y
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Pair Time Single Family Residences (Occupied less than MULTI-FAMILY RESIDENTIAL BUILDINGS (Ho			lowing de		~2)	23	1					
A. Apartment Buildings, condos, duplexes, barracks, dorms	w many (or the foll	lowing ac	you nav	e:)	1						
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C. Part Time Residential Units in Apartments, Condos, Dupl												
27. NON-RESIDENTIAL CONNECTIONS (How man					o daya, you	0						
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B. Institutional, Commercial or Industrial Services	-					4						
	28. T(OTAL SEI	RVICE CO	ONNECTION	ONS							
						<u> </u>						
29. FULL-TIME RESIDENTIAL POPULATION												
A. How many residents are served by this system 180 or mo	ore days pe	er year? 9	98									
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?	390	390	390	390	390	390	390	390	390	390	390	390
B. How many days per month are they present?	8	8	8	4	4	4	4	4	4	8	8	8
21 TEMPODADY & TRANSIENT LICEDS	1441	rrn.	MAD	ADD	MAY	ILINI	11.11	ALIC	CED	OCT	NOV	DEC
31. TEMPORARY & TRANSIENT USERS A. How many visitors, attendees, travelers, campers, patients	JAN 700	FEB	MAR	APR		JUN	JUL	AUG	SEP	0CT		DEC 100
or customers have access to the water system each month?	700	700	700	700	700	700	700	700	700	100	100	100
	30	30	30	30	30	30	30	30	30	30	30	30
B. How many days per month are they present?	30	30	30	30	30	30	30	30	30	30	30	30
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	JAN	TED	IVIAIX	ALIX	IVIAT	3011	JUL	AUU	JLI	001	NOV	DEC
our water system, how many students, daycare children												
and/or employees are present each month?												
B. How many days per month are they present?												
3 3 .												
22 POLITIME COLLEGEM COLLEGE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
33. ROUTINE COLIFORM SCHEDULE	1	1	1	1	1	1	1	1	1	1	1	1
34. GROUP B NITRATE SCHEDULE		QUAI	RTERLY			ANNI	JALLY		0	NCE EVE	RY 3 YEAF	RS
This will be suppressed for all Group A systems												
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7/15/2021 Operating Permit



Division of Environmental Health Office of Drinking Water

Help

Individual System View - Timberline Village #628 - Water System Id - 88388B

Compliance Actions	Operating Permits Operators Reports		Reports	Water Use Efficiency
General Information	Source Information	Samples	Exceedances	Water Quality Monitoring Schedule

Last Permit Color Issued: Blue Last Permit Issued Date: 6/1/2021

Last Permit Issued Definition: Blue: Systems in this category are considered adequate for existing uses but are not considered adequate for adding new service connections.

Current Color: Blue

Current Color is what the calculated permit color would be based on information as of 7/8 /2021

Current Color Definition: Blue: Systems in this category are considered adequate for existing uses but are not considered adequate for adding new service connections.

Override Comments:

Current Permit Conditions:

1. System has exceeded the number of connections approved by the Department and needs to bring system into compliance by reducing the number of connections or getting department approval of existing connections.

Home Page | Find Water Systems | Find Water Quality | Downloads/Reports

<u>DOH Home</u> | <u>Community and Environment</u>| <u>Drinking Water Home</u> | <u>Drinking Water Contacts</u> <u>Access Local Health</u> | <u>Privacy Notice</u> | <u>Disclaimer/Copyright Information</u>

Links to external resources are provided as a public service and do not imply endorsement by the Washington State Department of Health

Department of Health, Office of Drinking Water

Street Address:

243 Israel Road S.E. 2nd floor Tumwater, WA 98501 Mail:

PO BOX 47822

Olympia, WA 98504-7822

Send inquiries about DOH and its programs to the Health Consumer Assistance Office

Comments or questions regarding this Web site? Send email to Environmental Health Application Testing and Support or call 888-457-2467.

SOUTHWEST DRINKING WATER OPERATIONS P.O. Box 47823 Olympia, Washington 98504-7823 PHONE (360) 236-3030 FAX (360) 236-3029

SANITARY SURVEY REPORT

Sanitary surveys are the Office of Drinking Water's (ODW) way to inspect public water systems through a field visit. We are also able to offer technical assistance to help improve system operations and ensure public health is protected.

This survey was done virtually with the water system via the internet. This report documents the findings for the following water system.

June 13, 2022	Timberline Village #628 ID #88388B					
Kim Gubbe	County:	Lewis				
PUD No. 1 of Thurston County	System Type:	Community				
1230 Ruddell RD SE	Operating Permit Color:	Blue				
Lacey, WA 98503	Surveyor:	Regina N. Grimm				
	Water System Attendees:	Kim Gubbe				
	Inspection Date:	December 16, 2021				

Significant Deficiencies and Findings are assigned a due date. If you are not able to complete the work by the assigned date, you MUST submit a Corrective Action Plan describing how and when you will complete the work. Failure to respond by the date below will result in further compliance actions in accordance with WAC 246-290-050.

As you correct the items, send me documentation that demonstrates the items have been completed as directed. Include the system name, ID number, item #, and the date the deficiencies were corrected. You can send them to me by e-mail at regina.grimm@doh.wa.gov or by mail at PO Box 47823, Olympia, Washington 98504-7823.

SIGNIFICANT DEFICIENCIES* - NONE FOUND

SIGNIFICANT FINDINGS** - NONE FOUND

OBSERVATIONS

- 1. The bladder tank in the upper pump house is not protected by a pressure relief valve (PRV).
- 2. Reservoirs do not have overflows. Overflows should be provided with capacity to safely pass the maximum flows to which they might be exposed, while also preventing entry of contaminants or obstructions.
- 3. The vents for both tanks are screened, but the holes appeared to be clogged on quite a bit of the screen surfaces. The PUD should replace the screens to ensure adequate airflow into the tanks.

RECOMMENDATIONS

- 4. The paint on the two storage tanks has deteriorated and the tank surface is rusting. The tanks should be painted to protect them from degrading over time.
- 5. The water system is currently overconnected and has a blue operating permit. The system should attempt to request additional connections.

SYSTEM INFORMATION

This is a community water system that is approved for 270 connections, but currently has 286 active connections. They are over-connected and have a blue operating permit. The connection count was corrected when ownership of the water system was transferred to Thurston PUD in 2017.

The water system's facilities include two groundwater wells, two steel storage tanks, a booster station, and the distribution system.

SECTION 1: SOURCE

The system has two groundwater wells that are located on the same site. Well #1 is located inside the pumphouse building and Well #2 is located outside in a separate well house. Both sources are controlled by floats in the storage tanks and pump directly to the tanks.

The casing for Well #1 is very corroded and pieces of steel appear to be starting to flake off. I recommend protecting the casing from further corrosion to extend the life of the well.

Source ID#	Name:	Description:	Ecology Tag #	Listed on WFI Yes No
S01	Well #1	Groundwater well, located in	AFM952	
S02	Well #2		AFM953	\boxtimes

WELLHEAD	Source ID #S01	Source ID #S02
	Yes No	Yes No
*Wellcap sealed	\boxtimes	\boxtimes
*Openings sealed	\boxtimes	\boxtimes
*Vent screened	\boxtimes	\boxtimes
*Protected from flooding	\boxtimes	\boxtimes
**Raw water sample tap	\boxtimes	\boxtimes
**Protected from unauthorized access	\boxtimes	\boxtimes
Structure in good condition	\boxtimes	\boxtimes
Sanitary control area free of contaminants (*If no, is there an approved mitigation plan for the contaminant identified)	Yes	Yes
**Protected from physical damage	\boxtimes	\boxtimes

WELL PUMP EQUIPMENT	Source ID #S01	Source ID #S02
	Yes No	Yes No
*Pump control valve or vacuum relief valve with a protected air gap at discharge	N/A	N/A
Generator available	\boxtimes	\boxtimes
Generator has automatic startup	Transfer s	

SECTION 2: DISINFECTION

This system does not disinfect.

SECTION 3: OTHER TREATMENTS

This system does not have treatment facilities.

SECTION 4: DISTRIBUTION SYSTEM

This distribution system dates from the 1960s and uses a wide variety of pipe types and sizes. Distribution pipes are replaced with PVC.

This system has a very high amount of water loss. Their 2020 water use efficiency report shows the distribution leakage was 62.9 percent and the 3-year average was 72.9 percent. The PUD has been tracking water use closely and actively repairing leaks. Zones are metered to facilitate leak detection and distribution management. They are trying to reduce the leakage to less than 10 percent so they can utilize their full water right and add connections. Their current numbers for 2021 show the DSL is around 40 percent.

The PUD is working on updating their cross-connection control implementation for all their water systems. Currently they require new customers to complete a customer survey to assess whether there is a hazard requiring backflow protection. When they acquired Timberline Village the PUD sent out customer surveys to the existing customers, but many of them didn't respond. This system has two customer accounts with testable devices. The PUD requires annual testing as part of the service policies.

FEATURES	Yes No
Service area and facility map	\boxtimes
Service meters (reading frequency is monthly)	\boxtimes \square
Water system leakage (%)	62.9 % (3-year average 72.9 %)

CROSS CONNECTION CONTROL	Yes No
System has enabling authority	\boxtimes
High hazards identified	\boxtimes
High hazards protected	\boxtimes

CROSS CONNECTION CONTROL	Yes No
Annual testing	\boxtimes
CCS on staff or under contract	\boxtimes
Cross connections observed have been eliminated	N/A

SECTION 5: FINISHED WATER STORAGE

Atmospheric storage is done in twin horizontal steel tanks (30,000 gallons each). The tanks use float switches for fill control. Water level is monitored by pressure transducers in the nearby pump house, which are part of a SCADA system that is remotely monitored.

The tanks have no overflows. Each tank has an isolation valve (4-inch non-rising stem gate valve with square operating nut) with a branch between it and the tank. A similar 2-inch valve on the branch serves as the drain. The valve can be used for sample collection from the tank while it is isolated, with sampling outlets added if needed, for a maintenance project. Drain valves were closed with a valve.

In the event of overfilling, excess water would discharge from the vent (approximately 3-inch diameter steel pipe, screened), as this is the only opening to the atmosphere. Obstruction of the vent would cause tank pressurization during overfill, to the extent that an obstruction could contain pressure. The tanks are not designed to contain pressure. They would suffer structural damage or failure if significantly pressurized.

The vents for both tanks are screened, but the holes appeared to be clogged on quite a bit of the screen surfaces. The PUD should replace the screens to ensure adequate airflow into the tanks. Also, the tanks are showing signs of rust and should be painted to protect them from deterioration.

Reservoir	Reservoir Name	Description	Year Built	Total Volume (Gal)
1	East	Horizontal Steel Cylinder	1982	30,000
2	West	Horizontal Steel Cylinder	1982	30,000

TOP OF RESERVOIR	Res #1	Res #2	
TOP OF RESERVOIR	Yes No	Yes No	
**Hatch: Locked	\boxtimes	\boxtimes	
*Hatch: Watertight seal or gasket	\boxtimes	\boxtimes	
Hatch: Over-lapping cover			
*Screened air vent	\boxtimes	\boxtimes	
*Openings sealed/protected	\boxtimes	\boxtimes	

FEATURES		Res #2	
FEATURES	Yes No	Yes No	
Protected drain outlet	\boxtimes	\boxtimes	
*Protected overflow outlet	N/A	N/A	

FEATURES	Res #1	Res #2
FEATURES	Yes No	Yes No
*Overflow line discharges into a sanitary sewer with an air gap		N/A
**Protected from unauthorized entry	\boxtimes	\square

MAINTENANCE	Res #1	Res #2
MAINTENANCE	Yes No	Yes No
Frequency of cleaning	Tanks have not been cleaned since last survey. We recommend every 5 years.	
Frequency of routine site visit	Monthly Monthly	
**Structure in good condition	\boxtimes	

SECTION 6: PRESSURE TANKS

This system has a single bladder tank in the booster station of the upper pump house. It lacks a PRV.

Site	Location	# and size of Bladder Tanks
1	Upper Pump House	One at 81 Gallons

BLADDER	Site: 1	
DLADDER	Yes No	
Isolation valve	\boxtimes	
Pressure relief valve		
Pressure gauge		
In good condition	\boxtimes	

BUILDINGS/ENCLOSURE	Site: 1	
BUILDINGS/ENCLOSURE	Yes No	
**Facility secure		
Structure in good condition		

SECTION 7: BOOSTER PUMPS AND FACILITIES

A booster pump station (BPS) near the atmospheric storage tanks serves approximately one-third (1/3) of the system in the upper pressure zone. The station is remotely monitored. Pump failure would be indicated by loss of pressure, which would trigger alarm activation.

Facility	Name	Description	Total Capacity (gpm)
1	Upper Pump House	Four 5-(Horsepower) HP pumps with variable speed control.	168

BOOSTER PUMPS	Facility 1
DOOSTER PUNIPS	Yes No
Number of pumps	4
Pressure relief valve	\boxtimes
*Functional pump and pump controls	
Equipment in good condition	\boxtimes \square
Generator available	
Generator has automatic startup	N/A

BUILDINGS/	Facility 1	
ENCLOSURE	Yes No	
**Facility secure	\boxtimes	
Structure in good condition	\boxtimes	

SECTION 8: WATER QUALITY MONITORING AND REPORTING

Refer to the Water Quality Monitoring Schedule for your monitoring requirements and status. If you have any questions on source monitoring, please contact Sophia Petro at (360) 236-3046.

CHEMICAL		
Sample Point	Description	
1	Well Pump House	
2	Well Pump House	

CHEMICAL	Sample Point 1	Sample Point 2	
	Yes No	Yes No	
Monitoring adequate	\boxtimes	\boxtimes	
ODW WQ data reviewed	\boxtimes	\square	
Sample collection sites correct \square		\boxtimes	
System has prior:			
☐ Nitrate results above 5 mg/L			
☐ Nitrite results above 0.5 mg/L			
☐ Primary MCL			
☐ Secondary MCL exceedance(s)			
☐ Organic detections			
☐ Other Enter Other			

COLIFORM	Yes No
Monitoring adequate	\boxtimes
Monitoring plan adequate	\boxtimes
Monitoring plan followed	\boxtimes
# of Treatment Technique Violations (TTV)	None
# of E. coli MCL Violations	None

LEAD & COPPER	Yes No
Monitoring adequate	\boxtimes
Monitoring plan adequate	\boxtimes
Monitoring plan followed	\boxtimes
Results below action level	\boxtimes

SECTION 9: SYSTEM MANAGEMENT AND OPERATIONS

The water system is owned and managed by Thurston PUD1. It was purchased from H&R Waterworks around 2017. The system has a Part B water system plan that was approved prior to acquiring the system from H&R Waterworks (approved in 2009).

Since taking ownership of this system the PUD has made improvements. They have installed missing service meters and have been working to repair distribution leaks to improve the overall DSL percentage. The PUD currently has a capacity analysis project under review with ODW (received in May 2022). They are requesting an increase in the number of approved connections based on their existing physical and legal capacity.

PROJECT/PLANNING	Yes No
System approved	\boxtimes
Current WSP/SWSMP	\boxtimes
Year WSP/SWSMP approved	2009

REPORTING	Yes No	N/A
WFI reviewed and updated with purveyor		
Consumer confidence report (Community only)	\boxtimes	
Water use efficiency report (Municipal Water Suppliers)	\boxtimes	
Cross connection control annual report (> 1000 conn)		\boxtimes

OPERATOR CERTIFICATION

This system is required to have a minimum of one certified operator with a Water Distribution Specialist certification. Their current operator exceeds this requirement. If you have any questions or this information is inaccurate, please contact Operator Certification at (800) 525-2536.

Name of Operator	Certification Number	Certifications	Mandatory Operator
James Campbell	010679	WDM2, WTPO1, CCS	\boxtimes

WDS-Water Distribution Specialist; WDM-Water Distribution Manager; WTPO-Water Treatment Plant Operator, BTO-Basic Treatment Operator; CCS-Cross Connection Specialist; BAT-Backflow Assembly Tester

OPERATIONS	Yes No
Operational records maintained	\boxtimes
Current survey has significant deficiencies identified	
Previous survey deficiencies/findings corrected, if no list below	N/A

CLOSING

Your system qualifies for the reduced frequency of sanitary surveys under WAC 246-290-416. Your next survey is due in 5 years. Regulations establishing a schedule of fees, including fees for sanitary surveys, were adopted March 18, 2012 (WAC 246-290-990). The amount due is \$510. An itemized worksheet is enclosed with the invoice.

If you have any questions, please contact me at (360) 236-3035 or by e-mail at regina.grimm@doh.wa.gov.

Sincerely,

Regina N. Grimm, P.E.

Office of Drinking Water, Regional Engineer

Enclosures

cc: Sue Kennedy, Lewis County Public Health & Social Services

STATE OF WASHINGTON Department of Health

OFFICE OF DRINKING WATER SANITARY SURVEY INSPECTION

INVOICE

PUD NO 1 OF THURSTON COUNTY TIMBERLINE VILLAGE #628 1230 RUDDELL RD. SE. LACEY, WA 98503

WS ID: 88388 Invoice No: 48953

Invoice Date: 06/13/2022 Due Date: 07/28/2022

WS NAME: Timberline Village #628 SURVEY DATE: 12/16/2021

DESCRIPTION	QTY	COST	AMOUNT
Scheduling, Research, Prep	1.00	x \$102.00	\$102.00
Survey Documentation	3.00	x \$102.00	\$306.00
Survey Field Work	1.00	x \$102.00	\$102.00
		Total Amount Due	\$510.00

- 1. **Pay online** with a credit card, debit card, or electronic check (ACH) using the Environmental Health Payment System at https://secureaccess.wa.gov/.
- 2. For billing questions, please contact Southwest Drinking Water Regional Operations at (360) 236-3030.
- 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.
- 5. If paying by check:

Make checks payable to Department of Health, Federal ID #91-1444603.

Please return the bottom portion of this invoice with your check.

Invoice Number: 48953
Invoice Date: 06/13/2022
INVOICE AMOUNT: \$510.00
Owner Number: 018163
WS Name: Timberline Village #628
Invoice Due Date: 07/28/2022

Reference: SANITARY SURVEY INSPECTION PERFORMED ON 12/16/2021

Please remit to:
ACCOUNTS RECEIVABLE
DOH SANITARY SURVEY I

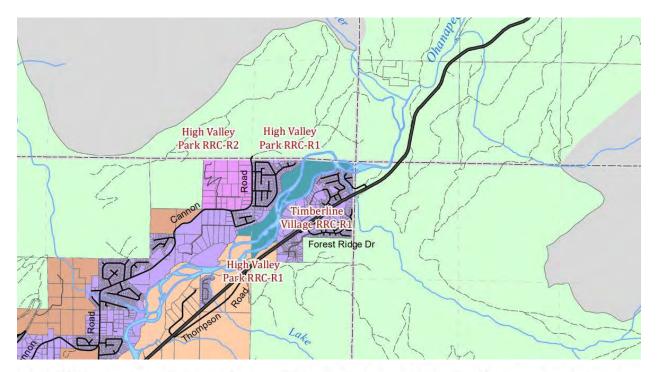
DOH SANITARY SURVEY PROGRAM PO BOX 1099 OLYMPIA, WA 98507-1099

SANITARY SURVEY FEE WORKSHEET

	Department Office of Drin				
	Sanitary Survey	_			
System Name Timberline Village PWS ID # 88388					8
County Lewis County					
Surveyor Regina Grimm	Surveyor Regina Grimm Date: 12/16/21				6/21
System over 10,000 Connections?	NO				
	Quantity				Cost
Department of Health Paid Costs	Hours/Miles				
Survey program RO Coordination	1	\$	102	\$	102.00
Survey Program Administrative Support	1	\$	102	\$	102.00
Travel expenses (Mileage)	0	(# Miles) x (\$.56	i/Mile)	\$	-
Technical Assistance	0	\$	102	\$	-
Travel Time <10,000	0		102	\$	-
Total Department of Health Costs to Perform All Surveys				\$	204.00
Water System Paid Costs	Hours				
Scheduling, research, prep	1	\$	102	\$	102.00
Survey Field Work	1	\$	102	\$	102.00
Survey documentation – preparation of survey report to the					
purveyor	3	\$	102	\$	306.00
Additional Water System	n Paid Costs for syst	ems serving 10,000 or more connections			
	Hours				
	0	\$	-	\$	-
NOTES:	Total Cost of Survey	У		\$	714.00
	Costs Covered by D	ОН		\$	204.00
Invoice amount due (Less than 10,000 Connections)			\$	510.00	

Appendix 10.2 Vicinity and Zoning Maps

Vicinity Map Zoning Map Timberline Plat Map



Official Lewis County Zoning Map

Scale: 1 Inch = 1 Mile

Commissioners April 4, 2002, pursuant to
Ordinance 1179. Amended Oct 8, 2018
pursuant to Ordinance 1296.

Chairman

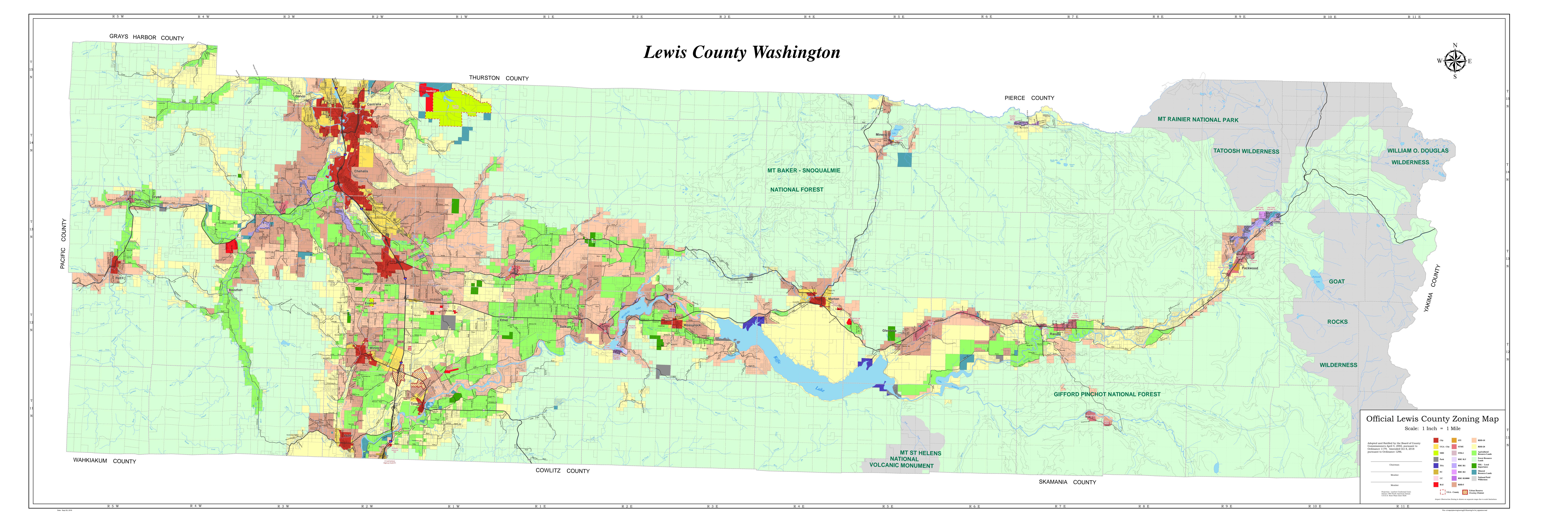
Member

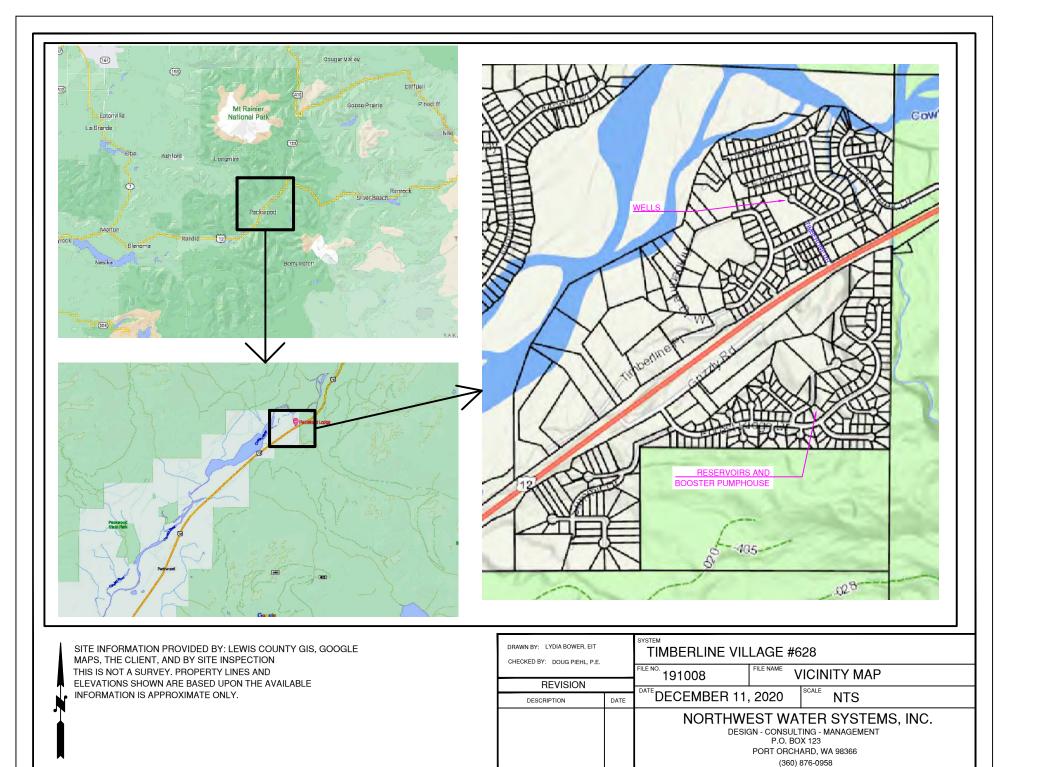
Adopted and Ratified by the Board of County

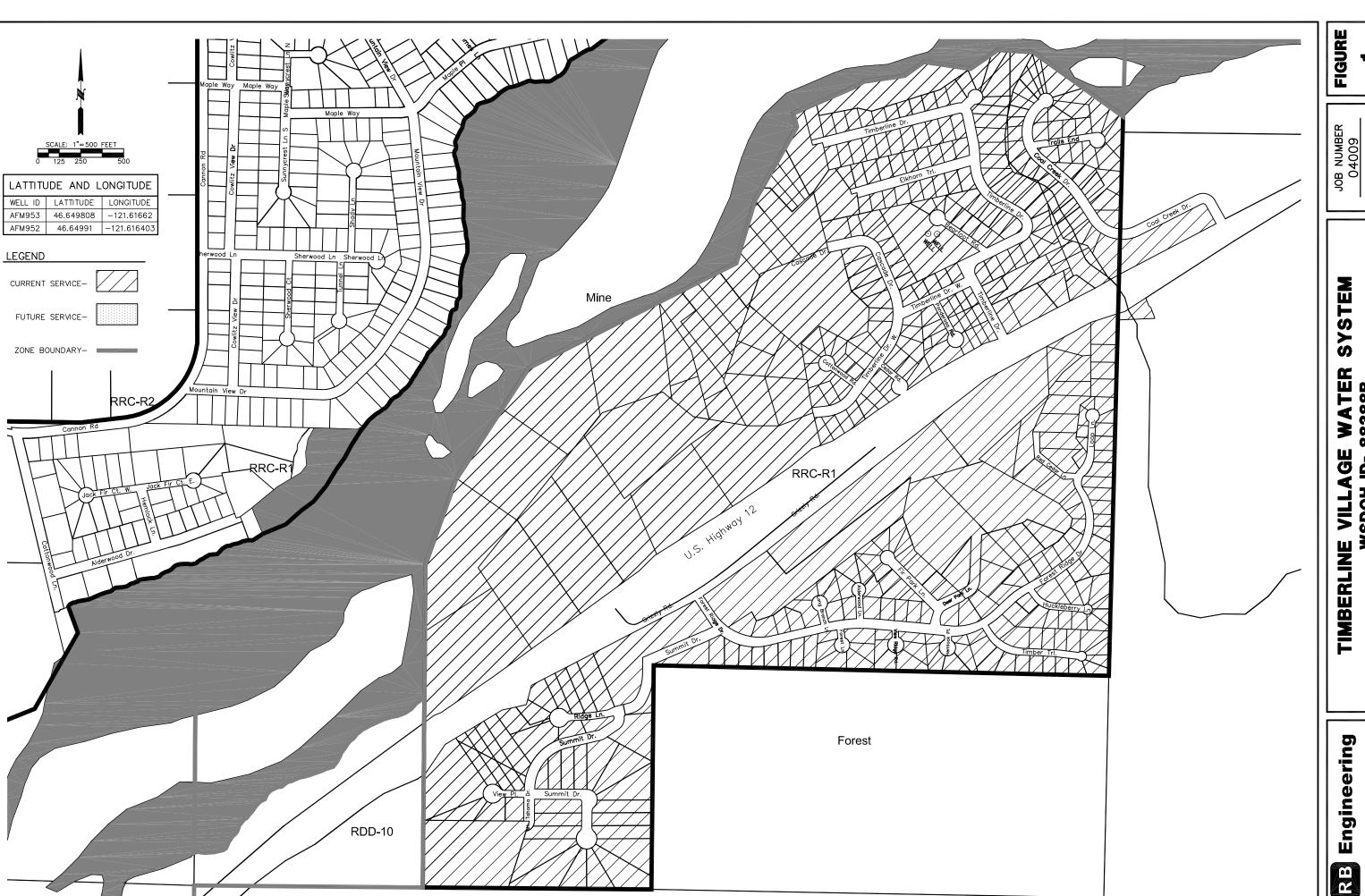
Projection: Lambert Conformal Conic Datum 1983 North American Datum U.S.G.S. State Plane Zone 5626



Airport Obstruction Zoning is shown on separate maps due to scale limitations







DRAWING NAME 04009_88388B SYSTEM

TIMBERLINE VILLAGE WATER WSDOH ID- 88388B

LEWIS COUNTY

Engineering RB ENCINE - L

OFF: (360) 740-8919 FAX: (360) 740-8912 LAND PLANNING — UTILITIES

P.O. Box 923 CHEHALIS, WA

TIMBERLINE VILLAGE

SECTION I, TWP. 13 N, R9E, W.M.

LEWIS COUNTY, WASHINGTON

DESCRIPTION

That portion of the N.E. 1/4 of Section 1, Two 13 N. R. 9.E., W.M., Lewis County, Washington lying East of the centerline of Coal Creek and South of the Southerly bank of Contits River; Except that partion described in Volume 383 Page 322 of deeds, recards of Lewis County, Washington, as per attached drawing

DEDICATION

KNOW ALL MEN BY THESE PRESENTS that we the vadersigned, owners in fee simple NOW ALL MEN OF THESE PRESENTS THAT WE THE UNDERSIGNED, OWNERS TO FEE SIMPLE OF the land hereby platted, hereby declare this plot and dedicates to the use of the public facever, all streets and exsements or impotence public property there is shown on the plat and the use thereof for any and all public purposes; also the right to make all necessary stopes for cuts or filts upon the lots, blacks, tracts, etc., shown on this plat in the reasonable original grading of all streets shown because IN WITNESS WHEREAF WE have because set or hands and seal this. A day of Ee. 1864.

MA NEST INDUSTRIES CORP. De Metrick Pres. James Petrick Sec. Muchel Sylda

STATE OF WASHINGTON 35

This is to certify that an the A day of February 1864, before me the undersigned a Notary Public personally repeated Oder & Gunhind Tselde individuals; d.M.

Person and domes d. Person respectively of the Nest Industries Conserved the Nashington Corporation, to me known to be the persons who encovied the largegoing dedication and acknowledged to me that they signed and socied the same as their free and rabintary and and deed for the uses and purposes in SCALE: 1"= 100 therein mentioned; and on oath stated that they were subtorized to encounter the said instrument and that the seal affined is the corporate seal of said WITHESS my hand and official seal the day and year first obere written.

Notary Postic in and for the store of Mushington Residing of Pachwood_

ACKNOWLEDGMENT

676309

WHITE

TREASURER'S CERTIFICATE

I hereby certify that the taxes on the land described hereon have been paid to and including the year 1966.



APPROVALS

Examined and approved this 3 day of MARCH 1868

Examined and approved this 8 day of MARCH

Tionis county session Examined and approved this & day of MARCH - 1805.

Leas Lawre Demanner.

- Very Justor

Examined and approved this - Boney of Tours Commissioners

RECORDING CERTIFICATE

Tiled for record at the request of least the sequest of least 300 octock P. M., and recorded in Yolano 5 & Plots, on Page 83 Records of Lewis County, Washington.

O



I hereby certify that the plat of TIMBERLINE VILLAGE is based upon an actual survey and subdivision of Section 1, TWP 13 N, R9E, W.M. that the distances and causes and angles are shown thereon correctly; that proper manuments have been set and lot and block corners staked on the ground.

26

Francis E. FISTIER Certificate Na 8015

TIMBERLINE VILLAGE DIV. NO. 2 SECTION I, TWP. 13 N, R9E, W.M. LEWIS COUNTY, WASHINGTON SCALE: 1"= 100" NTB. 50 21 E TIMBERLINE 101 MAG T20~51(0) SHEET 2 OF 2 SHEETS

TIMBERLINE VILLAGE DIV. NO. 2

SECTION I, TWP. 13 N, R9E, W.M.

LEWIS COUNTY, WASHINGTON

DESCRIPTION

Beginning at the intersection of Coal Creek DRIVE and the center line of WHITE PASS HAY! as recorded in the plat of Timberline Village in Section 1. Two 13 N, RIE, W.M. in Lewis County, Washington; thence 5 64°08'06'W 122.49 ft. to the point of beginning; thence N25°50'54'W 485.00 ft.; thence N64°08'06'E 137.69 ft.; thence N 52°29'24"W 236.09 ft.; thence around a curve to the right with a radius of 45.00 ft. through an arc of 147°49'56' 116.11 ft.; thence N 58°16'12"W 159.79 ft.; thence 5 76°50'21"W 300.00 ft.; thence N 15°09'39"W 150.00 A 30 16 12 11 19x 19 11; mence 3 10 30 21 11 300.0011; mence 11 10 01 31 11 100.00

ft.; thence 5 76°50'21'11 3800 ft.; thence 11 13°09'39'11 30.00 ft.; thence 130°22'

42'11 135.14 ft.; thence 5 76°50'21'11 39.00 ft.; thence 11 13°09'39'11 159'09'39'11 159.08 ft.;

thence 5 76°50'21'11 42.00 ft.; thence 11 13°09'39'11 155ft. more or less to the

south bank of Conlitz River; thence easterly along the bank of said

river 1280 ft. more or less to the center line of Cast Creek; thence

southerly along said center line of Cool Creek to the intersection with White Pass Hry.; thence 5 64°09'06'N along the center line of White Pass Hry. to the true point of beginning; Except the State Hry. right of way-reference this description to Sheet 2 of 2 of this plat.

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, that we the undersigned, owners in fee simple errow all men by these pursents that we the understance, owners in the simple of the land hereby platted, hereby declare this plat and dedicates to the use of the public forever, all streets and essements or whatever public property there is shown on the plat and the use thereof for any and all public purposes; also the right to make all necessary slopes for cuts or fills upon the lots blacks, tracts, etc, shown on this plat in the reasonable original grading of all streets shown hereon in witness wherever we have hereunto set our hands and seal this day of it.

FAR WEST INDUSTRIES CORP.

ACKNOWLEDGMENTS

COUNTY OF MASHINGTON SS. This is to certify that on the 15 day of July _____ 1865, before me the undersigned a Notary Public personally appeared J.M. Petricu and James L. Petricu President and Secretary respectively of the West Thoustries Corporation, a Washington Corporation, to me known to be the persons who executed the foregoing destration and acknowledged to me that they signed and sealed the forme as their free and rabilitary act and deed for the uses and purposes therein mentioned; and on ooth stated that they were authorized to execute said instrument and that the seal officed is the corporate seal of said WINESS my hand and official seal the day and year first above written.

> Notory Public in and for the State of Washington Residing of Vacora

LAND SURVEYORS CERTIFICATE

I hereby certify that the plat of TIMBERLINE VILLAGE DN. NO. 2 is based upon an actual survey and subdivision of Section 1, Two 13 N, R9E, W.M. that the distances and courses and angles are shown thereon correctly. That proper monuments have been set and lot and block corners staked on the ground.

Certificate No. 8015

TREASURER'S CERTIFICATE I hereby certify that the taxes on the land described hereon have been paid to and including the year 1966

587754

RECORDING CERTIFICATE

Filed for record of the request of 10 minutes past 11 oclock A. M., and recorded in Valume of Plats, on Page 9 4 Records of Lowis County, Washington. fort I Venemon

Deputy County Auditor

STATE OF WASHINGTON SS.

This is to certify that on the I day of Oct ___ 1965, before me the undersigned a Notary Public personally appeared oden Toeloe and Gunhild Tielde his wife; to me known to be the individuals who executed the foregoing dedication and acknowledged to me that they signed and sealed the same as their free and valuatory act and deed for the uses and purposes

WITNESS my hand and official seal the day and year first above written tary Public in and the the State of Washington siding at faction

APPROVALS

Examined and approved this 15th day of NOVEMBER 1965

Examined and opproved this IT day of MOV. ___ 1865

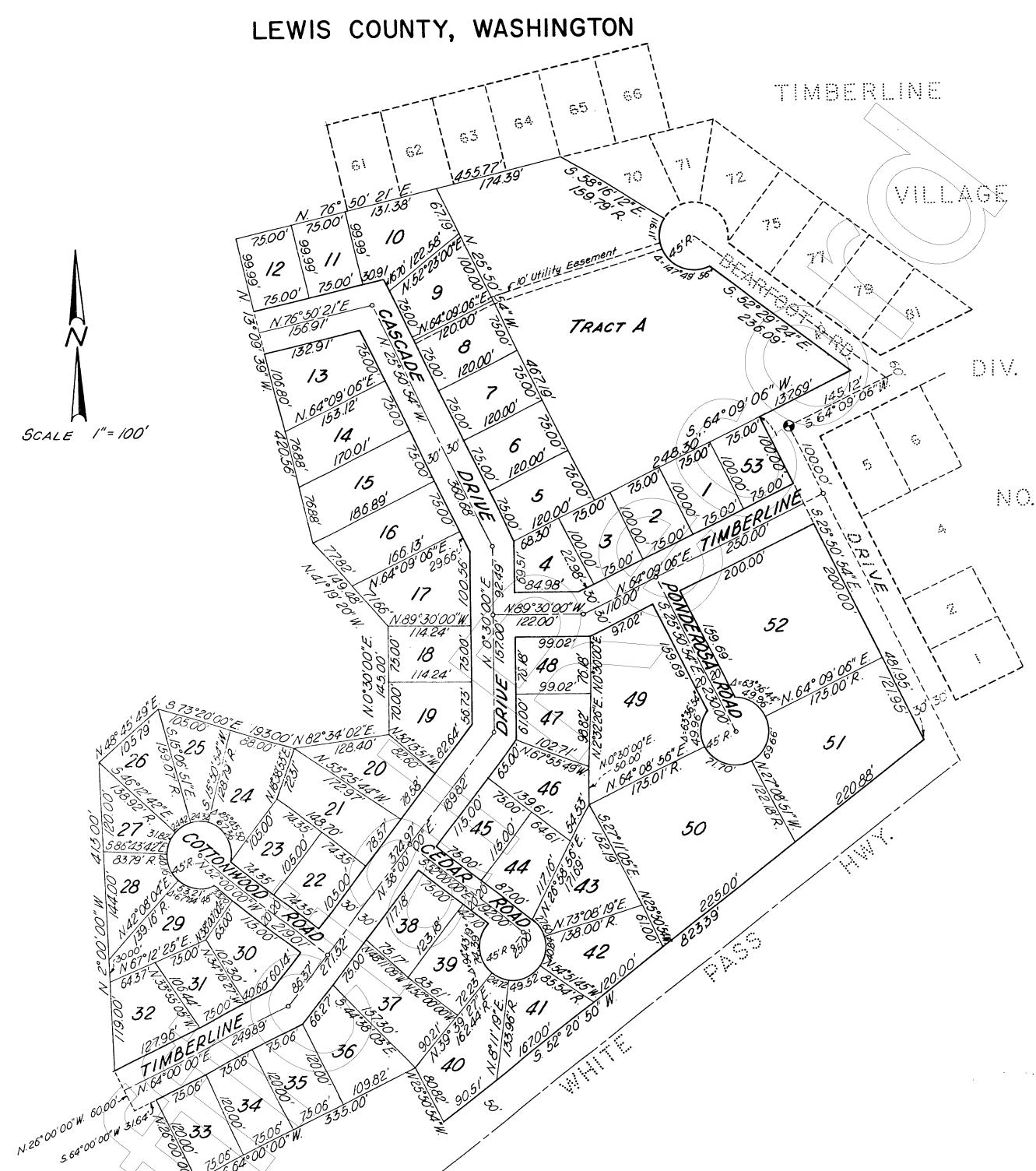
Levis County Assessor Examined and approved this 18th day of NOVEMBER 1865
LEWIS CONIN PLANNING DEPLACEMENT

Examined and approved this 22 xdoy of NOVEMBER 1965

2002577 / B/5 P-94 PG 2 OF 2

TIMBERLINE VILLAGE DIV. NO. 3

SECTION I, TWP. 13 N, R. 9 E, W.M.



DESCRIPTION

0

That portion of Section 1. Township 13 North, Range 9 East, W. M., in Lewis County,

Washington, described as follows:

Commencing at the intersection of Timberline Drive and Bearfoot Road, as shown on the plat of Timberline Village Division No. 2, recorded in Volume 3 of Plats, on Page 94, Records of Lewis County, Washington; thence 5. 64°09'06" W. 175.12 ft.; thence N. 25°50'54" W. 30.00 ft. to the True Point of Beginning of this description; thence 5. 25°50'54" E. 48.95 ft.; thence 5. 52°20'50" W. 823.39 ft.; thence N. 25°50'54" W. 8082 ft; thence 5. 64°00'00" W. 335.00 ft.; thence N. 26°00'00" W. 120.00 ft.; thence 5. 64°00'00" W. 31.64 ft.; thence N. 26°00'00" W. 120.00 ft.; thence 5. 64°00'00" W. 31.64 ft.; thence N. 26°00'00" W. 60.00 ft.; thence N. 2°00'00" W. 413.00 ft.; thence N. 48°45'49" E. 105.79 ft.; thence S. 73°20'00" E. 193.00 ft.; thence N. 82°34'02" E. 128.40 ft.; thence N. 0°30'00" E. 145.00 ft.; thence N. 41°19'20" W. 149.48 ft.; thence N. 13°09'39" W. 140.56 ft.; thence N. 76°50'21" E. 455.77 ft.; thence 8. 58°16'12" E. 159.79 ft. to a 420.56 ft.; thence N. 76°50'21" E. 455.77 ft.; thence 8. 58°16'12" E. 159.79 ft. to a 420.56 ft.; thence on a curve to the left having a radius of 45.00 ft. from said center of Bearfoot Road cul-de-sac an arc distance of 116.11 ft.; thence 5. 52°29'24" E. 236.09 ft.; thence S. 64°09'06" W. 137.69 ft. to the True Point of Beginning.

LEGEND

• Set Monument
• Existing Monument



.

LAT - \$0.00

U

20 Gary

025 Zande eclaration and Overante

LEWIS - REDFORD - ENGINEERS

SHEET 1 OF 2

DEDICATION

KNOW ALL MEN BY THESE PRESENTS that we, the under signed owners in fee simple of the land hereby platted, hereby declare this plat and dedicate to the use of the public forever, all streets and easements or whatever public property there is shown on the plat and the use thereof for any and all public purposes; also, the right to make all necessary slopes for cuts or fills upon the lots and tract shown on this plat in the reasonable original grading of all streets, shown hereon.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this 24 day of Felinary 1967.

Signed and sealed

FAR WEST INDUSTRIES CORP.

James J. Petrick James J. Petrick Secretary

Oden Fjelde Gunhild Zjelde

ACKNOWLEDGMENTS

STATE OF WASHINGTON) COUNTY OF PIERCE)

This is to certify that on this 3+ day of February 1961, before me, the undersigned, a Notary Public, personally appeared J. M. Petrich and James L. Petrich, President and Secretary respectively of FAR WEST INDUSTRIES CORPORATION, A WASTINGTON CORPORATION, TO ME KNOWN to be the persons who executed the foregoing dedication and acknowledged to me that they signed and sealed the same as their free and voluntary act and deed for the uses and purposes therein mentioned; and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

WITNESS my hand and official seal the day and year finst written above.

> Notary Public in and for the State of Washington Residing at Varia

STATE OF WASHINGTON) COUNTY OF PIERCE

purposes therein mentioned.

This to certify that on the and day of Fine 196% before me, the undersigned, a Notary Public, personally appeared oden tielde and Gunhild Tielde, his wife, to me known to be the individuals who executed the foregoing dedication and acknowledged to me that they signed and sealed the same as their free and voluntary act and deed for the uses and

WITNESS my hand and official seal the day and year first written above

Notary Public in and for the State of Washington Residing at Vasoma

LAND SURVEYOR'S CERTIFICATE

I hereby certify that the plat of TIMBERLINE VIL-LAGE DIV. NO.3 is based on actual survey and subdivision of Sec. I, Twp. 13 N, R. 9 E, W.M., that the distances, courses, and angles are shown correctly thereon; that proper monuments have been set and lot and block corners staked on the ground.

> SIGNED Jarry H. Hall LARRY G. HALL Licensed Land Surveyor Certificate # 9154

EXAMINED AND APPROXED this day of Mach 1967.

(Lewis County Road Engineer) (SEAL)

EXAMINED AND APPROVED this 6 day of MARCH 1967

Lewis County Assessor

EXAMINED AND APPROVED this 6th day MARCH 1967.

Lewis County Planning Department.

EXAMINED AND APPROVED this 6th day MARCH 1967.

BOARD OF COUNTY COMMISSIONERS OF LEWIS COUNTY, WASHINGTON

TREASURER'S CERTIFICATE

I hereby certify that the taxes on the land described hereon have been paid to and including the year 1967.

Lewis County Treasurer)

RECORDING CERTIFICATE

Filed for record at the request of Vern J. this 6th day of march 1967, at 48 minutes past 4 o'clock P.M. and recorded in Volumes of Plats, on Page 114, Records of Lewis County, Washington. 707226

(Lewis County Auditor)

(Deputy Auditor)

RESTRICTIONS

All building construction is to be approved by Far West Industries Building Committee.

Tract A will be sold to the Timberline Village Community Club, composed of all property owners in this plat, for the sum of one (1) dollar.



LEWIS - REDFORD - ENGINEERS

SHEET 2 OF 2

IMBERLINE

SECTION I, TWP. 13 N, R. 9 E, W.M.

LEWIS COUNTY, WASHINGTON

DEDICATION

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned owners in fee simple of the land hereby platted, hereby declare this plat and dedicate to the use of the public forever, all streets and easements or whatever public property there is shown on the plat and the use thereof for any and all public purposes; also, the right to make all necessary slopes for cuts or fills upon the lots and tract shown on this plat in the reasonable original grading of all streats, shown hereon.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this 27 day of

MAY ,1968.

Signed and sealed

FAR WEST INDUSTRIES CORP.

This is to certify that on this 27 day of MAY, 1968, before me, the undersigned, a Notary Public, personally appeared J.M. Petrich and James J., Petrich, President and Secretary respectively of FAR WEST INDUSTRIES CORPORATION, a Washington corporation, to me known to be the persons who executed the foregoing dedication and acknowledged to me that they signed and sealed the same as their free and voluntary act and deed for the uses and purposes therein mentioned; and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corpo-. , rate seal of said corporation.

WITNESS my hand and official seal the day and year first written above.

STATE OF WASHINGTON) COUNTY OF Lewis

This is to certify that on this 26 day of JUNE, 1968, before me, the undersigned, a Notary Public, personally appeared Oden Tjelde and Gunhild Tjelde, his wife, to be known to be the individuals who executed the foregoing dedication and acknowledged to me that they signed and sealed the same as their free and voluntary act and deed for the uses and purposes therein mentioned.

WITNESS my hand and official seal the day and year first written above.

Washington, Residing at Morten

STATE OF WASHINGTON) COUNTY OF FRERCE

This is to certify that on the 27 day of Max, 1968, before me, the undersigned, a Notary Public, personally appeared Uno Ostrom and Irene Ostrom, his wife, to me known to be the Individuals who executed the foregoing dedication and acknowledged to me That they signed and sealed the same as their free and voluntary act and deed for the uses and purposes therein mentioned,

WITNESS my hand and official seal the day and year first written above.

NOTARY PUBLIC in and for the State of Washington, Residing at MMMPIER

LAND SURVEYOR'S CERTIFICATE

I hereby certify that the plat of TIMBERLINE VILLAGE DIV. NO. 4 is based on actual survey and subdivision of Sec. 1, Twp. 13 N., R. 9 E., W.M., that the distances, courses, and angles are shown correctly thereon; that proper monuments have been set and lot and block corners staked on the ground.



SIGNED Richard J./Hill

Licensed Land Surveyor Certificate #9349

LEWIS - REDFORD - ENGINEERS

APPROVALS

(SEAL) CLEWIS COUNTY ROAD ENGENEER)

EXAMINED AND APPROVED this

EXAMINED AND APPROVED this 12 day of August

LEVIS COURT PLANNING DEPARTMENT (DI RECTOR)

EXAMINED AND APPROVED this / 9 day of Guguet, 196 &.

BOARD OF COUNTY COMMISSIONERS OF LEWIS COUNTY, WASHINGTON

(CHAIRMAN)

TREASURER'S CERTIFICATE

I hereby certify that the taxes on the land described hereon have been paid to and including the year 196 T.



RECORDING CERTIFICATE

Filed for record at the request of Vern F. Cain 3ud day of Sefet., 1968, at 5/minutes past 110°clock AM, and recorded in Volume ___ of Plats, on page___, Records of Lewis County, Washington.

(DEPUTY AUDITOR)

EESTRICTIONS

All building construction is to be approved by Far West Industries Building Committee.

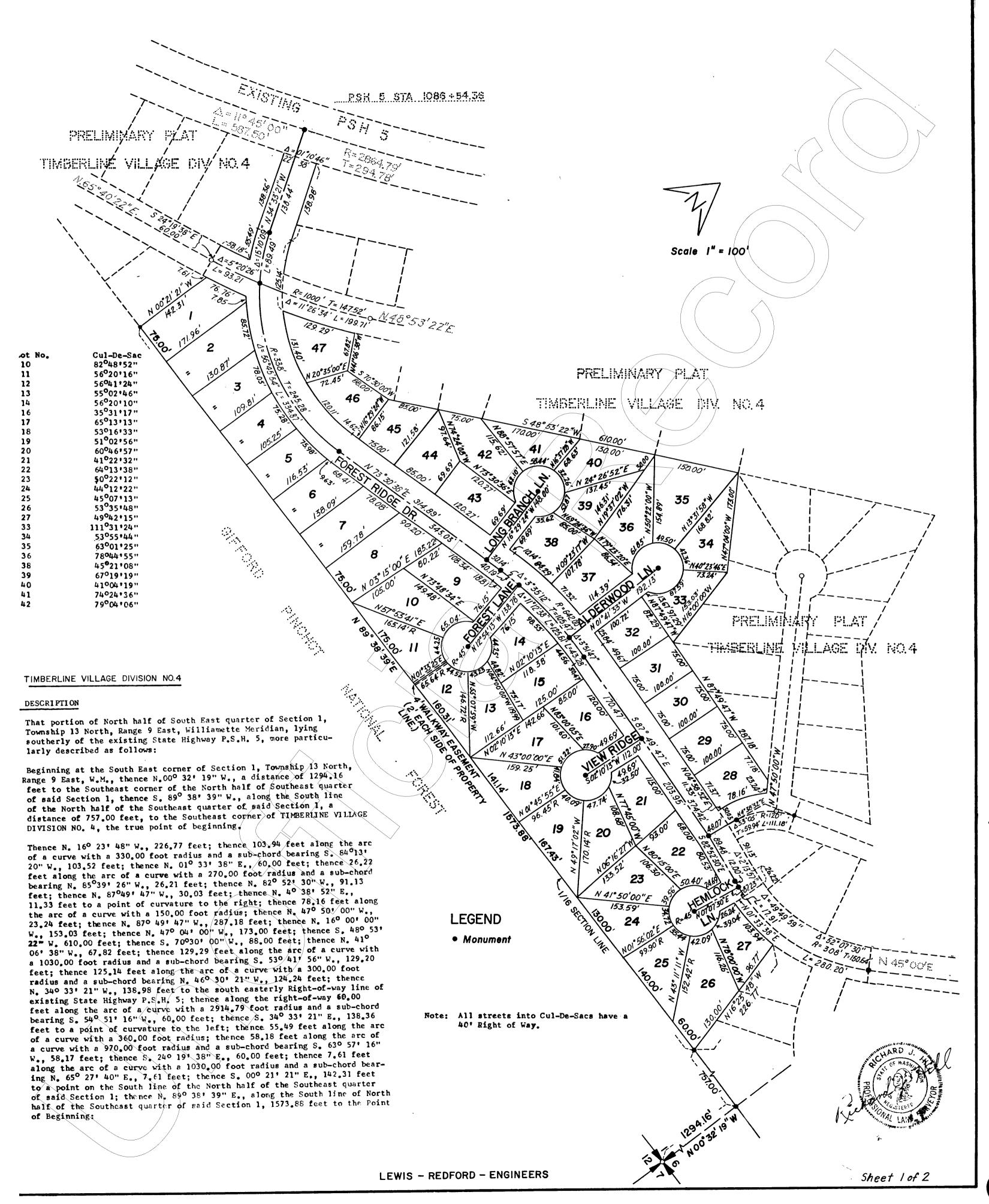
Mobile Homes and/or House Trailers shall not be allowed for use as a dwelling within Timberline Village Div. No. 4 Subdivision.

Sheet 2 of 2

TIMBERLINE VILLAGE DIV. NO. 4

SECTION I, TWP. I3 N, R. 9 E, W.M.

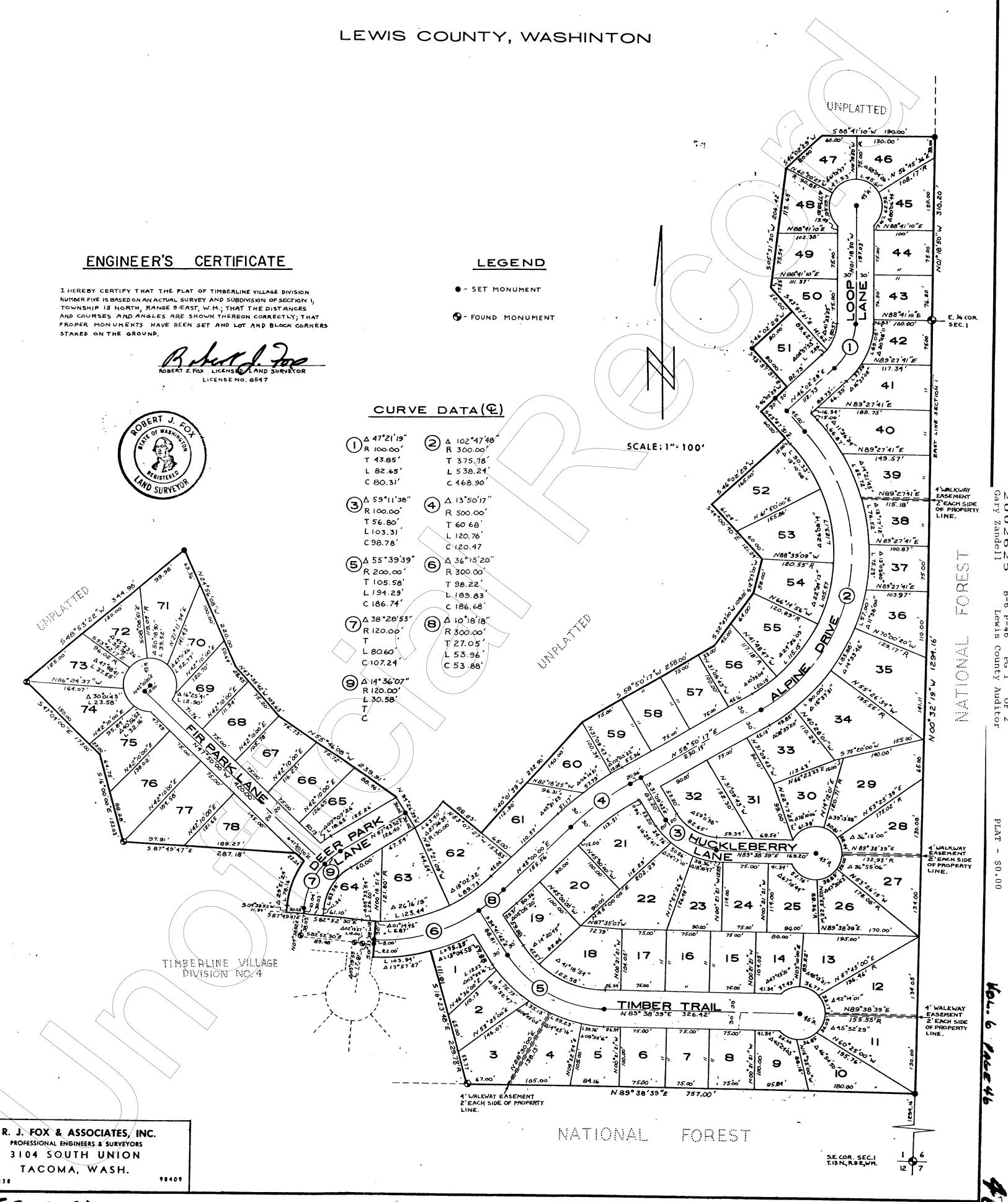
LEWIS COUNTY, WASHINGTON



TIMIBERLINE VILLAGE

DIVISION NUMBER FIVE

LOCATED IN SEC. I T.I3N., R.9E., W.M.



TIMBERLINE VILLAGE

DIVISION NUMBER FIVE

LOCATED IN SEC. I T. 13 N., R. 9 E., W.M. LEWIS COUNTY, WASHINTON

LEGAL DESCRIPTION

That portion of the East half of Section 1, Township 13 North, Range 9 East, W.M. in Lewis County, Washington, described as follows: Beginning at the Southeast corner of Section 1, Township 13 North, Range 9 East, W.M. thence North 00° 32' 19" West, 1294.16 feet to the true point of beginning. Thence continuing North 00° 32' 19" West, 1294.16 feet to the East quarter corner of said Section 1; thence North 01° 18' 50" West, 310.20 feet; thence South 88° 41' 10" West, 190.00 feet; thence South 46° 02' 29" West, 80.00 feet; thence South 05° 31' 30" West, 206.42 feet; thence South 43° 57' 31" East, 52.00 feet; thence South 46° 02' 29" West, 90.00 feet; thence South 43°57' 31" East, 90.00 feet; thence South 46° 02' 29" West, 60.00 feet; thence South 430 57' 31" East, 60.00 feet; thence South 460 02' 29" West, 165.00 feet; thence South 44° 00' 40" East, 121.24 feet; thence South 12° 53' 00" West, 58.00 feet; thence South 32° 43' 00" West, 109.00 feet; thence South 58° 50' 17" West, 258.00 feet; thence South 40° 01' 39" West, 252.90 feet; thence North 53° 07' 27" West, 88.83 feet to a point on a curve to the left having a tangent at that point of South 29° 45' 11" West; thence along said curve to the left, having a radius of 130.00 feet, a central angle of 27° 26' 34", for an arc length of 63.40 feet; thence North 34° 26' 39" West, 60.04 feet; thence North 55° 46' 08" West, 239.91 feet; thence North 43° 35' 42" West, 103.63 feet; thence North 24° 56' 08" West, 220.00 feet; thence South 48° 53' 22" West, 344.98 feet; thence South 47° 04' 00" East, 173.00 feet; thence South 16° 00' 00" East, 153.03 feet; thence South 87° 49' 47" East, 287.18 feet; thence South 17° 50' 00" Feet, 22 21 feet to a point on a survey to the left having a thence South 47° 50' 00" East, 23.24 feet to a point on a curve to the left having a tangent at that point of South 340 30' 18" West; thence along said curve to the left having a radius of 150.00 feet, a central angle of 29° 51' 24", for an arc length of 78.16 feet; thence South 04° 38' 52" West, 11.34 feet; thence South 87° 49' 47" East, 30.03 feet; thence South 82° 52' 30" East, 91.13 feet to a point on a curve to the left having a radius of 270.00 feet, a central angle of 05° 33' 54", for an arc length of 26.20 feet; thence South 01° 33' 38" West, 60.00 feet to a point on a curve to the left, having a tangent at that point of South 880 26' 24" East; thence along said curve to the left having a radius of 330.00 feet, a central angle of 170 57' 27", for an arc length of 103.94 feet; thence South 160 23' 48" East, 229.78 feet; thence North 89° 38' 39" East, 757.00 feet to the true point of beginning.

DEDICATION

KNOW ALL MEN BY THESE PRESENTS that we, the undersigned owners in fee simple of the land hereby platted, hereby declare this plat and dedicate to the use of the public forever, all streets and easements or whatever public property there is shown on the plat and the use thereof for any and all public purposes; also, the right to make all necessary slopes for cuts or fills upon the lots and tracts shown on this plat in the reasonable original grading of all streets, shown hereon.

IN WITNESS WHEREOF, we have hereunto set our hands and seals this ______day of

FAR WEST INDUSTRIES

Ol July

ACKNOWLEDGMENT

STATE OF WASHINGTON COUNTY OF PIERCE

THIS IS TO CERTIFY that on this 16 day of February, 1970, before me, the undersigned, a Notary Public, personally appeared J. M. Petrich and James J. Petrich, President and Secretary respectively of FAR WEST INDUSTRIES CORPORATION, a Washington corporation, to me known to be the persons who executed the foregoing dedication and acknowledged to me that they signed and sealed the same as their free and voluntary act and deed for the uses and purposes therein mentioned; and on oath stated that they were authorized to execute said instrument and that the seal affixed is the corporate seal of said corporation.

WITNESS my hand and official seal the day and year first above written.

Notary Public in and for the State of Washington, residing at Tacoma

ACKNOWLEDGMENT

STATE OF WASHINGTON

THIS IS TO CERTIFY that on this 16 day of February, 1970, before me, the undersigned, a Notary Public, personally appeared Carn Tjelde and Gunhild Tjelde, his wife, to me known to be the individuals who executed the foregoing dedication and acknowledged to me that they signed and sealed the same as their free and voluntary act and deed for the uses and purposes therein mentioned.

WITNESS my hand and official seal the day and year first above written.

Notary Public in and for the State of Washington, residing at

ACKNOWLEDGMENT

STATE OF WASHINGTON COUNTY OF PIERCE

me, the undersigned, a Notary Public, personally appeared Uno Ostrom and Irene Ostrom, his wife, to me known to be the individuals who executed the foregoing dedication and acknowledged to me that they signed and sealed the same as their free and voluntary act and deed for the uses and purposes therein mentioned.

WITNESS my hand and official seal the day and year first above written.

Notary Public in and for the State of Washington, residing at Tacoma

RESTRICTIONS

All building construction is to be approved by Far West Industries Building Committee.

Mobile Homes and/or House Trailers shall not be allowed for use as a dwelling within Timberline Village Division No. 5 Subdivision.

APPROVALS

Examined and approved this_

Examined and approved this 15 day of TUND

Examined and approved this 15 day of June

LEWIS COUNTY PLANNING DEPARTMENT

Examined and approved this 15 day of

I HEREBY CERTIFY that the taxes on the land described hereon have been paid to and including the year 1970. 1971

Filed for record at the request of

of Plats, on pages 46-47, Records of Lewis P.m., and recorded in Volume_6_

County, Washington.

Levis County Auditor

Deputy Auditor

R. J. FOX & ASSOCIATES, INC. PROFESSIONAL ENGINEERS & SURVEYORS 3104 SOUTH UNION TACOMA, WASH.

T-20-92(2)

PORTION

OF SECTION 1, WASHINGTON

≲. **≤**.

N WITNESS WHEREOF, WE HAVE HEREUNTO SET OUR HAND (S) AND SEAL THIS

NANT
LAND DESIGNATED FOR COMMERCIAL FOREST
OF ACTIVITIES THAT MAY NOT BE COMPATIBLE
IN PERIODS OF LIMITED DURATION. IN ADDITION
TOISE, DUST, SMOKE, VISUAL IMPACTS, AND
TING, APPLICATION OF FERTILIZERS, HERBICIDES,
WHEN PERFORMED IN ACCORDANCE MITH
FOREST MANAGEMENT ACTIVITIES ARE NOT
ANCE.

BASIS OF BEARING
THE EAST LINE OF THE SOUTHEAST QUARTER OF THE SOUTHWEST QUARTER,
SAID BEARING BEING S 00"14"41" W PER LEWS COUNTY RECORD OF SURVEY,
BY RIIPINEN SURVEYING RECORDED UNDER AUDITOR'S FILE NUMBER 3043427.

THIS SURVEY AND PLAT IS BASED UPON THE RECORD OF SURVEY BY RIIPENEN SURVEYS UNDER RECORDING No. 3043427 AND TIMBERLINE VILLAGE 5 ACRETRACTS UNDER RECORDING No. 856014

FIELD SURVEY NOTE

TRACTS 17,18, 20, 21, 22, AND 23 OF TIMBERLINE VILLAGE 5 ACRE TRACTS AS DELINEATED ON SEGREGATION SURVEY RECORDED DECEMBER 4, 1978 UNDER AUDITOR'S FILE NO. 856014 IN VOLUME 3 OF SURVEYS PAGES 31 AND 31A AND LOCATED IN SECTION 1, TOWNSHIP 13 NORTH, RANGE 9 EAST, W.M., LEWIS COUNTY, WASHINGTON.

LEGAL

DESCRIPTION OF PARCEL

Y BE GREATER THAN THE LEVEL ESTABLISHED ERAL HIGHWAY ADMINISTRATION REGULATIONS.
ATTON WILL NOT BE RESPONSIBLE FOR ANY BE NECESSARY FOR HIGHWAY-RELATED

CONDITIONS OF DEVELOPMENT
DISCHARGE OF PETROLEUM OR HAZARDOUS MATERIAL TO ANY DITCH, SWALE, OR OTHER NON-IMPERVIOUS SURFACED AREA WHERE MIGRATION TO AN AQUIFER IS REASONABLY LIKELY SHALL BE PROHIBITED. FOR IMPERMOUS SURFACE AREAS OF 5,000 SISTENT WITH THE LEWIS COUNTY INTERIM

OIL-WATER SEPARATORS SHALL BE REQUIRED ISQUARE FEET OR LARGER, OR OTHERWISE CONSCRIPTION AREAS ORDINANCE.

BURIED TANKS OF ANY PETROLEUM OR HAZARDOUS MATERIAL SHALL BE PROHIBITED UNLESS SAID TANK IS DOUBLE WALL PROTECTED.

HIGH INTENSITY AND SPECIAL HIGH INTENSITY USES AND DEVELOPMENT SHALL BE CONSISTENT WITH THE AQUIFER RECHARGE AREAS ELEMENT OF THE LEWS COUNTY CRITICAL AREAS ORDINANCE, NO. 1150. ALL DEVELOPMENT SHALL COMPLY WITH THE UNIFORM BUILDING CODE FOR SEISMIC RISK ZONE 3.

NOTE

LOW INTENSITY DEVELOPMENT SHALL MAINTAIN LOCATED ALONG THE EAST BOUNDARY OF SITE HUNDRED FOOT SETBACK A FIFTY FOOT SETBACK FROM THE CLASS 3 STREAM . HIGH INTENSITY USES SHALL MAINTAIN A ONE

FOR PRIMARY CONTROL TRAVERSES LOCATING EXISTING LAND SURVEY
MONUMENTS, THE FOLLOWING DATA APPLIES...

1. FIELD EQUIPMENT UTILIZED: GEODIMETER 600 SERIES TOTAL STATION HAVING A
STANDARD DEVIATION (PER DIN 18723) OF 2 SECONDS FOR HORIZONTAL
AND VERTICAL ANGLES, AND +/-(0.01 FT + 2 PPM) FOR HORIZONTAL
DISTANCE MEASUREMENTS.

2. ELECTRONIC TOTAL STATION INSTRUMENT TRAVERSES AND CLOSED LOOP
TRAVERSES UTILIZED FOR CONTROL AND LAND MONUMENTATION LOCATION.
IF OPEN ENDED TRAVERSES ARE UTILIZED ANGLES AND DISTANCES ARE
DOUBLE MEASURED.

3. TRAVERSE TECHNIQUES YIELD PRECISION OF BETTER THAN 1:10,000. FOR
ESTABLISHING LAND CORNERS, THE FOLLOWING DATA APPLIES...
1. A GEODIMETER 610 TOTAL STATION, ADJUSTABLE PRISM POLE AND
SINGLE PRISM WERE UTILIZED.
2. CORNERS ESTABLISHED WITH RADIAL SURVEY PROCEDURE AND
VERIFIED BY INDEPENDENT MEASUREMENTS.
3. POSITIONAL ACCURACY OF LOCATED AND/OR ESTABLISHED
CORNERS IS ESTIMATED TO BE WITHIN 0.10 FEET WITH RESPECT TO
THE NEAREST TRAVERSE CONTROL POINT.
ALL MEASUREMENTS (METERS), MULTIPLY BY 0.30480061.

TRACT "A" AND TRACT "B" TO BE DEDICATED ASSOCIATION UPON FILING OF THE PLAT. TO THE HOMEOWNERS

TEMS PER SUBDIVISION GUARANTEE

SURVEY BY RIIPINEN SURVEYORS RECORDED UNDER INE VILLAGE 5 ACRE TRACTS AS PER THAT RECORD OF 856014. I HELD THE FOUND BLM MONUMENT AT THE MONUMENT AT THE NORTHWEST QUARTER OF THE MONUMENT AT THE NORTHWEST QUARTER OF THE STEEL THEN HELD THE ANGLE AND DISTANCE GOING THE CORNER TO TRACT 23. I THEN ESTABLISHED THE RE APPEARS TO BE A GAP BETWEEN THE SURVEYED AGE #4 AND TIMBERLINE VILLAGE #5 AND THE 1 116 AGE #4 AND TIMBERLINE VILLAGE #5 AND THE 1 116 AGE #4 AND TIMBERLINE VILLAGE #5 AND THE 1 116

- RESERVATION CONTAINED IN PATENT FROM UNITED STATES OF AMERICA, RECORDED IN BOOK B OF PATENTS, PAGE 411 FOR TELEPHONE LINES AND ALL APURTENANCES CONSTRUCTED BY THE UNITED STATES, TROUGH, OVER OR UPON AND RIGHT OF ACCESS BY ITS OFFICERS, AGENTS AND EMPLOYEES TO MAINTAIN OPERATE, REPAIR OR IMPROVE BY THE UNITED STATES.
- CONDEMNATION BY THE STATE OF WASHINGTON OF RIGHT OF ACCESS TO STATE HIGHWAY AND OF LIGHT, VIEW AND AIR, BY DECREE ENTERED APRIL 23, 1969 UNDER CASE No. 29023 AND CASE No. 29124
- 10. COVENANTS, CONDITIONS AND RESTRICTIONS AS RECORDED UNDER AUDITOR'S FILE No. 856956.
- 11. EASEMENT AND CUL DE SAC AS SHOWN ON SEGREGATION SURVEY RECORDED DECEMBER 4, 1978, UNDER AUDITOR'S FILE No. 856014 VOL. 3 OF SURVEYS, PAGES 31 AND 31A.
- 12.AN EASEMENT FOR WATER LINE BOOSTER PUMP. RECORDED UNDER AUDITOR,S FILE No.
- 13.MINERAL RESERVATIONS UNDER AUDITOR'S No. 664312.
- 14.EASEMENT RIGHTS AS TO THAT EXISTING ROADWAY AS DISCLOSED BY FIRST AMERICAN TITLE INSURANCE COMPANY PHYSICAL INSPECTION.
- 15.AN EASEMENT FOR TELEPHONE WIRES AS RECORDED UNDER AUDITOR'S FILE No. 3049849.

CONSULTING ENGINEERS

FARWEST INDUSTRIES

BOB MITCHELL 1113 FIRCREST DRIVE TACOMA, WA 98466

(253) 272-0777

CIVIL ENGINEERING, DESIGN, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES



RONALD L. T.

SURVEYOR

1505

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF SURVEY RECORDING ACT AT THE REQUEST OF 3615 MICCHEL SURVEYOR'S CERTIFICATE

TEMIS COUNT NUDITOR "FILED FOR RECORD AT THE REQUEST OF RONALD TORRENCE, THIS TO DAY OF MAY 1992 AT THE MINIUTES PAST THE DO O'CLOCK & M. AND RECORDS OF LEWIS COUNTY, WASHINGTON" PLATS, AT PAGE A RECORDS OF LEWIS COUNTY, WASHINGTON" RECORDER'S CERMFICATE

3065876 B-8 P-29 05 07 1999 01:04P PG J 9 S PAROBUES OF SUBLICHET

ACKNOWLEDGEMENT

PORTION OF SECTION
WASHINGTON

COUNTY OF Pierce)

IN WITNESS WHEREOF, SAID CORPORATION HAS CAUSED THIS INSTRUMENT TO BE EXECUTED BY ITS PROPER OFFICERS THIS 17 DAY OF MAICH, 1994

THIS DAY AND YEAR FIRST ABOVE WRITTEN, BEFORE ME PERSONALLY APPEARED

TO BE KNOWN TO BE THE PERSONNER AND FOREGOING INSTANTONED CORPORATION THAT EXECUTED THE MITHIN AND FOREGOING INSTAND ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACKNOWLEDGED THAT HE/SHE WAS AUTHORIZED TO EXECUTE SAID INSTRUMENT. WITHIN AND FOREGOING INSTRUMENT, AND HE FREE AND VOLUNTARY ACT AND DEED OF JRPOSES THEREIN MENTIONED, AND ON OATH

WITNESS WHEREOF, I HAVE HEREON SET MY HAND AND OFFICIAL inde Dunce of WA



ACKNOWLEDGEMENT

COUNTY OF PIETCE

IN MINESS WHEREOF, SAID CORPORATION HAS CAUSED THIS INSTRUMENT TO BE EXECUTED BY ITS PROPER OFFICERS THIS 17 DAY OF March, 1998.

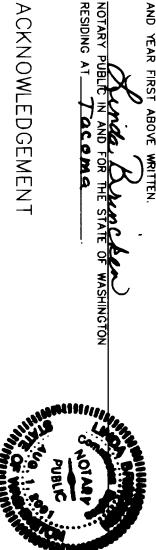
ON THIS DAY AND YEAR FIRST ABOVE WRITTEN, BEFORE ME PERSONALLY APPEARED

Robert J. Mitchell (Facines) (Montrales, Mc)

TO BE KNOWN TO BE THE President

OF THE CORPORATION THAT EXECUTED THE MITHIN AND FOREGOING INSTRUMENT, AND TO BE KNOWN TO BE THE PRESIDENT.

OF THE CORPORATION THAT EXECUTED THE MITHIN AND FOREGOING INSTRUMENT, AND ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACT AND DEED OF SAID CORPORATION, FOR THE USES AND PURPOSES THEREIN MENTIONED, AND ON OATH STATED THAT HE/SHE WAS AUTHORIZED TO EXECUTE SAID INSTRUMENT.



ACKNOWLEDGEMENT

STATE OF WASHINGTON

IN MITNESS WHEREOF, SAID CORPORATION HAS CAUSED THIS INSTRUMENT TO BE EXECUTED BY ITS PROPER OFFICERS THIS 17 DAY OF MCATCH., 1999

ON THIS DAY AND YEAR FIRST ABOVE WRITTEN, BEFORE ME PERSONALLY APPEARED

TOM W. ROW AND (ASSECUTE SAID CORPORATION THAT EXECUTED THE WITHIN AND FOREGOING INSTRUMENT, AND ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACT AND DEED OF SAID CORPORATION, FOR THE USES AND PURPOSES THEREIN MENTIONED, AND ON OATH STATED THAT HE/SHE WAS AUTHORIZED TO EXECUTE SAID INSTRUMENT.

I HAVE HEREON SET MY HAND AND OFFICIAL SEA

IN AND FOR THE STATE OF WASHINGTON

STATE OF WASHINGTON ACKNOWLEDGEMENT

IN MINESS WHEREOF, SAID CORPORATION HAS BY ITS PROPER OFFICERS THIS LL DAY OF L S CAUSED THIS INSTRUMENT TO BE EXECUTED

WITNESS MY HAND AND OFFICIAL SEAL.

PUBLIC IN AND FOR THE STATE OF WASHINGTON,

ON THIS DAY AND YEAR FIRST ABOVE WRITTEN, BEFORE WE PERSONALLY APPEARED

NOTARY PUBLIC IN AND FOR THE STATE OF V VASHINGTON

ACKNOWLEDGEMEN

COUNTY OF King STATE OF WASHINGTON

IN MITNESS WHEREOF, SAID CORPORATION HAS BY ITS PROPER OFFICERS THIS LE DAY OF ... MAICH , 1994

ON THIS DAY AND YEAR FIRST ABOVE WRITTEN, BEFORE ME PERSONALLY APPEARED

OF THE CORPORATION THAT EXECUTED THE WITHIN AND FOREGOING INSTRUMENT, AND ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACT-AND DEED OF SAID CORPORATION, FOR THE USES AND PURPOSES THEREIN MENTIONED, AND ON QATH STATED THAT HE/SHE WAS AUTHORIZED TO EXECUTE SAID INSTRUMENT. STORE BOWMAN (CERTIFIED FINANCIAL SERVICES IN TO BE KNOWN TO BE THE TOUNG INSTRUMENT, ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACT AND DEED ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACT AND DEED ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACT AND DEED ACKNOWLEDGED SAID INSTRUMENT TO BE THE FREE AND VOLUNTARY ACT.

THAND AND OFFICIAL SEAL THE DAY

COUNTY OF Pierce

ACKNOWLEDGMENT:

King

EXECUTED THE WITHIN AND FOREGOING INSTRUMENT, AND UMENT TO BE THE FREE AND VOLUNTARY ACT AND DEED OF IE USES AND PURPOSES THEREIN MENTIONED, AND ON OATH AUTHORIZED TO EXECUTE SAID INSTRUMENT.

IN WITNESS WHEREOF, I HAVE HEREON SET M. AND YEAR FIRST ABOVE WRITTEN.

HE President (Acies Goes Innerneys G)

Y HAND AND OFFICIAL SEAL THE DAY

DATE APPROVALS:
"EXAMINED FOR SURVEY DATUM, RIGHT OF WAY LAYOUT, AND DESIGN OF BRIDGES AND OTHER STRUCTURES REQUIRED BY A RESOLUTION OF APPROVAL AND APPROVED." Appeil 22, 1999 < COUNTY ENGINEER

"EXAMINED FOR ABILITY TO CONFORM TO LEWS COUNTY HEALTH DISTRICT REGULATIONS PERTAINING TO WATER SUPPLY AND SEWAGE DISPOSAL AND APPROVED.

DATE H OFFICIER, LEWS COUNTY HEALTH DISTRICT

"I CERTIFY THAT ALL TAXES AND FEMOUIENT ASSESSMENTS FOR WHICH THE PROPERTY MAY BE LIABLE AS OF THIS DATE HAVE BEEN PAID AND THAT DEPOSITS AS REQUIRED BY LAW AGAINST TAXES THAT MAY BECOME IN THE YEAR 1993. HAVE BEEN MADE."

DATE: MAX 35 1999 COUNTY TREASURER

DATE: 5/3/99 CHARRAN, BOARD OF LEWS COUNTY COMMISSIONERS

EXAMINED AND

APPROVED"

DATE April 26, 1999 "EXAMINED FOR CONFORMANCE TO THE CONDITIONS OF PRELIN AND APPROVED BY THE LEWIS COUNTY PLANNING COMMISSION PLANNING DIRECTOR

IN VOLUME *FILED FOR RECORD AT THE REQUEST OF OF PLATS, AT PAGE PAST____O'CLOCK ___M. AND RECORDED
, RECORDS OF LEWS COUNTY, WASHINGTON."

AUDITOR

LEWIS COUNTY AUDITOR

FARWEST INDUSTRIES

BOB MITCHELL 1113 FIRCREST DRIVE TACOMA, WA 98466 (253) 272-0777

DBM CONSULTING **ENGINEERS**

CIVIL ENGINEERING, DESIGN, LAND PLANNING SURVEYING, ENVIRONMENTAL SERVICES

SURVEYOR'S CERTIFICATE

men 19 78

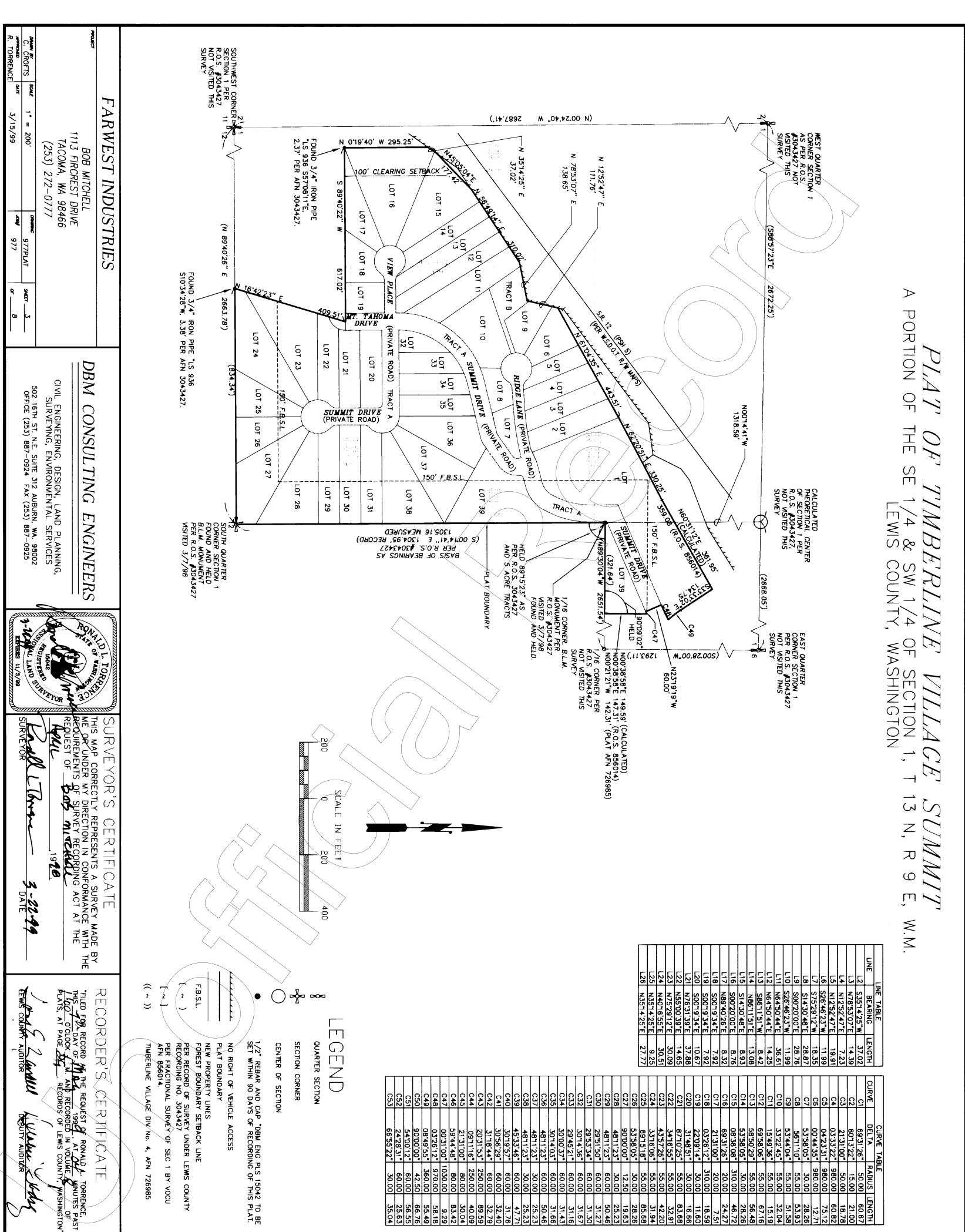
THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF SURVEY RECORDING ACT AT THE REQUEST OF BOOK MITCHELL

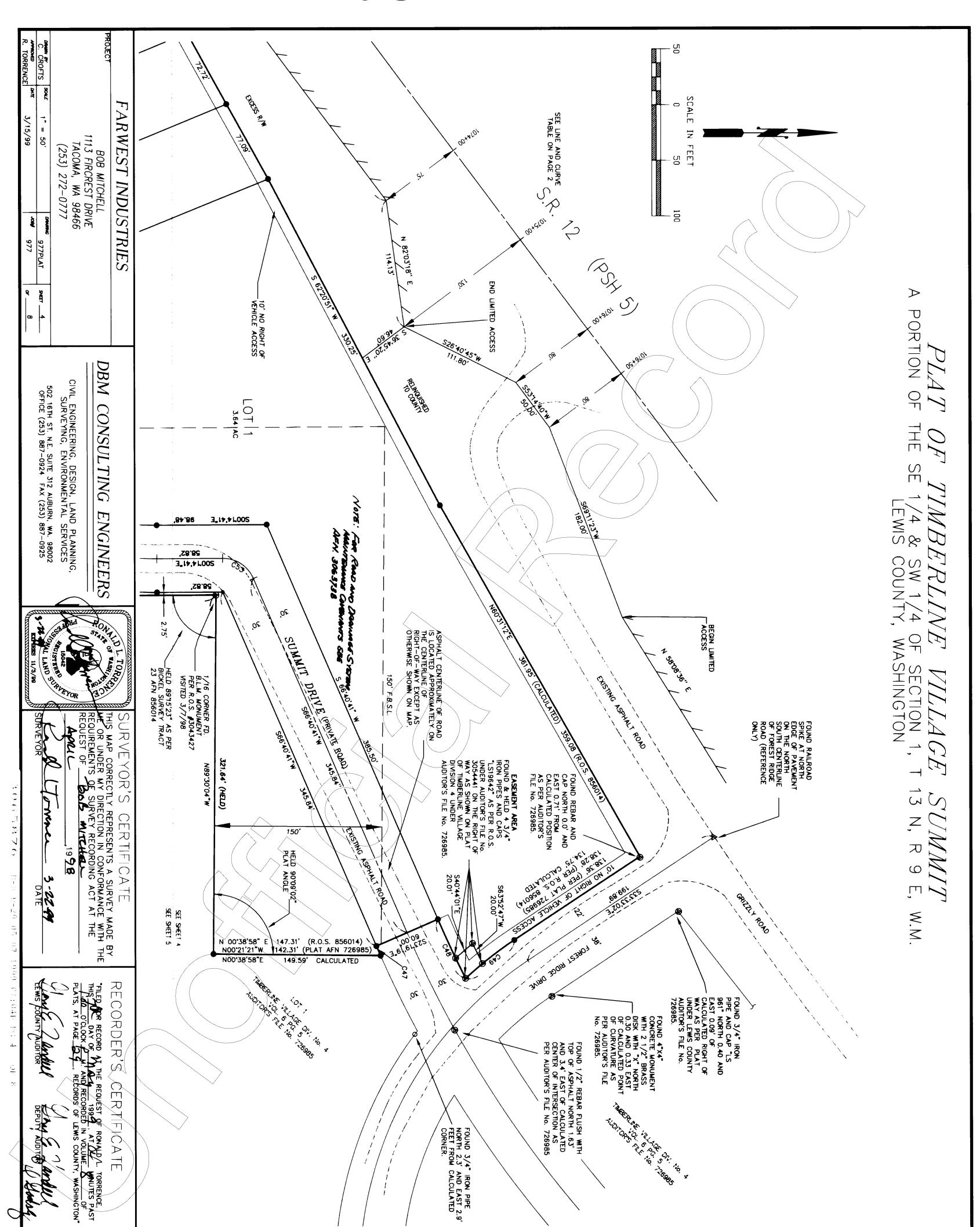
RECORDER'S CERTIFICATE

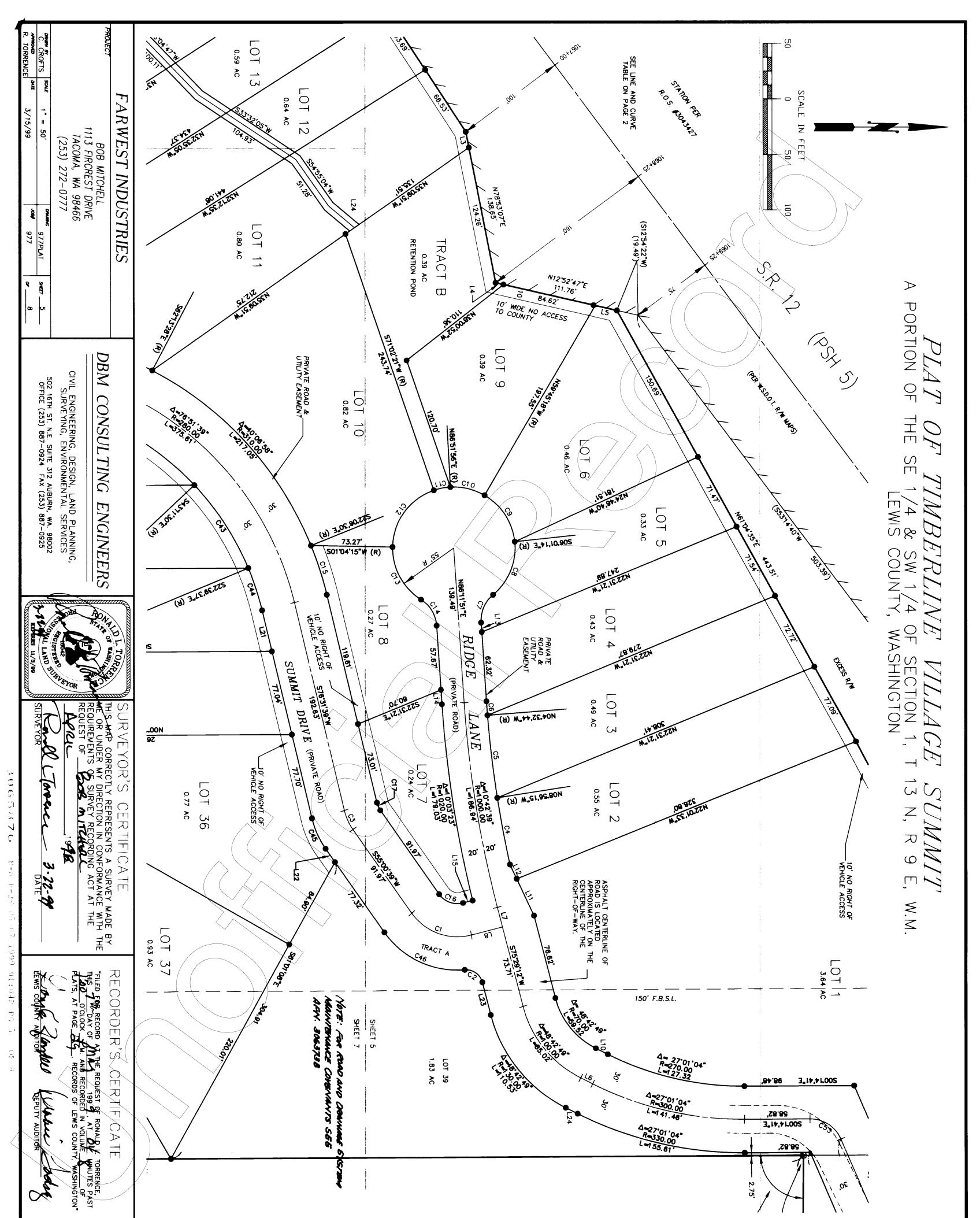
"FILED FOR RECORD AT THE REQUEST OF RONALD L. TORRENCE,
THIS 1 P. DAY OF MA 199 1. AT 04 MINUTES PAST
PLATS, AT PAGE 29 RECORDS OF LEWIS COUNTY, WASHINGTON"

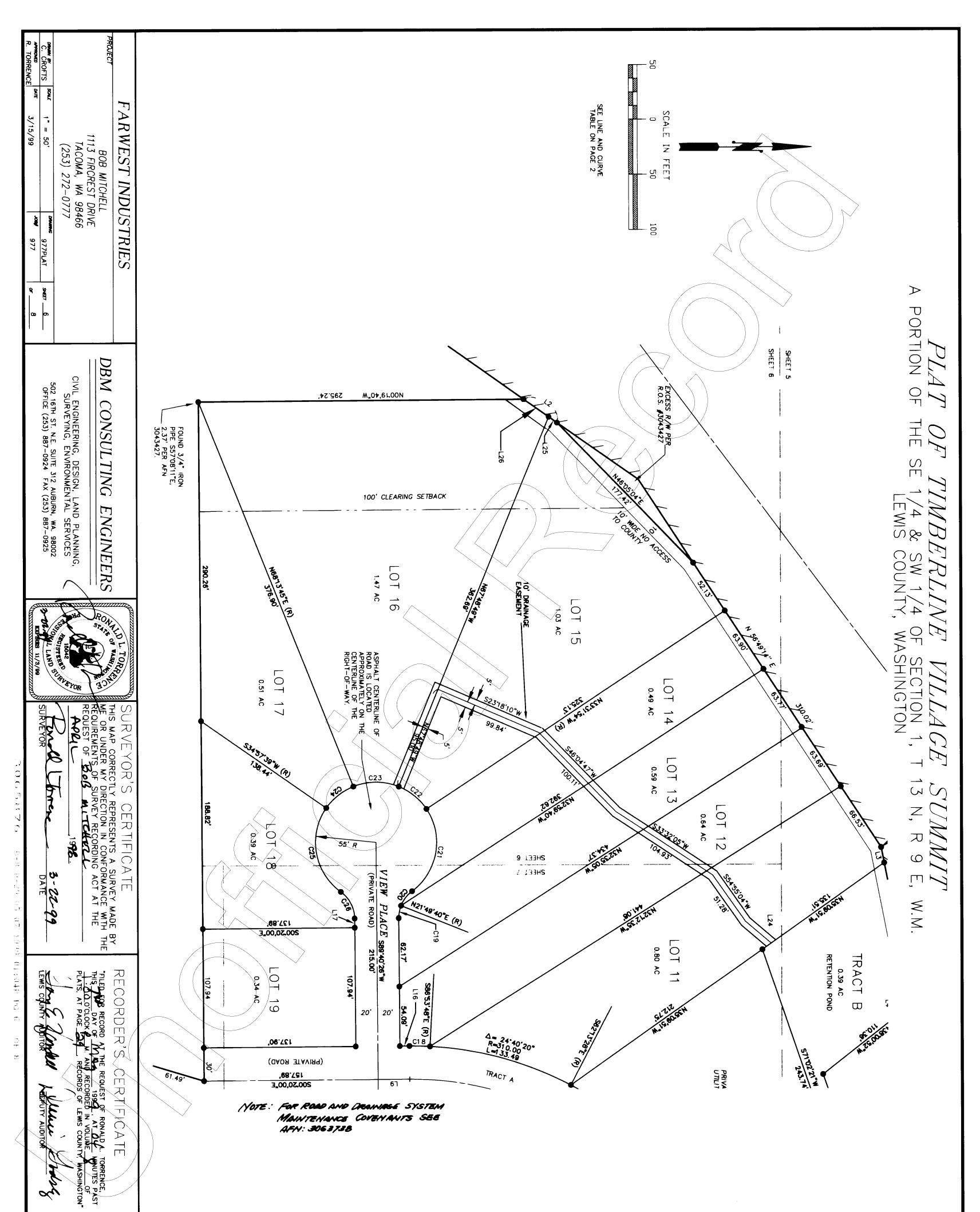
LEMS COUNTY AUDITOR DEPUTY AUDITOR

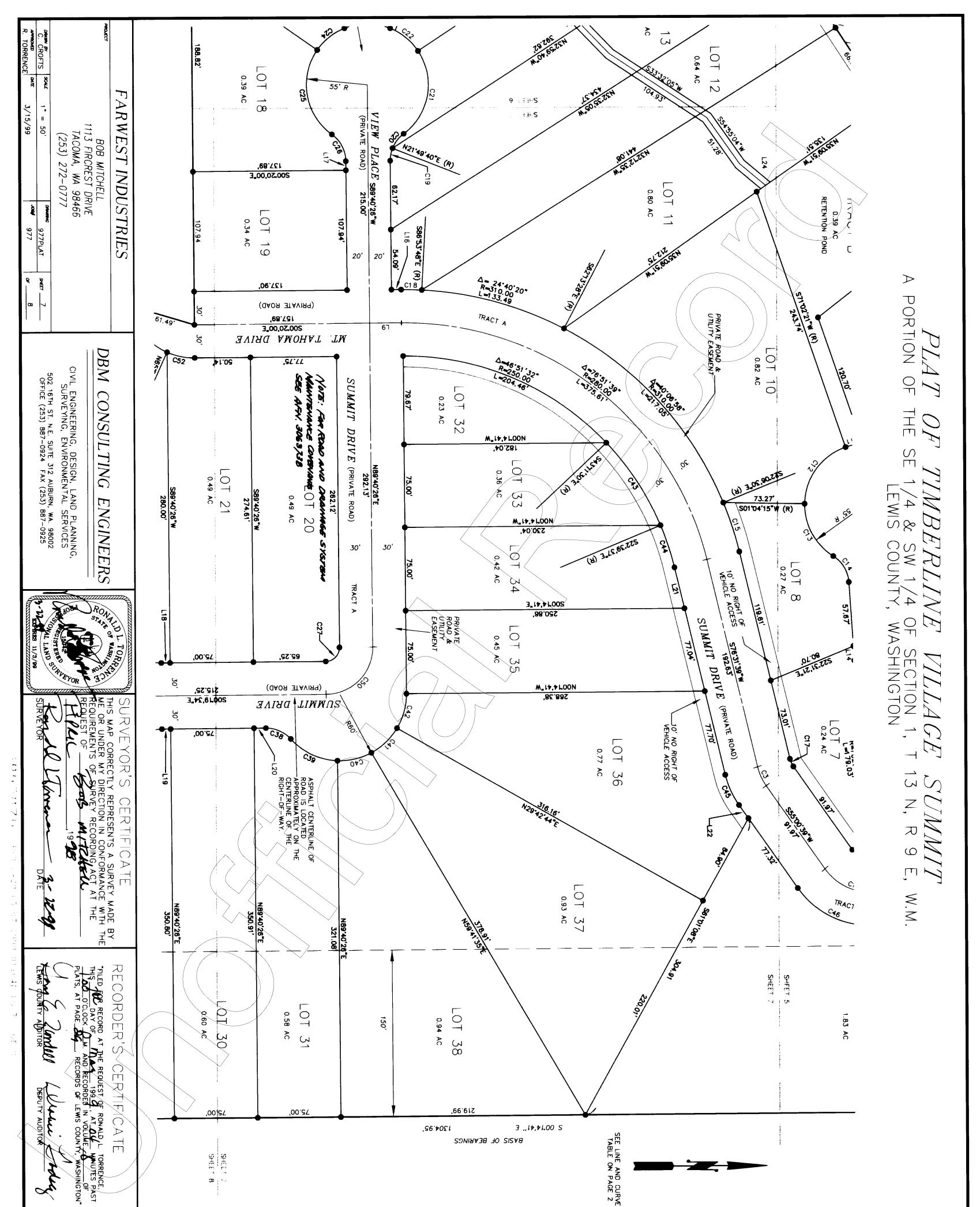
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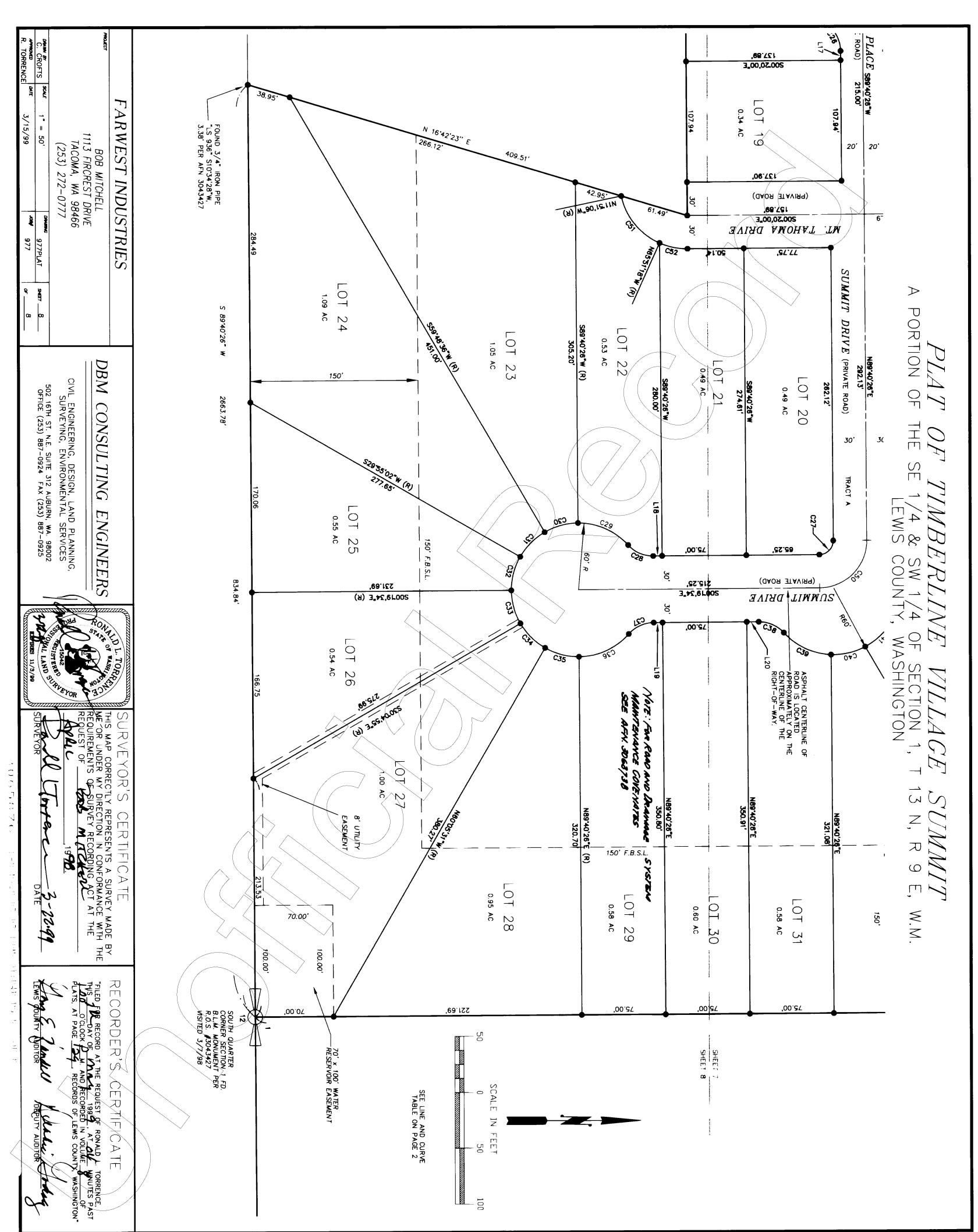


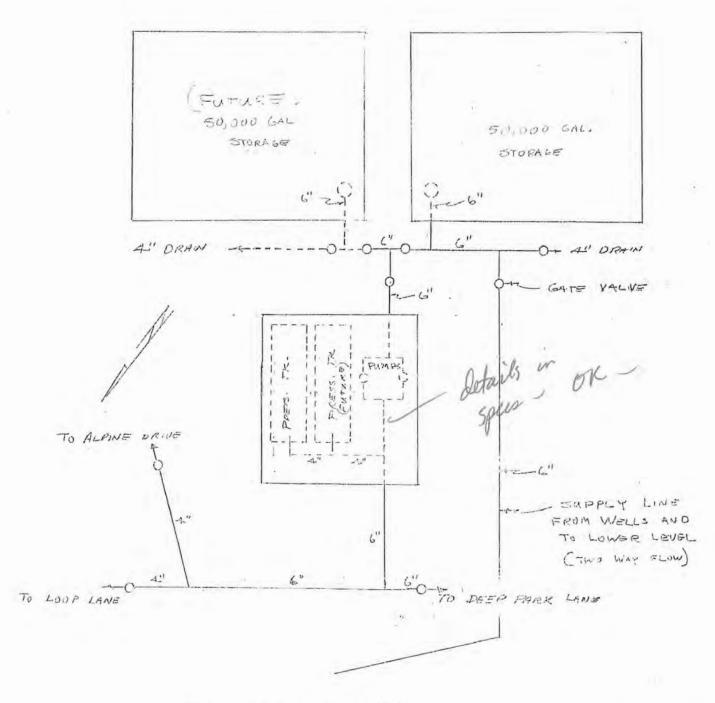










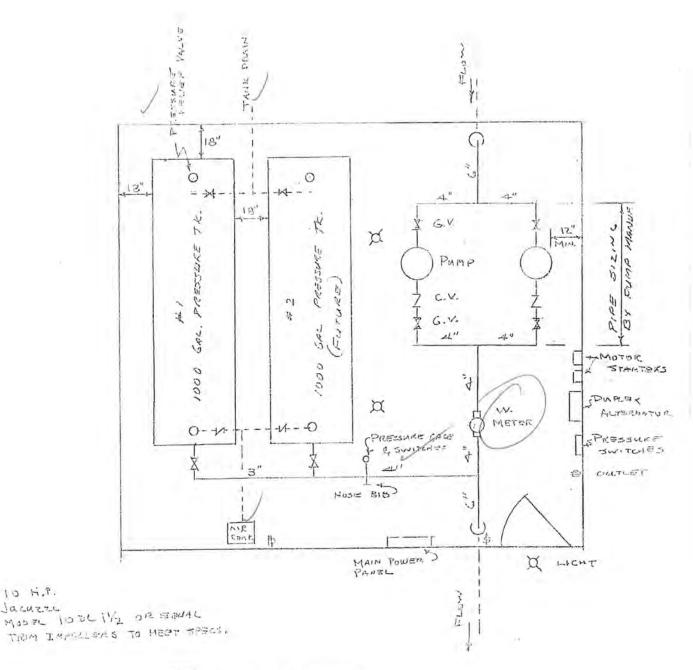


DIPING DIAGRAM,

No SCALE

FOR: TIMESPILING LINES

EY: ALAN L. SCHWISSON P.E.



PUMP LAYOUT BOOSTER STATION No SCALE

PUMPS-10 H.P.

Jacuzze

TIMBERLINE VILLAGE PACKWOOD, WA E 1315.

ALAN L. DOGWIDSON, PE BY :

Appendix 10.3 Distribution Map and Hydraulic Analysis

Doug Piehl

To: Lydia Bower

Subject: RE: Timberline Village #628, fire flow

From: Doyle Sanford < <u>Doyle.Sanford@lewiscountywa.gov</u>>

Sent: Thursday, October 13, 2022 2:55 PM

To: Lydia Bower < lydia@nwwatersystems.com

Subject: RE: Timberline Village #628, fire flow

Lydia,

Lewis County did not have a Building Department until 1974 or 75 so I do not know if Fire flow was considered at that time. We now have the option to use NFPA 1142 which allows Fire flow to be reduced in Rural areas without a reliable public water supply and allows for tanker credits from the Fire district if travel distances allow. Packwood is very condensed.

60,000 gal will provide 500gmp for 2 hours so you have plenty of fire flow, any New commercial buildings coming into your district will be required to provide their own storage for Fire flow and sized per occupancy and size.

Thank You.

Doyle Sanford, CFM Building Official / Fire Marshal Lewis County, WA (360)740-2696

Safety is no accident

From: Lydia Bower < lydia@nwwatersystems.com >

Sent: Tuesday, October 11, 2022 3:06 PM

To: Doyle Sanford < <u>Doyle.Sanford@lewiscountywa.gov</u>> **Subject:** [Spam?] Timberline Village #628, fire flow

Importance: Low

Hi Doyle,

I am working on the Water System Plan for the Timberline Village #628 water system (ID 88388) located in Packwood, WA. The water system currently has 2 wells which pump direct to distribution and fill 60,000 gallons of storage in the upper zone. The upper zone is pressurized by booster pumps.

Two pages from the original WSP (1975) are attached which state fire flow is not required. However, there is other documentation that lists 500 gpm for 30 minutes.

For the updated WSP, I need to know 1) was fire flow required at the time of approval for this water system and 2) if so, what was the requirement? I written response from the fire marshal is required for the WSP.

Lydia Bower, PE		
Northwest Water Syste	ems, Inc.	

Please contact me if you have any questions.

www.nwwatersystems.com

(360) 876-0958 ext. 108

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planning of water supply facilities shall include provisions for installation of these appurtenances where required.

Gate valves generally are installed at locations where segments of the pipeline should be isolated. Such locations include the major high points, which define the limits of pipe sections that can be drained by gravity and the extremities of pipe sections subject to special hazards, such as under water crossings or bridge crossings. Additionally, gate valves are installed at points where branches of pipe lines are joined. Slow closing valves are used to minimize the occurrence of water hammer.

<u>Check valves</u> are used to limit the flow of water to one direction only.

Slamming of check valves when the direction of flow is reversed may be minimized by devices which reduce the rate of closure of the valve.

Air relief valves are installed at high points in the pipe line. These valves automatically remove air from the line when the line is under pressure and admit air to the line when necessary to prevent creation of a vacuum.

Blowoff valves are installed at low points in the pipe line to permit drainage, either for repairs or removal of accumulated sediments. Normal discharge is to natural drainage channels.

Other appurtenances may include valves or other devices designed to control pressures and velocities in the line and to control the flow to storage reservoirs.

STORAGE RESERVOIRS

Stored water should be in sufficient quantity to supply demands in excess of the rate of replenishment, together with a reserve for fire fighting and allowing for interruption of supply. Reserves for fire fighting are established by the National Bureau of Fire Underwriters. The amount required for emergency use depends upon the danger of interruption of supply and the time needed for repairs. The total amount of storage actually provided is a function not only

of the above considerations but primarily of economic considerations as well. In this report the criteria used for storage reservoir is based on Standards for Design by DSHS p. 22-23, which do not include storage for fire flows.

Ground level storage tanks should be planned for depth limited to about 10 feet to minimize pressure variations. Covers must be provided for protection of the supply against contamination and deterioration.

CONFORMANCE WITH REGULATORY AGENCY REQUIREMENTS

Under the provision of RCW 43.20.050 the Rules and Regulations set forth in WAC 248.54.520 were adopted for the protection of all Public Water Systems. Under these provisions certain minimum requirements and standards for design, construction, operation and maintenance were established. This report is in conformance with such requirements published and Standards or by the Department of Social and Health Services, Health Services Division:

- 1. Rules and Regulations of the State Board of Health regarding Public Water Supplies, Chapter 248-54 WAC.
- 2. A guide for securing approval of Small Water Supplies.
- 3. Design Standards for Public Water Supplies.

22-141 50 SHEETS 22-142 100 SHEETS 22-144 200 SHEETS

Over division of the last

EXISTING SERVICES - 187 AUG 18 1993
20 ADD. SERVICES - 20
TOTAL 207

M10(207) = 228 GPMFIRE FLOW = 500 GPM $H_{L}(RESERVOIR) = H_{L}(3140-6") + H_{L}(210'-8")$ $H_{L} = K \cdot Q^{185}$ C = 140

 $= \frac{3140}{30.3} \left(\frac{728}{694}\right)^{1.85} + \left(\frac{210}{126.06}\right) \left(\frac{500}{694}\right)^{1.85}$ $+ \frac{11.3}{126.06} + \frac{113.9}{126.06} + \frac{113.9}{126.06}$

HAUAILABLE = Elev(RES) - Elev(SITE) - HL = 1375 - 1200 - 113.9 = = 61 ft = 26 psi

SOURCE REQUIRED = 207 UNITS X 800 gal/unit/day
= 115 gpm
SOURCE = 345 gpm 4 OK

STORAGE REQUIRED

FIRE STORAGE = 500 gpm x 30 min = 15,000 gallows E.S. = (MID-Q)150 = (228-345)(150) NONE REQUEED

AUG 1 8 1993

STANDY BY STORAGE

DOH-S.W. Drinking Water Operations

Minimum Standby Storage = 200 gal/con/day

STORAGE REQUIESO 41,400 gallons 60,000 gallors & OK STORAGE AVAILABE

> APPROVED DEPARTMENT OF HEALTH ENVIRONMENTAL HEALTH PROGRAMS SOUTHWEST DRINKING WATER OPERATIONS

200

Owwww and



Planning • Management • Engineering

P.O. Box 123 • Port Orchard, WA 98366 • 888-881-0958 • 360-876-0958 www.nwwatersystems.com

May 18, 2022

Doug Piehl, PE
Thurston PUD
doug.piehl@thurstonpud.org

Re: Timberline Village Water System, Hydraulic Analysis

Dear Doug Piehl,

A hydraulic analysis was completed using EPANet 2. Three scenarios were completed, full system build out, using the calculated PHD of 150 gpm from the capacity analysis, and adjusting system flow rate until the pressure dropped below 20 psi at a connection. The distribution system consists of 8-inch, 6-inch, 4-inch 3-inch, 2-inch, and 1.5-inch PVC . A coefficient of 130 was used as the friction coefficient. Pipe length, diameter, and layout were based upon the available system drawings with revisions from Thurston PUD staff who are familiar with the system layout.

A base demand was assigned to node representing service connections, and then scaled to provide the two scenarios.

The booster pump was modeled as a reservoir with additional head to represent pressure from the booster pump. The existing booster pump can provide 62 psi (143 feet) under PHD conditions and up to 70 psi (161.7 feet) under high pressure conditions. Similarly, the well pump was modeled as a reservoir with additional head to represent pressure from the well pump. The existing well pump operates at 70 psi based on floats in the upper reservoir. This reservoir "floats" on the system and does not have a dedicated inlet and outlet. There are several services which are connected on the fill line to the reservoir. The well pump was modeled at 62 psi (143 feet) under PHD conditions. Table 1 below lists the base elevation and corresponding modeled elevations for each source of supply component.

Table 1 – Modeled Elevations

Component	Base Elevation	Pressure	Modeled Elevation
Well Elevation	1186 feet	62 psi = 143 feet	1329 feet
Reservoir	1334	0 psi = 0 feet	1334 feet
Booster Station	1330	62 psi = 143 feet	1473 feet

The first scenario used a multiplier of 1.8 gpm/node. This was based on the results of the capacity analysis which calculated a system PHD of 150 gpm and ERU of 84, or 1.8 gpm/ERU. However, this multiplier was applied assuming build-out of the distribution system, or 376 ERU, not the existing 84 ERU. This assumed the PHD was distributed evenly throughout the distribution system. The results of this scenario are shown in Figure 1 below. There are several locations which the pressure dropped below 20 psi, and in some cases below 10 psi.

The second scenario calculated a multiplier of 0.4 gpm/node in order to achieve a flow rate of 150 gpm in the distribution system. It was assumed the PHD flow of 150 gpm was distributed evenly throughout the distribution system. In this scenario, there were 6 connections which had pressure under 30 psi. Per WAC 246-290-420(2), as an existing system the minimum residual pressure under PHD conditions must be greater than 20 psi. The results are shown in Figure 2 below

The third scenario adjusted the multiplier to 1.05 gpm/node which is the maximum flow in the distribution system while maintain each connection above 20 psi. This resulted in a total flow rate of 395 gpm spread throughout the distribution system. The results are shown in Figure 3 below.

The numerical results for all three scenarios are enclosed. Junction (node) 49 and 268 consistently show low pressures, however, these are not service connections. Junction 49 is just below the upper reservoir and Junction 268 is a blow off located above the highest elevation service connection.

The results demonstrate the existing distribution system is limited to a flow rate of 395 gpm.

Sincerely, NORTHWEST WATER SYSTEMS, INC.

Lydia Bower

Lydia Bower, PE

Cc: file\projects\191008



Figure 1 – Scenario 1: Multiplier of 1.8 gpm/node, full build-out

Scenario 1

Network Table - Nodes

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
Resvr BoosterStation	1473.2	-331.20	1473.20	0.00
Resvr Reservoirs	1334	-135.27	1334.00	0.00
Resvr Wells	1329	-212.14	1329.00	0.00
June 49	1330	0.00	1333.99	1.73
June 268	1410	1.80	1418.89	3.85
June 223	1406	1.80	1418.89	5.59
June 222	1406	3.60	1418.89	5.59
June 221	1400	3.60	1418.90	8.19
June 220	1400	3.60	1418.91	8.19
June 172	1403	3.60	1422.39	8.40
Junc 170	1401	3.60	1422.42	9.28
June 171	1400	3.60	1422.40	9.71
Junc 169	1394	3.60	1422.90	12.52
June 167	1394	3.60	1424.27	13.12
June 168	1392	3.60	1422.92	13.40
June 219	1388	3.60	1418.92	13.40
June 218	1388	3.60	1418.94	13.41
June 217	1380	3.60	1418.96	16.88
June 166	1384	3.60	1424.33	17.48
June 165	1380	3.60	1426.36	20.09
June 216	1371	3.60	1418.96	20.78
June 139	1277	0.00	1332.37	23.99
June 164	1366	3.60	1428.72	27.18
June 179	1362	3.60	1424.97	27.29
June 177	1361	3.60	1425.18	27.81
June 173	1364	3.60	1429.35	28.32

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 107	1204	7.20	1269.67	28.45
June 180	1359	3.60	1424.97	28.58
June 163	1364	0.00	1430.99	29.03
June 178	1358	1.80	1425.07	29.06
June 161	1368	3.60	1435.30	29.16
June 159	1368	3.60	1435.40	29.20
June 114	1221	3.60	1289.13	29.52
June 106	1202	3.60	1270.29	29.59
June 157	1372	0.00	1441.19	29.98
June 156	1372	0.00	1441.29	30.02
June 241	1366	3.60	1436.38	30.50
June 105	1200	3.60	1270.75	30.66
June 215	1348	3.60	1418.97	30.75
June 160	1364	3.60	1435.36	30.92
June 112	1218	3.60	1289.50	30.98
June 176	1354	3.60	1425.77	31.10
June 238	1364	0.00	1437.08	31.66
June 239	1364	3.60	1437.47	31.84
June 122	1256	0.00	1330.76	32.39
June 113	1214	3.60	1289.33	32.64
June 242	1360	1.80	1436.37	33.09
June 104	1197	3.60	1273.56	33.17
June 236	1350	3.60	1428.27	33.92
June 240	1358	3.60	1436.43	33.98
June 99	1212	3.60	1290.46	34.00
June 184	1340	3.60	1418.68	34.09
June 162	1356	3.60	1435.86	34.60

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 158	1356	0.00	1436.26	34.77
June 103	1195	3.60	1275.31	34.80
June 121	1248	3.60	1330.53	35.76
June 182	1340	3.60	1422.64	35.81
June 152	1346	3.60	1428.74	35.85
June 98	1208	1.80	1291.87	36.34
June 237	1349	3.60	1434.05	36.85
June 174	1342	3.60	1427.69	37.13
June 235	1340	3.60	1428.38	38.30
June 267	1352	1.80	1440.48	38.34
June 149	1350	1.80	1438.49	38.34
June 151	1341	3.60	1429.61	38.39
June 154	1338	3.60	1427.03	38.58
June 181	1336	3.60	1425.28	38.69
June 97	1205	3.60	1294.29	38.69
June 233	1342	0.00	1432.25	39.11
June 96	1204	0.00	1294.53	39.23
June 101	1194	3.60	1284.76	39.33
June 175	1336	0.00	1426.85	39.36
June 150	1343	3.60	1433.90	39.39
June 210	1328	0.00	1418.97	39.42
June 209	1328	0.00	1418.97	39.42
June 142	1324	3.60	1415.11	39.48
June 141	1324	3.60	1415.11	39.48
June 100	1199	3.60	1290.81	39.78
June 102	1190	0.00	1282.35	40.02
June 148	1348	1.80	1440.67	40.15

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
Junc 108	1189	3.60	1281.81	40.21
June 183	1328	3.60	1420.83	40.22
June 234	1334	3.60	1428.55	40.97
June 208	1324	3.60	1418.98	41.16
June 155	1332	3.60	1427.00	41.16
June 143	1320	0.00	1415.11	41.21
June 256	1320	3.60	1415.12	41.22
June 153	1330	3.60	1427.10	42.07
June 211	1321	3.60	1418.65	42.31
June 243	1332	3.60	1430.01	42.47
June 187	1314	3.60	1414.75	43.65
June 232	1329	0.00	1429.77	43.67
June 244	1328	3.60	1429.92	44.16
June 212	1316	3.60	1418.51	44.42
June 144	1312	3.60	1415.14	44.69
June 109	1176	3.60	1279.78	44.97
June 245	1326	3.60	1429.79	44.97
June 186	1312	3.60	1415.96	45.05
June 185	1310	3.60	1416.30	46.06
June 140	1308	0.00	1415.14	46.42
June 110	1172	3.60	1279.16	46.43
June 111	1171	3.60	1279.15	46.86
June 119	1221	0.00	1329.33	46.94
June 229	1320	0.00	1428.61	47.06
June 188	1302	3.60	1414.12	48.58
June 90	1206	1.80	1318.13	48.59
June 117	1216	0.00	1329.12	49.02

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 227	1312	3.60	1425.83	49.32
June 189	1300	3.60	1413.97	49.38
June 213	1304	3.60	1418.42	49.58
June 214	1304	1.80	1418.43	49.58
June 120	1214	1.80	1328.95	49.81
June 200	1214	0.00	1328.95	49.81
June 89	1202	3.60	1318.13	50.32
June 88	1202	3.60	1318.24	50.37
June 133	1294	3.60	1412.72	51.44
June 116	1210	0.00	1328.97	51.55
June 207	1300	3.60	1419.01	51.57
June 40	1206	3.60	1325.08	51.60
June 118	1210	1.80	1329.12	51.62
June 87	1198	3.60	1318.28	52.12
June 230	1306	3.60	1427.62	52.70
June 41	1204	3.60	1325.68	52.72
June 134	1292	0.00	1413.85	52.80
June 42	1204	3.60	1326.43	53.05
June 115	1206	1.80	1328.92	53.26
June 202	1296	0.00	1419.02	53.31
June 37	1200	3.60	1324.26	53.84
June 38	1200	1.80	1324.51	53.95
June 39	1200	0.00	1324.59	53.98
June 201	1294	1.80	1419.03	54.18
June 248	1204	0.00	1329.12	54.22
June 36	1199	3.60	1324.22	54.26
June 85	1194	3.60	1319.86	54.54

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 43	1202	3.60	1328.57	54.84
June 44	1202	3.60	1328.57	54.84
June 91	1192	3.60	1318.93	55.00
June 86	1192	0.00	1318.99	55.02
June 225	1296	3.60	1423.55	55.27
June 130	1286	1.80	1413.89	55.41
June 228	1298	3.60	1426.14	55.52
June 93	1190	1.80	1318.92	55.86
June 231	1298	3.60	1427.52	56.12
June 129	1284	0.00	1414.03	56.34
June 132	1281	3.60	1411.80	56.67
June 35	1193	3.60	1323.81	56.68
June 224	1290	3.60	1421.59	57.02
June 82	1190	3.60	1321.68	57.06
June 128	1282	1.80	1414.07	57.23
June 203	1286	1.80	1418.47	57.40
June 81	1188	1.80	1321.43	57.82
June 127	1280	1.80	1414.12	58.11
June 204	1284	3.60	1418.17	58.14
June 79	1186	1.80	1320.69	58.36
June 78	1186	7.20	1320.70	58.37
June 34	1189	3.60	1323.80	58.41
June 83	1187	0.00	1321.87	58.44
June 84	1187	3.60	1321.98	58.49
June 45	1193	3.60	1328.61	58.76
June 46	1192	3.60	1328.71	59.24
June 55	1186	3.60	1322.90	59.32

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 260	1277	0.00	1415.24	59.90
June 80	1183	3.60	1321.25	59.90
June 131	1275	3.60	1413.57	60.04
June 226	1285	3.60	1423.83	60.16
June 77	1181	0.00	1321.06	60.69
June 75	1181	1.80	1321.08	60.70
June 21	1183	3.60	1323.11	60.71
June 95	1183	0.00	1323.39	60.83
June 23	1183	1.80	1323.51	60.88
June 126	1273	3.60	1414.18	61.17
June 136	1270	3.60	1411.33	61.24
June 12	1173	3.60	1314.97	61.52
June 54	1181	3.60	1323.12	61.58
June 47	1186	3.60	1328.83	61.89
June 146	1330	0.00	1472.88	61.91
June 48	1186	0.00	1328.98	61.95
June 76	1186	0.00	1328.99	61.96
June 24	1180	3.60	1323.85	62.33
June 53	1180	3.60	1323.90	62.35
June 205	1274	3.60	1417.91	62.35
June 50	1184	1.80	1328.19	62.48
June 125	1270	1.80	1414.20	62.48
June 20	1178	3.60	1322.63	62.67
June 25	1180	3.60	1324.70	62.70
June 199	1274	1.80	1419.07	62.86
June 11	1168	3.60	1313.39	63.00
June 135	1268	3.60	1413.51	63.05

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 51	1183	1.80	1328.80	63.17
June 70	1174	1.80	1320.82	63.62
June 71	1174	0.00	1320.84	63.63
June 13	1171	3.60	1318.05	63.72
June 52	1177	3.60	1324.12	63.75
June 14	1172	1.80	1319.12	63.75
June 10	1164	3.60	1311.33	63.84
June 16	1174	3.60	1321.58	63.95
June 74	1172	10.80	1319.63	63.97
June 8	1161	3.60	1309.02	64.14
June 72	1172	3.60	1320.07	64.16
June 26	1177	3.60	1325.42	64.31
June 69	1172	3.60	1320.81	64.48
June 73	1171	1.80	1319.92	64.53
June 6	1159	3.60	1307.97	64.55
June 27	1178	3.60	1326.99	64.56
June 18	1172	3.60	1321.06	64.59
June 9	1161	3.60	1310.32	64.70
June 7	1159	3.60	1308.55	64.80
June 4	1158	3.60	1307.61	64.83
June 5	1158	3.60	1307.76	64.89
June 15	1172	3.60	1322.33	65.14
June 3	1157	3.60	1307.58	65.25
June 68	1170	3.60	1320.78	65.33
June 19	1170	1.80	1321.05	65.45
June 17	1170	3.60	1321.21	65.52
June 56	1172	3.60	1323.39	65.60

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 206	1266	3.60	1417.88	65.81
June 57	1170	3.60	1322.29	65.99
June 66	1168	1.80	1320.76	66.19
June 247	1172	0.00	1324.80	66.21
June 124	1261	3.60	1414.33	66.44
June 28	1174	3.60	1328.33	66.87
June 29	1174	0.00	1328.33	66.87
June 30	1173	3.60	1327.64	67.01
June 67	1166	3.60	1320.76	67.06
June 31	1172	3.60	1327.34	67.31
June 197	1264	3.60	1419.52	67.39
June 32	1171	3.60	1327.12	67.65
June 147	1164	3.60	1320.79	67.94
June 33	1169	3.60	1327.07	68.49
June 123	1256	0.00	1414.41	68.64
June 266	1168	1.80	1327.07	68.93
June 137	1250	3.60	1410.94	69.74
June 246	1146	0.00	1307.58	70.01
June 198	1256	3.60	1419.57	70.88
June 58	1154	3.60	1320.75	72.25
June 138	1244	3.60	1410.82	72.28
June 190	1250	0.00	1417.05	72.38
June 191	1250	1.80	1417.12	72.41
June 196	1252	3.60	1419.13	72.42
June 59	1150	3.60	1320.71	73.97
June 192	1246	0.00	1417.53	74.32
June 61	1148	3.60	1320.70	74.83

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 60	1148	3.60	1320.70	74.83
June 62	1146	3.60	1320.70	75.70
June 63	1146	3.60	1320.70	75.70
June 64	1145	0.00	1320.71	76.14
June 65	1145	1.80	1320.73	76.14
June 195	1238	3.60	1418.84	78.36
June 94	1136	1.80	1320.71	80.04
June 194	1232	0.00	1418.46	80.79

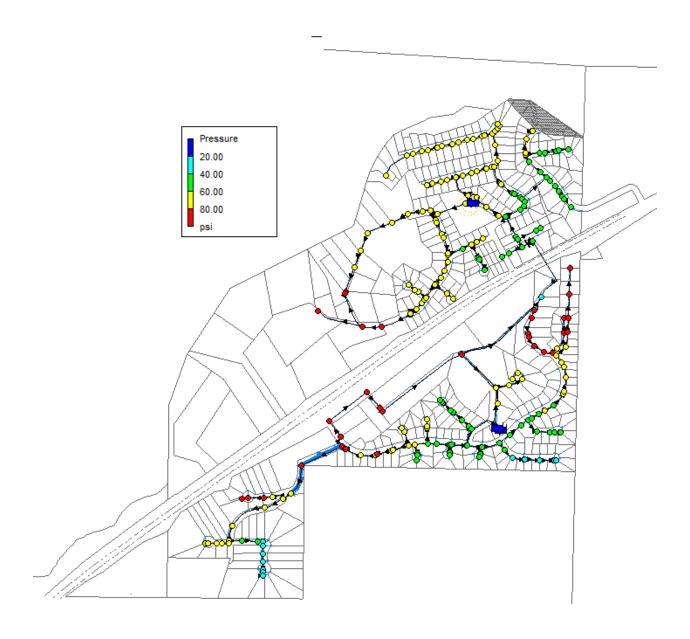


Figure 2 – Scenario 2: Multiplier of $0.4~\mathrm{gpm/node}$, $150~\mathrm{gpm}$ distributed evenly across all nodes

Scenario 2

Network Table - Nodes

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
Resvr BoosterStation	1473.2	-73.60	1473.20	0.00
Resvr Wells	1329	0.00	1329.00	0.00
Resvr Reservoirs	1334	-77.20	1334.00	0.00
June 49	1330	0.00	1334.00	1.73
June 139	1277	0.00	1333.42	24.45
June 268	1410	0.40	1469.85	25.93
June 223	1406	0.40	1469.85	27.67
June 222	1406	0.80	1469.85	27.67
June 172	1403	0.80	1470.07	29.06
Junc 170	1401	0.80	1470.07	29.93
June 221	1400	0.80	1469.85	30.27
June 220	1400	0.80	1469.85	30.27
June 171	1400	0.80	1470.07	30.36
June 169	1394	0.80	1470.10	32.97
June 167	1394	0.80	1470.18	33.01
June 122	1256	0.00	1332.85	33.30
June 168	1392	0.80	1470.10	33.84
June 219	1388	0.80	1469.85	35.47
June 218	1388	0.80	1469.85	35.47
June 121	1248	0.80	1332.77	36.73
June 166	1384	0.80	1470.19	37.34
June 217	1380	0.80	1469.85	38.93
June 165	1380	0.80	1470.31	39.13
June 216	1371	0.80	1469.85	42.83
June 157	1372	0.00	1471.22	42.99
June 156	1372	0.00	1471.23	43.00

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 161	1368	0.80	1470.86	44.57
June 159	1368	0.80	1470.87	44.57
June 164	1366	0.80	1470.46	45.26
June 241	1366	0.80	1470.93	45.47
June 173	1364	0.80	1470.49	46.14
June 163	1364	0.00	1470.60	46.19
June 160	1364	0.80	1470.87	46.30
June 238	1364	0.00	1470.97	46.35
June 239	1364	0.80	1471.00	46.36
June 179	1362	0.80	1470.22	46.89
June 114	1221	0.80	1329.52	47.02
June 177	1361	0.80	1470.24	47.33
June 242	1360	0.40	1470.93	48.07
June 180	1359	0.80	1470.22	48.19
June 119	1221	0.00	1332.34	48.24
June 112	1218	0.80	1329.54	48.33
June 178	1358	0.40	1470.23	48.63
June 240	1358	0.80	1470.93	48.93
June 162	1356	0.80	1470.90	49.78
June 158	1356	0.00	1470.92	49.80
June 113	1214	0.80	1329.53	50.06
June 117	1216	0.00	1332.26	50.37
June 176	1354	0.80	1470.27	50.38
June 99	1212	0.80	1329.60	50.96
June 120	1214	0.40	1332.20	51.22
Junc 200	1214	0.00	1332.20	51.22
June 267	1352	0.40	1471.18	51.64

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 236	1350	0.80	1470.43	52.18
June 149	1350	0.40	1471.06	52.45
June 98	1208	0.40	1329.68	52.73
June 237	1349	0.80	1470.78	52.77
June 215	1348	0.80	1469.85	52.80
June 116	1210	0.00	1332.20	52.95
June 118	1210	0.40	1332.26	52.97
June 148	1348	0.40	1471.19	53.38
June 107	1204	1.60	1328.32	53.87
June 152	1346	0.80	1470.46	53.93
June 97	1205	0.80	1329.83	54.09
June 90	1206	0.40	1330.84	54.09
June 40	1206	0.80	1331.75	54.49
June 96	1204	0.00	1329.85	54.53
June 115	1206	0.40	1332.18	54.68
June 106	1202	0.80	1328.35	54.75
June 150	1343	0.80	1470.78	55.37
June 41	1204	0.80	1331.80	55.38
June 42	1204	0.80	1331.86	55.40
June 248	1204	0.00	1332.26	55.57
June 105	1200	0.80	1328.38	55.63
June 174	1342	0.80	1470.39	55.63
June 233	1342	0.00	1470.67	55.75
June 89	1202	0.80	1330.84	55.82
June 88	1202	0.80	1330.84	55.83
June 151	1341	0.80	1470.51	56.12
June 184	1340	0.80	1469.84	56.26

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 44	1202	0.80	1332.04	56.35
June 43	1202	0.80	1332.05	56.35
June 182	1340	0.80	1470.08	56.36
June 235	1340	0.80	1470.44	56.52
June 100	1199	0.80	1329.62	56.60
June 104	1197	0.80	1328.56	57.00
June 37	1200	0.80	1331.66	57.05
June 38	1200	0.40	1331.69	57.06
June 39	1200	0.00	1331.70	57.07
June 154	1338	0.80	1470.35	57.35
June 36	1199	0.80	1331.66	57.48
June 87	1198	0.80	1330.84	57.56
June 103	1195	0.80	1328.66	57.92
June 181	1336	0.80	1470.24	58.17
June 175	1336	0.00	1470.34	58.21
June 101	1194	0.80	1329.25	58.60
June 234	1334	0.80	1470.45	59.12
June 85	1194	0.80	1330.94	59.34
June 155	1332	0.80	1470.35	59.95
June 243	1332	0.80	1470.54	60.03
June 35	1193	0.80	1331.61	60.06
June 91	1192	0.80	1330.88	60.18
June 86	1192	0.00	1330.89	60.18
June 45	1193	0.80	1331.95	60.21
June 102	1190	0.00	1329.10	60.27
June 46	1192	0.80	1331.80	60.57
June 108	1189	0.80	1329.06	60.69

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 153	1330	0.80	1470.36	60.82
June 93	1190	0.40	1330.88	61.05
June 82	1190	0.80	1331.05	61.12
June 232	1329	0.00	1470.52	61.32
June 210	1328	0.00	1469.85	61.47
June 209	1328	0.00	1469.85	61.47
June 183	1328	0.80	1469.97	61.52
June 244	1328	0.80	1470.53	61.76
June 34	1189	0.80	1331.61	61.79
June 81	1188	0.40	1331.04	61.98
June 146	1330	0.00	1473.18	62.04
June 83	1187	0.00	1331.07	62.42
June 84	1187	0.80	1331.07	62.43
June 245	1326	0.80	1470.52	62.62
June 79	1186	0.40	1330.99	62.83
June 78	1186	1.60	1330.99	62.83
June 55	1186	0.80	1331.13	62.88
June 76	1186	0.00	1331.50	63.05
June 48	1186	0.00	1331.50	63.05
June 142	1324	0.80	1469.62	63.10
June 141	1324	0.80	1469.62	63.10
June 47	1186	0.80	1331.65	63.11
June 208	1324	0.80	1469.85	63.20
June 50	1184	0.40	1331.46	63.89
June 80	1183	0.80	1331.03	64.14
June 51	1183	0.40	1331.50	64.35
June 21	1183	0.80	1331.53	64.36

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 23	1183	0.40	1331.54	64.36
June 95	1183	0.00	1331.55	64.37
June 211	1321	0.80	1469.83	64.49
June 143	1320	0.00	1469.62	64.83
June 256	1320	0.80	1469.62	64.83
June 77	1181	0.00	1331.02	65.00
June 75	1181	0.40	1331.02	65.00
June 54	1181	0.80	1331.14	65.06
June 229	1320	0.00	1470.45	65.19
June 53	1180	0.80	1331.19	65.51
June 25	1180	0.80	1331.50	65.65
June 24	1180	0.80	1331.52	65.65
Junc 109	1176	0.80	1328.94	66.27
June 27	1178	0.80	1331.50	66.51
June 20	1178	0.80	1331.50	66.51
June 212	1316	0.80	1469.83	66.65
June 52	1177	0.80	1331.20	66.82
June 26	1177	0.80	1331.50	66.94
June 187	1314	0.80	1469.59	67.42
June 110	1172	0.80	1328.90	67.98
June 70	1174	0.40	1331.00	68.03
June 71	1174	0.00	1331.00	68.03
June 16	1174	0.80	1331.44	68.22
June 28	1174	0.80	1331.50	68.24
June 29	1174	0.00	1331.50	68.24
June 144	1312	0.80	1469.62	68.30
June 186	1312	0.80	1469.67	68.32

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 111	1171	0.80	1328.90	68.42
June 12	1173	0.80	1331.03	68.47
June 227	1312	0.80	1470.28	68.58
June 30	1173	0.80	1331.45	68.66
June 74	1172	2.40	1330.93	68.86
June 72	1172	0.80	1330.95	68.88
June 69	1172	0.80	1331.00	68.89
June 56	1172	0.80	1331.16	68.96
June 247	1172	0.00	1331.25	69.00
June 14	1172	0.40	1331.29	69.02
June 18	1172	0.80	1331.41	69.07
June 31	1172	0.80	1331.43	69.08
June 15	1172	0.80	1331.49	69.11
June 185	1310	0.80	1469.69	69.19
June 73	1171	0.40	1330.95	69.30
June 13	1171	0.80	1331.22	69.42
June 32	1171	0.80	1331.42	69.51
June 68	1170	0.80	1331.00	69.76
June 57	1170	0.80	1331.09	69.80
June 19	1170	0.40	1331.41	69.94
June 17	1170	0.80	1331.42	69.94
June 140	1308	0.00	1469.62	70.03
June 33	1169	0.80	1331.42	70.38
June 11	1168	0.80	1330.93	70.60
June 66	1168	0.40	1331.00	70.63
June 266	1168	0.40	1331.42	70.81
June 230	1306	0.80	1470.39	71.23

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 67	1166	0.80	1331.00	71.49
June 213	1304	0.80	1469.82	71.85
June 214	1304	0.40	1469.82	71.85
June 10	1164	0.80	1330.81	72.28
June 147	1164	0.80	1331.00	72.36
June 188	1302	0.80	1469.56	72.60
June 189	1300	0.80	1469.55	73.46
June 8	1161	0.80	1330.66	73.52
June 9	1161	0.80	1330.74	73.55
June 207	1300	0.80	1469.86	73.60
June 6	1159	0.80	1330.60	74.35
June 7	1159	0.80	1330.63	74.37
June 228	1298	0.80	1470.30	74.66
June 231	1298	0.80	1470.38	74.69
June 4	1158	0.80	1330.58	74.78
June 5	1158	0.80	1330.59	74.78
June 3	1157	0.80	1330.58	75.21
June 202	1296	0.00	1469.86	75.33
June 225	1296	0.80	1470.14	75.45
June 133	1294	0.80	1469.47	76.03
June 201	1294	0.40	1469.86	76.20
June 58	1154	0.80	1331.00	76.69
June 134	1292	0.00	1469.54	76.93
June 224	1290	0.80	1470.02	78.00
June 59	1150	0.80	1330.99	78.42
June 61	1148	0.80	1330.99	79.29
June 60	1148	0.80	1330.99	79.29

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 130	1286	0.40	1469.54	79.53
June 203	1286	0.40	1469.82	79.65
June 246	1146	0.00	1330.58	79.98
June 63	1146	0.80	1330.99	80.16
June 62	1146	0.80	1330.99	80.16
June 226	1285	0.80	1470.15	80.23
June 129	1284	0.00	1469.55	80.40
June 204	1284	0.80	1469.80	80.51
June 64	1145	0.00	1330.99	80.59
June 65	1145	0.40	1331.00	80.59
June 128	1282	0.40	1469.55	81.27
June 132	1281	0.80	1469.41	81.64
June 127	1280	0.40	1469.56	82.13
June 260	1277	0.00	1469.62	83.46
June 131	1275	0.80	1469.52	84.29
June 94	1136	0.40	1330.99	84.49
June 205	1274	0.80	1469.79	84.84
Junc 199	1274	0.40	1469.86	84.87
June 126	1273	0.80	1469.56	85.17
June 136	1270	0.80	1469.38	86.39
June 125	1270	0.40	1469.56	86.47
June 135	1268	0.80	1469.52	87.32
June 206	1266	0.80	1469.79	88.30
June 197	1264	0.80	1469.89	89.21
June 124	1261	0.80	1469.57	90.37
June 123	1256	0.00	1469.57	92.54
June 198	1256	0.80	1469.89	92.68

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 196	1252	0.80	1469.86	94.40
June 137	1250	0.80	1469.36	95.05
June 190	1250	0.00	1469.74	95.21
June 191	1250	0.40	1469.74	95.21
June 192	1246	0.00	1469.77	96.96
June 138	1244	0.80	1469.35	97.64
June 195	1238	0.80	1469.85	100.46
June 194	1232	0.00	1469.82	103.05



Figure 3 – Scenario 3: Multiplier 1.05 gpm/node, pressure at all connections >20 psi

Scenario 3

Network Table - Nodes

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
Resvr BoosterStation	1473.2	-193.20	1473.20	0.00
Resvr Reservoirs	1334	-124.01	1334.00	0.00
Resvr Wells	1329	-78.64	1329.00	0.00
June 49	1330	0.00	1333.99	1.73
June 268	1410	1.05	1453.19	18.71
June 223	1406	1.05	1453.19	20.45
June 222	1406	2.10	1453.19	20.45
June 172	1403	2.10	1454.48	22.30
June 221	1400	2.10	1453.19	23.05
June 220	1400	2.10	1453.19	23.05
Junc 170	1401	2.10	1454.48	23.17
June 171	1400	2.10	1454.48	23.61
June 139	1277	0.00	1332.61	24.10
Junc 169	1394	2.10	1454.66	26.29
June 167	1394	2.10	1455.17	26.50
June 168	1392	2.10	1454.67	27.15
June 219	1388	2.10	1453.20	28.25
June 218	1388	2.10	1453.20	28.25
June 166	1384	2.10	1455.19	30.85
June 217	1380	2.10	1453.21	31.72
June 122	1256	0.00	1331.24	32.60
June 165	1380	2.10	1455.94	32.90
June 216	1371	2.10	1453.21	35.62
June 121	1248	2.10	1331.04	35.98
June 157	1372	0.00	1461.40	38.74
June 156	1372	0.00	1461.44	38.75

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 164	1366	2.10	1456.81	39.35
June 161	1368	2.10	1459.23	39.53
June 159	1368	2.10	1459.27	39.55
June 173	1364	2.10	1457.04	40.31
June 179	1362	2.10	1455.43	40.48
June 241	1366	2.10	1459.63	40.57
June 163	1364	0.00	1457.64	40.58
June 114	1221	2.10	1314.75	40.62
June 177	1361	2.10	1455.50	40.95
June 160	1364	2.10	1459.25	41.27
June 238	1364	0.00	1459.89	41.55
June 239	1364	2.10	1460.03	41.61
June 180	1359	2.10	1455.43	41.78
June 112	1218	2.10	1314.89	41.98
June 178	1358	1.05	1455.46	42.23
June 242	1360	1.05	1459.63	43.17
June 113	1214	2.10	1314.82	43.69
June 240	1358	2.10	1459.65	44.04
June 176	1354	2.10	1455.72	44.07
June 99	1212	2.10	1315.24	44.73
June 162	1356	2.10	1459.44	44.82
June 107	1204	4.20	1307.58	44.88
June 158	1356	0.00	1459.58	44.88
June 215	1348	2.10	1453.21	45.59
June 106	1202	2.10	1307.81	45.85
June 236	1350	2.10	1456.64	46.21
June 98	1208	1.05	1315.76	46.69

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 105	1200	2.10	1307.98	46.79
June 119	1221	0.00	1330.01	47.23
June 267	1352	1.05	1461.14	47.29
June 237	1349	2.10	1458.77	47.56
June 149	1350	1.05	1460.41	47.84
June 152	1346	2.10	1456.81	48.02
June 97	1205	2.10	1316.65	48.38
June 104	1197	2.10	1309.01	48.53
June 96	1204	0.00	1316.74	48.85
June 184	1340	2.10	1453.11	49.01
June 148	1348	1.05	1461.21	49.05
June 117	1216	0.00	1329.82	49.32
June 174	1342	2.10	1456.43	49.58
June 182	1340	2.10	1454.56	49.64
June 103	1195	2.10	1309.66	49.68
June 200	1214	0.00	1329.69	50.13
June 120	1214	1.05	1329.69	50.13
June 150	1343	2.10	1458.72	50.14
June 233	1342	0.00	1458.11	50.31
June 151	1341	2.10	1457.13	50.32
June 100	1199	2.10	1315.37	50.42
June 235	1340	2.10	1456.68	50.56
June 154	1338	2.10	1456.18	51.21
June 90	1206	1.05	1325.00	51.56
June 101	1194	2.10	1313.14	51.62
June 181	1336	2.10	1455.54	51.80
June 116	1210	0.00	1329.70	51.86

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 118	1210	1.05	1329.82	51.92
June 175	1336	0.00	1456.12	52.05
June 40	1206	2.10	1328.01	52.87
June 102	1190	0.00	1312.25	52.97
June 234	1334	2.10	1456.74	53.18
June 89	1202	2.10	1325.00	53.30
June 88	1202	2.10	1325.04	53.31
June 108	1189	2.10	1312.05	53.32
June 115	1206	1.05	1329.65	53.58
June 155	1332	2.10	1456.17	53.80
June 41	1204	2.10	1328.23	53.83
June 42	1204	2.10	1328.52	53.95
June 209	1328	0.00	1453.21	54.26
June 210	1328	0.00	1453.21	54.26
June 243	1332	2.10	1457.28	54.29
June 248	1204	0.00	1329.82	54.52
June 183	1328	2.10	1453.90	54.55
June 153	1330	2.10	1456.21	54.69
June 87	1198	2.10	1325.05	55.05
June 44	1202	2.10	1329.33	55.17
June 43	1202	2.10	1329.34	55.17
June 37	1200	2.10	1327.69	55.33
June 38	1200	1.05	1327.78	55.37
June 142	1324	2.10	1451.79	55.37
June 141	1324	2.10	1451.79	55.37
June 39	1200	0.00	1327.82	55.38
June 232	1329	0.00	1457.20	55.55

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 36	1199	2.10	1327.67	55.75
June 208	1324	2.10	1453.22	55.99
June 244	1328	2.10	1457.25	56.00
June 245	1326	2.10	1457.20	56.85
June 85	1194	2.10	1325.64	57.04
June 143	1320	0.00	1451.79	57.11
June 256	1320	2.10	1451.80	57.11
June 211	1321	2.10	1453.10	57.24
June 91	1192	2.10	1325.30	57.76
June 86	1192	0.00	1325.31	57.77
June 35	1193	2.10	1327.51	58.28
June 93	1190	1.05	1325.29	58.62
June 109	1176	2.10	1311.30	58.63
June 45	1193	2.10	1329.27	59.04
June 82	1190	2.10	1326.31	59.06
June 229	1320	0.00	1456.77	59.26
June 212	1316	2.10	1453.04	59.38
June 46	1192	2.10	1329.16	59.43
June 187	1314	2.10	1451.66	59.65
June 81	1188	1.05	1326.22	59.89
June 34	1189	2.10	1327.50	60.01
June 110	1172	2.10	1311.07	60.26
June 83	1187	0.00	1326.38	60.39
June 84	1187	2.10	1326.42	60.41
June 144	1312	2.10	1451.80	60.58
June 79	1186	1.05	1325.94	60.64
June 78	1186	4.20	1325.95	60.64

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 111	1171	2.10	1311.07	60.69
June 186	1312	2.10	1452.10	60.71
June 55	1186	2.10	1326.76	60.99
June 185	1310	2.10	1452.23	61.63
June 48	1186	0.00	1329.00	61.96
June 76	1186	0.00	1329.00	61.96
June 47	1186	2.10	1329.07	61.99
June 146	1330	0.00	1473.08	62.00
June 80	1183	2.10	1326.15	62.03
June 227	1312	2.10	1455.74	62.28
June 140	1308	0.00	1451.80	62.31
June 21	1183	2.10	1327.23	62.50
June 95	1183	0.00	1327.34	62.54
June 23	1183	1.05	1327.37	62.55
June 50	1184	1.05	1328.71	62.70
June 77	1181	0.00	1326.08	62.86
June 75	1181	1.05	1326.09	62.87
June 54	1181	2.10	1326.84	63.19
June 51	1183	1.05	1328.94	63.23
June 53	1180	2.10	1327.13	63.75
June 24	1180	2.10	1327.45	63.89
June 25	1180	2.10	1327.69	63.99
June 213	1304	2.10	1453.01	64.57
June 214	1304	1.05	1453.01	64.57
June 20	1178	2.10	1327.06	64.59
June 188	1302	2.10	1451.43	64.75
June 52	1177	2.10	1327.21	65.08

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 27	1178	2.10	1328.37	65.15
June 230	1306	2.10	1456.40	65.17
June 26	1177	2.10	1327.90	65.38
June 12	1173	2.10	1324.24	65.53
June 189	1300	2.10	1451.37	65.59
June 70	1174	1.05	1325.99	65.86
June 71	1174	0.00	1326.00	65.86
June 16	1174	2.10	1326.67	66.15
June 207	1300	2.10	1453.23	66.39
June 74	1172	6.30	1325.55	66.53
June 72	1172	2.10	1325.71	66.60
June 14	1172	1.05	1325.77	66.63
June 69	1172	2.10	1325.99	66.72
June 13	1171	2.10	1325.37	66.89
June 18	1172	2.10	1326.48	66.94
June 73	1171	1.05	1325.66	67.01
June 28	1174	2.10	1328.78	67.07
June 29	1174	0.00	1328.78	67.07
June 56	1172	2.10	1326.94	67.13
June 15	1172	2.10	1326.95	67.14
June 247	1172	0.00	1327.46	67.36
June 30	1173	2.10	1328.53	67.39
June 11	1168	2.10	1323.65	67.44
June 68	1170	2.10	1325.97	67.58
June 31	1172	2.10	1328.42	67.77
June 19	1170	1.05	1326.48	67.80
June 57	1170	2.10	1326.53	67.82

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 17	1170	2.10	1326.53	67.83
June 133	1294	2.10	1450.91	67.99
June 202	1296	0.00	1453.23	68.13
June 32	1171	2.10	1328.33	68.17
June 228	1298	2.10	1455.86	68.40
June 66	1168	1.05	1325.97	68.45
June 231	1298	2.10	1456.37	68.62
June 10	1164	2.10	1322.89	68.85
June 225	1296	2.10	1454.90	68.85
June 201	1294	1.05	1453.24	69.00
June 33	1169	2.10	1328.32	69.03
June 134	1292	0.00	1451.33	69.04
June 67	1166	2.10	1325.97	69.31
June 266	1168	1.05	1328.32	69.47
June 8	1161	2.10	1322.04	69.78
June 9	1161	2.10	1322.52	69.99
June 147	1164	2.10	1325.98	70.19
June 6	1159	2.10	1321.66	70.48
June 7	1159	2.10	1321.87	70.57
June 4	1158	2.10	1321.52	70.85
June 5	1158	2.10	1321.58	70.88
June 224	1290	2.10	1454.18	71.14
June 3	1157	2.10	1321.51	71.28
June 130	1286	1.05	1451.34	71.64
June 203	1286	1.05	1453.03	72.37
June 129	1284	0.00	1451.39	72.53
June 204	1284	2.10	1452.92	73.19

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi
June 128	1282	1.05	1451.41	73.40
June 132	1281	2.10	1450.57	73.47
June 226	1285	2.10	1455.01	73.66
June 127	1280	1.05	1451.43	74.28
June 58	1154	2.10	1325.97	74.51
June 260	1277	0.00	1451.84	75.76
June 246	1146	0.00	1321.51	76.05
June 59	1150	2.10	1325.95	76.24
June 131	1275	2.10	1451.23	76.36
June 61	1148	2.10	1325.95	77.10
June 60	1148	2.10	1325.95	77.10
June 126	1273	2.10	1451.45	77.32
June 205	1274	2.10	1452.82	77.48
June 199	1274	1.05	1453.25	77.67
June 62	1146	2.10	1325.94	77.97
June 63	1146	2.10	1325.95	77.97
June 136	1270	2.10	1450.40	78.17
June 64	1145	0.00	1325.95	78.41
June 65	1145	1.05	1325.96	78.41
June 125	1270	1.05	1451.46	78.63
June 135	1268	2.10	1451.20	79.38
June 206	1266	2.10	1452.81	80.95
June 197	1264	2.10	1453.42	82.07
June 94	1136	1.05	1325.95	82.31
June 124	1261	2.10	1451.50	82.55
June 123	1256	0.00	1451.53	84.72
June 198	1256	2.10	1453.44	85.55

Node ID	Elevation ft	Demand GPM	Head ft	Pressure psi	
June 137	1250	2.10	1450.26	86.77	
June 196	1252	2.10	1453.27	87.21	
Junc 190	1250	0.00	1452.50	87.75	
June 191	1250	1.05	1452.53	87.76	
June 138	1244	2.10	1450.21	89.35	
June 192	1246	0.00	1452.68	89.56	
June 195	1238	2.10	1453.17	93.23	
June 194	1232	0.00	1453.02	95.77	

Appendix 10.4 Meter Data

Name	Group	# of active water svcs	BILL DATE	MONTHLY SOLD GALLONS	BLOW OFF / TREATMEN T GALLONS	MONTHLY	LOSS IN GAL (TP-AC)	GPM Leak Loss (LOSS GALLONS/4 3200)	MONTHLY DSL % (TP- (AC)/TP)	MONTHLY GAL PER DAY PER CONN ((SOLD/ActSvcs)/3 0)
Timberline Village	Α	281	January-18	396,911	0	1,060,499	663,588	15.36	63%	47
Timberline Village	Α	281	February-18	349,466	0	3,451,698	3,102,233	71.81	90%	41
Timberline Village	Α	281	March-18	201,511	0	1,704,834	1,503,323	34.80	88%	24
Timberline Village	Α	281	April-18	316,262	0	2,601,207	2,284,946	52.89	88%	38
Timberline Village	Α	281	May-18	238,806	0	2,094,056	1,855,249	42.95	89%	28
Timberline Village	Α	281	June-18	621,199	0	2,981,663	2,360,464	54.64	79%	74
Timberline Village	Α	281	July-18	568,256	0	2,022,599	1,454,344	33.67	72%	67
Timberline Village	Α	281	August-18	745,038	0	2,552,602	1,807,564	41.84	71%	88
Timberline Village	Α	281	September-18	662,167	0	2,715,801	2,053,634	47.54	76%	79
Timberline Village	Α	281	October-18	230,137	0	1,819,899	1,589,762	36.80	87%	27
Timberline Village	Α	283	November-18	249,817	0	1,352,578	1,102,761	25.53	82%	29
Timberline Village	Α	283	December-18	241,402	0	997,667	756,265	17.51	76%	28
Timberline Village	Α	260	Jan-19	484,554		1,554,983	1,070,429	24.78	69%	60
Timberline Village	Α	261	Feb-19	484,285		1,554,983	1,070,698	24.78	69%	66
Timberline Village	Α	261	Mar-19	427,482		1,554,983	1,127,501	26.10	73%	53
Timberline Village	Α	262	Apr-19	271,217		2,321,096	2,049,879	47.45	88%	35
Timberline Village	Α	263	May-19	231,117		1,792,758	1,561,641	36.15	87%	28
Timberline Village	Α	264	Jun-19	430,272		1,734,195	1,303,923	30.18	75%	54
Timberline Village	Α	267	Jul-19	539,749		1,763,702	1,223,953	28.33	69%	65
Timberline Village	Α	268	Aug-19	788,160		2,308,567	1,520,407	35.19	66%	95
Timberline Village	Α	268	Sep-19	693,067		1,932,438	1,239,371	28.69	64%	86
Timberline Village	Α	269	Oct-19	285,193		1,449,991	1,164,798	26.96	80%	34
Timberline Village	Α	271	Nov-19	394,024		1,835,884	1,441,860	33.38	79%	48
Timberline Village	Α	271	Dec-19	360,012		1,625,721	1,265,709	29.30	78%	43
Timberline Village	А	272	January-20	548,800		1,734,777	1,185,977	27.45	68%	65

	1	1							1
Α	272	February-20	453,587		1,835,648	1,382,061	31.99	75%	60
Α	272	March-20	327,011		1,455,737	1,128,726	26.13	78%	39
Α	273	April-20	346,324		1,505,027	1,158,703	26.82	77%	42
Α	274	May-20	385,033		1,739,123	1,354,090	31.34	78%	45
Α	274	June-20	515,499		1,663,423	1,147,924	26.57	69%	63
Α	274	July-20	876,925		2,296,967	1,420,042	32.87	62%	103
Α	274	August-20	1,112,148		1,646,310	534,162	12.36	32%	131
Α	274	September-20	1,159,744		2,316,813	1,157,069	26.78	50%	141
Α	274	October-20	431,297		862,710	431,413	9.99	50%	51
Α	274	November-20	368,914		787,037	418,123	9.68	53%	45
Α	274	December-20	408,176		847,649	439,473	10.17	52%	48
Α	274	January-21	772,766		1,217,350	444,584	10.29	37%	91
Α	274	February-21	515,776		1,116,690	600,914	13.91	54%	67
Α	274	March-21	456,698		760,581	303,883	7.03	40%	54
Α	274	April-21	524,550		1,002,820	478,270	11.07	48%	64
Α	274	May-21	610,039		1,002,018	391,979	9.07	39%	72
Α	274	June-21	610,263		1,149,595	539,332	12.48	47%	74
Α	274	July-21	1,203,794		1,764,975	561,181	12.99	32%	142
Α	274	August-21	1,030,086		1,391,090	361,004	8.36	26%	121
Α	274	September-21	979,229		1,359,075	379,846	8.79	28%	119
Α	274	October-21	409,585		757,895	348,310	8.06	46%	48
Α	274	November-21	416,741		974,857	558,116	12.92	57%	51
Α	274	December-21	329,913		678,160	348,247	8.06	51%	39
Α	274	January-22	368,128		1,439,017	1,070,889	24.79	74%	43
Α	274	February-22	483,260		519,785	36,525	0.85	7%	63
А	274	March-22	663,581		949,055	285,474	6.61	30%	78
Α	274	April-22	409,597		695,932	286,335	6.63	41%	50
А	274	May-22	230,055		460,032	229,977	5.32	50%	27
Α	274	June-22	392,528		408,962	16,434	0.38	4%	48
	A A A A A A A A A A A A A A A A A A A	A 272 A 273 A 274	A 272 March-20 A 273 April-20 A 274 May-20 A 274 June-20 A 274 July-20 A 274 August-20 A 274 September-20 A 274 November-20 A 274 December-20 A 274 January-21 A 274 February-21 A 274 May-21 A 274 July-21 A 274 Avgust-21 A 274 July-21 A 274 July-21 A 274 August-21 A 274 July-21 A 274 August-21 A 274 August-21 A 274 September-21 A 274 November-21 A 274 November-21 A 274 Rebruary-22 A 274 February-22 A 274 February-22 A 274 March-22 A 274 May-22	A 272 March-20 327,011 A 273 April-20 346,324 A 274 May-20 385,033 A 274 June-20 515,499 A 274 July-20 876,925 A 274 August-20 1,112,148 A 274 September-20 431,297 A 274 November-20 408,176 A 274 February-21 515,776 A 274 May-21 510,039 A 274 June-21 610,039 A 274 August-21 1,030,086 A 274 August-21 1,030,086 A 274 August-21 1,030,086 A 274 August-21 416,741 A 274 December-21 329,913 A 274 March-22 483,260 A 274 March-22 409,597 A 274 March-22 409,597 A 274 March-22 409,597 A 274 March-22 409,597	A 272 March-20 327,011 A 273 April-20 346,324 A 274 May-20 385,033 A 274 June-20 515,499 A 274 July-20 876,925 A 274 August-20 1,112,148 A 274 September-20 1,159,744 A 274 October-20 431,297 A 274 November-20 368,914 A 274 December-20 408,176 A 274 February-21 515,776 A 274 March-21 456,698 A 274 April-21 524,550 A 274 June-21 610,039 A 274 June-21 1,203,794 A 274 August-21 1,030,086 A 274 September-21 409,585 A 274 November-21 416,741 A 274 Pebruary-22 483,260 A 274 March-22 483,260 A 274 March-22 663,581	A 272 March-20 327,011 1,455,737 A 273 April-20 346,324 1,505,027 A 274 May-20 385,033 1,739,123 A 274 June-20 515,499 1,663,423 A 274 July-20 876,925 2,296,967 A 274 August-20 1,112,148 1,646,310 A 274 September-20 1,159,744 2,316,813 A 274 November-20 431,297 862,710 A 274 December-20 408,176 847,649 A 274 January-21 772,766 1,217,350 A 274 February-21 515,776 1,116,690 A 274 March-21 456,698 760,581 A 274 May-21 610,039 1,002,820 A 274 July-21 1,203,794 1,764,975 A 274 August-21 1,030,086 1,391,090 A 274 September-21 409,585 757,895 A 274 November-21 416,741 974,857 A 274 December-21 329,913 678,160 A 274 March-22 483,260 519,785 A 274 March-22 483,260 519,785 A 274 March-22 663,581 949,055 A 274 March-22 663,581 949,055 A 274 March-22 663,581 949,055 A 274 May-22 230,055 460,032	A 272 March-20 327,011 1,455,737 1,128,726 A 273 April-20 346,324 1,505,027 1,158,703 A 274 May-20 385,033 1,739,123 1,354,090 A 274 June-20 515,499 1,663,423 1,147,924 A 274 August-20 1,112,148 1,646,310 534,162 A 274 September-20 1,159,744 2,316,813 1,157,069 A 274 November-20 431,297 862,710 431,413 A 274 November-20 408,176 847,649 439,473 A 274 January-21 772,766 1,217,350 444,584 A 274 February-21 515,776 1,116,690 600,914 A 274 March-21 456,698 760,581 303,883 A 274 May-21 610,039 1,002,028 478,270 A 274 June-21 610,263 1,149,595 539,332 A 274 August-21 1,203,794 1,764,975 561,181 A 274 September-21 495,656 1,391,090 361,004 A 274 September-21 499,585 757,895 348,310 A 274 November-21 416,741 974,857 558,116 A 274 December-21 329,913 678,160 348,247 A 274 January-22 483,260 519,785 36,525 A 274 May-22 409,597 695,932 286,335 A 274 May-22 409,597 695,932 286,335 A 274 May-22 409,597 695,932 229,977	A 272 March-20 327,011 1,455,737 1,128,726 26.13 A 273 April-20 346,324 1,505,027 1,158,703 26.82 A 274 May-20 385,033 1,739,123 1,354,090 31.34 A 274 June-20 515,499 1,663,423 1,147,924 26.57 A 274 July-20 876,925 2,296,967 1,420,042 32.87 A 274 August-20 1,112,148 1,646,310 534,162 12.36 A 274 September-20 1,159,744 2,316,813 1,157,069 26.78 A 274 November-20 431,297 862,710 431,413 9.99 A 274 November-20 408,176 847,649 439,473 10.17 A 274 January-21 772,766 1,217,350 444,584 10.29 A 274 March-21 456,698 760,581 303,883 7.03 A 274 May-21 610,039 1,002,820 478,270 11.07 A 274 June-21 610,263 1,149,595 539,332 12.48 A 274 November-21 1,203,794 1,764,975 561,181 12.99 A 274 August-21 1,203,794 1,764,975 561,181 12.99 A 274 August-21 1,030,086 1,391,090 361,004 8.36 A 274 November-21 416,741 974,857 558,116 12.92 A 274 Rebruary-22 483,260 519,785 36,525 0.85 A 274 March-22 483,260 519,785 36,525 0.85 A 274 March-22 483,260 519,785 36,525 0.85 A 274 March-22 460,059 460,032 229,977 5.32	A 272 March-20 327,011 1,455,737 1,128,726 26.13 78% A 273 April-20 346,324 1,505,027 1,158,703 26.82 77% A 274 May-20 385,033 1,739,123 1,354,090 31.34 78% A 274 June-20 515,499 1,663,423 1,147,924 26.57 69% A 274 July-20 876,925 2,296,967 1,420,042 32.87 62% A 274 August-20 1,112,148 1,646,310 534,162 12.36 32% A 274 September-20 1,159,744 2,316,813 1,157,069 26.78 50% A 274 November-20 431,297 862,710 431,413 9.99 50% A 274 November-20 408,176 847,649 439,473 10.17 52% A 274 January-21 772,766 1,217,350 444,584 10.29 37% A 274 March-21 456,698 760,581 303,883 7.03 40% A 274 May-21 610,039 1,002,820 478,270 11.07 48% A 274 May-21 610,039 1,002,018 391,979 9.07 39% A 274 June-21 1,030,086 1,391,090 361,004 8.36 26% A 274 December-21 409,585 757,895 348,310 8.06 46% A 274 November-21 416,741 974,857 558,116 12.92 57% A 274 January-22 368,128 1,439,017 1,070,889 24.79 74% A 274 March-21 456,698 1,439,017 1,070,889 24.79 74% A 274 Movember-21 416,741 974,857 558,116 12.92 57% A 274 February-22 483,260 519,785 36,525 0.85 7% A 274 March-22 663,581 949,055 285,474 6.61 30% A 274 May-22 230,055 460,032 229,977 5.32 50%

Timberline Village	Α	274	July-22	1,082,019	913,921	-168,098	-3.89	-18%	127
Timberline Village	Α	274	August-22	1,131,305	1,385,004	253,699	5.87	18%	133
Timberline Village	А	274	September-22	1,521,612	2,336,640	815,028	18.87	35%	185
Timberline Village	Α	274	October-22	1,600,795	5,350,384	3,749,589	86.80	70%	188
Timberline Village	А	274	November-22	544,806	5,566,728	5,021,922	116.25	90%	66
Timberline Village	Α	274	December-22	393,426	2,084,235	1,690,809	39.14	81%	46
Timberline Village	Α	286	January-23	1,025,448	1,374,929	349,481	8.09	25%	116
Timberline Village	Α	286	February-23	422,942	717,564	294,622	6.82	41%	53
Timberline Village	Α	286	March-23	736,399	988,003	251,604	5.82	25%	83
Timberline Village	Α	286	April-23	431,611	750,192	318,581	7.37	42%	50
Timberline Village	Α	286	April-23	335,583	684,001	348,418	8.07	51%	39

September avg 873,552 october avg 339,053

40

017539-000											771	1190	1046	1516	598	658	1692	666	793	850
017540-000	8	7 5	573	178	637	319	425		254	254	197	158	562		267	29	259	302	234	730
017543-000	3	8 1	116	178	47	319	425	10	4	254	23	13	332		82	29	259	18	7	70
017544-000	1	5	47	41	32	28	90	218	46	46	9	25	24	102	40	6	31	60	1	70
017548-000		9	75	16	32	28	25	38	95	46	26	25	24	16	40	107	22	76	1	132
017584-000	23	5 23	386	966	519	241	456	871	411	379	277	2569	1423	990	72	147	422	311	184	527
017586-000	2	3	1	4	25	24	24	165	411	379	18	17.5	23	24	72	9	24	2376	125	80
017588-000	2	0 2	291	4	1	16	17	21	411	20	18	114	9	52	70	67	23	94	125	290
017593-000	12	9 5	504	610	552	346	543	567	448	448	458	630	489	680	502	418	704	366	348	638
017596-000	2	4	24	610	1	1	71	11	31	31	5	184	75	104	130	46	148	16	122	32
017642-000	2	9 1	L04	610	1	1	71	189	31	31	1	83	206	97	68	2	148	151	30	96
017655-000	3	8 1	155	5	5	180	191	296	17	17	68	55.5	377	474	101	74	149	247	314	435
017660-000	2	2	68	5	33	180	191	39	17	22	5	105	113	281	103	71	32	11	314	118
017677-000	1	2	38	11	5	1	5	363	17	18	22	36	36	12	9	44	403	441	268	552
017697-000	26	2 3	383	213	1585	1139	1482	1704	1139	1375	507.5	840	1314	1097	516	136	465	310	227	634
017697-001	3	3 2	240	37	15	44	150	236	43	43	21	265	211	302	462	94	136	55	115	357
017711-000	12	5 9	808	388	432	311	363	124	43	320	252.5	626.5	1175	1139	124	361	461	416	284	243
017837-000	4		14	388	432	311	363	124	43	13	54	169	151	131	73	60	64	44	29	282
017838-000	4	9	39	30	432	1	154	508	118	118	9	89	285	593	285	160	59	28	23	415
017839-000	12	0 12	284	234	105	5	40	99	173	202	347	953	1438	972	74	81	124	70	84	127
017841-000	9		55	8	27	115	113	294	134	149	124.5	258	2544	962	205	33	96	446	87	850
017843-000	1	2	13	16	50	115	113	10	134	1	9	27	83	34	23	33	96	54	27	1
017846-000	6	2 2	275	188	189	227	246	296	227	293	217	159	434	277	29	15	177	192	164	505
017847-000	1	3 2	227	24	13	20	39	138	36	4	7	66	19	23	78	72	104	35	140	1
017849-000	20	1 2	210	276	40	4991	42	3351	176	50	7	3	339	342	45	34	57	87	287	80
017850-000	19	3	22	276	40	4991	193	3351	104	50	7	1	26	342	18	34	43	114	123	60
017853-000	12	0	57	39	40	4991	61	120	76	26	48	85	148	177	8	28	19	290	31	80
017854-000	2	6 1	100	40	63	7	36	52	3	62	142	322	263	186	12	18	26	47	64	1
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01/3/0-000	2	J 10	22	10	183	Ö	11	2//	211	89	184	145	80	1/0	12	21	207	2	1/0

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023428-000	8	4 20	9 39	139	335	400	393	203	149	327	559	624	718	307	103	196	423	301	332
023472-000	13	4 35	1 117	225	190	327	587	309	2024	342	543	592	917	326	317	528	560	513	2800
023516-000	6	2 11	4 117	16	1	16	130	309	2024	1	127	71	119	23	38	107	560	513	5
023588-000	6	8 87	2 519	221	55	99	351	215	215	57	232	116	379	127	307	76	47	68	5
023605-000	26	7 87	0 389	946	525	1118	949	800	5156	88	567	827	786	432	62	622	878	517	600
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023633-000	2	1	5 22	154	40	138	252	21	6	4	187	149	57	133	40	25	100	469	80
025373-000	2	4 19		65	29	52	51	10	13	361	20	149	57	133	40	25	100	469	80
025496-000	18			513	795	391	808	437	2156	406	618	1037	863	607	249	614	705	317	801
025520-000	3		3 1	141	150	85	178	39	66	51	233	238	275	106	30	243	175	44	224
025562-000	6			62	203	120	144	50	80	364	489	371	87	60	67	60	170	118	30
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025680-000	4			246	163	228	12	181	181	365	148	124	220	9	88	344	180	227	71
025688-000	3			110	114	90	423	181	9	148	316	88	133	84	3	22	174	207	413
025774-000	6			159	251	261	246	190	30	430	439	406	441	218	1	1	208	141	150
025882-000	3			159	251	12	246	76	22	106	210	174	160	26	2	6	208	141	150
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026152-000	1		6 18	69	22	17	159	35	4	15	81	42	91	4	40	33	22	182	20
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026161-000	3			156	77	117	174	28	20	186	163	300	326	162	82	43	200	72	105
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026197-000	73	219	25	307	137	227	309	194	59	245	499	728	592	126	44	213	147	53	8
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026287-000	91	610	179	403	293	384	522	218	83	88	320	557	784	176	4	149	246	204	134
026291-000	71	177	46	159	212	205	339	173	187	235	423	663	640	243	97	382	246	200	
026316-000	131	272	183	468	154	473	563	315	538	758	911	862	885	424	360	360	31681		
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026626-000	2645	16870	5520	5035	6121	8314	8900	2450	3280	73	31630	19040	21825	5455	1410				
026631-000	75	534	97	309	181	348	435	297	54	29	339	554	473						
026728-000	39	10	23	107	174	213	546	185	229	96	12	282	2						
026777-000	78	617	136	105	398	436	733	208	217	145	243	339	231	16	44	102	82	6296	1
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027404-000	58	2	5	40	264	14	1418	4	37	1	606	207	231	16	44	102	82	6296	1
																		C	UTTOFF (1

count 237.0 100.7 FALSE FALSE FALSE 234.6 FALSE FALSE 205.9 FALSE FALSE FALSE FALSE FALSE 175.6 FALSE FALSE FALSE FALSE FALSE FALSE FALSE 64.1 FALSE FALSE FALSE FALSE FALSE FALSE FALSE 195.9 70.9 195.0 **FALSE** FALSE FALSE FALSE FALSE FALSE FALSE FALSE FALSE **FALSE** FALSE FALSE 283.9 FALSE FALSE FALSE FALSE FALSE FALSE

121	170	292	410	256	409	181	211	414	200	299	269	192	273	287	562	390	350	1	1 0	FALSE
11	170	6	410	34	41	181	211	88	82	29	114	16	31	1	122	237	65	2		FALSE
11	294	333	587	389	548	105	67	189	60	259	215	279	366	445	514	596	546		0	FALSE
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119	66	85 159	235 124	569 21	1176	490 49	383	117 117	71 173	149 10	207 41	185 164	73 57	62 19	794	1408 8	993 1	2		
16	66 18		94	143	117		383 383	89	43	135		74	24	19	18 185	8 114	37			
21 1101	981	43 895	94 2277	3483	100 3881	62 743	383 694	89 1171	865	1023	116 1104	74 771	324	1386	1976	2167	1092	3	5 0 1 1	FALSE 344.7
1101	981	895	62	3483	3881	743	5	31	57	1023	143	771	4	1386	1976 77	64	92	1		
601	981	1	61	123	65	1	23	34	12	1023	10	10	12	1386	9	2	92	2		
81	106	153	200	174	310	27	2	163	181	289	434	268	51	196	188	88	86	1		FALSE
21	45	153	200	174	310	1	1	436	401	892	682	652	700	196	188	88	86	1		
25	58	53	40	36	111	35	35	110	98	16	139	75	237	145	140	89	130	3		FALSE
48	48	16	62	126	125	144	33	98	62	84	96	90	68	54	79	185	131	3		FALSE
20	33	16	78	143	9	144	9	30	54	82	96	90	55	54	139	116	130	3		FALSE
226	309	244	280	143	9	144	9	30	54	82	96	90	55	54	139	116	130	3		
160	106	60	224	240	327	195	123	142	106	180	343	332	201	382	577	320	590	1	7 0	
53	21	53	180	93	133	154	60	236	122	106	105	59	128	101	86	274	327	2		FALSE
67	21	1	565	888	1145	651	33	6	31	83	195	71	101	1	514	923	1012	2		
27	395	42	166	72	52	116	24	55	84	50	98	125	31	60	129	83	102	3		
126	40	50	70	110	120	100	60	80	114	100	260	125	20	240	210	230	420	3	0	FALSE
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57	113	152	189	664	967	78	49	69	141	200	777	274	2	91	717	274	269	2	1 0	FALSE
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20	52	22	27	92	116	59	64	130	79	66	117	58	236	379	444	472	492	3	0	FALSE
69	176	110	271	170	323	228	175	84	81	91	94	122	55	137	162	165	281	2	5 0	FALSE
17	2	49	35	26	178	58	10	170	948	50	242	82	65	136	10	52	137	3	0	FALSE
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29	185	8	7	2	84	3	12557	150	156	218	65	61	257	75	288	80	293	2	3 0	FALSE
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98	92	214	493	319	429	828	515	40	39	15	108	124	62	346	482	342	383	1	9 0	FALSE
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202	123	135	1081	951	1088	686	789	851	747	741	1223	520	516	651	997	734	1127		1 1	154.4
12	46	135	54	43	131	59	1	61	32	122	182	48	2	239	82	87	97	3		
213	239	86	549	439	542	280	462	505	333	427	411	341	397	377	385	305	395	1		FALSE
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1483	2282	2437	3143	3168	2911	2914	1629	1406	935	1118	1333	1005	1050	1044	1698	1191	930		1 1	
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136	380	126	799	714	584	394	463	635	342	447	593	415	379	339	753	777	475		3 1	119.1
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264 9	380 7	126 12	799 87	714	1329 18	51 3	463 1	2 2	342 6	3455 3455	1598	415 22	379 379	339 29	42 44	777 39	3 68	1		FALSE FALSE
		310		18							15									
186 2	439 34	14	793 75	1437 22	1990 25	688 79	541 9	540 6	467 15	300 54	981 85	386 50	338 31	818 31	2253 23	1271 53	553 19	3	_	192.6 FALSE
2	34 272	182	75 162	255	210	79 198	56	6	15 84	124	85 138	45	145	151	123	273	91	2		
204	238	2	3	255 155	210	198	235	275	245	293	413	45 89	145	151	123	136	128	1		FALSE
10	238 10	260	480	320	420	140	235 80	275 50	245 10	293	413 50	89 89	20	820	1060	30	100	2		
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100	13	03	201	30	27	130	114	,	U	40	55	41	13,	113	1-7-7-2	557	370	2	. 0	I / NEJE

380	227	294	1413	2033	2411	1204	1280	525	279	265	378	194	107	226	2338	2197	1899	5	1	
98	150	98	754	1077	1086	135	46	170	90	162	274	1140	359	481	1541	1399	481	19	0	FALSE
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327	300	400	500	503	747	591	372	655	820	837	402	244	295	304	401	379	485	1	1	
152	179	400	562	1037	765	121	113	205	59	200	245	330	248	225	403	975	251	13	0	
86		189	218		96	4	89	119		150	187	196	270		113		46	19	0	
	164			263					219					13		240		25		
39	69	15	81	518	214	168	14	156	25	150	13	78	4	17	256	412	447		0	
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12	1	9	8	49	41	81	14	19	53	20	148	60	10	38	49	99	66	33	0	FALSE
12	50	50	90	30	23	72	60	82	56	286	256	37	80	51	266	215	180	27	0	FALSE
903	75	66	66	30	33	72	21	12	49	286	134	2	80	30	78	29	14	30	0	FALSE
55	24	2	69	42	18	189	89	196	116	161	105	93	217	489	160	699	339	23	0	FALSE
55	83	301	1654	3044	5828	1562	530	44	99	141	111	34	47	359	1877	1280	333	20	0	FALSE
24	20	23	45	18	8	125	19	97	10	12	113	42	11	36	103	62	80	37	0	FALSE
16	23	10	17	28	28	69	67	613	27	39	49	33	15	26	46	58	65	36	0	
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			1949						650	1090		1112							_	
141	662	111	102	57	374	303	81	59	234	486	311	323	107	79	109	199	152	20	0	
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954	710	432	105	63	59	110	118	89	283	20	83	68	53	98	146	92	22	30	0	FALSE
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6	9	778	18457	19311	17687	7446	2209	1406	6	23	2734	37	31	12	10040	11472	10093	10	0	
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23	94	171	211	493	177	150	120	54	51	258	374	128	219	139	179	310	45	23	0	FALSE
2	72	3	272	76	29	185	38	49	139	361	447	141	104	203	90	25	137	25	0	FALSE
637	353	512	1258	1312	1406	651	312	547	359	507	1151	288	424	583	967	1543	1200	1	1	168.6
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170	110	250	500	540	720	250	290	660	810	250	650	210	230	430	560	340	490	4	1	89.7
32	63	8	3	16	3	6	5	34	119	137	435	191	9	2	8	34	1	33	0	
6	43	3	37	217	51	124	14	51	172	160	134	152	47	72	50	1	217	28	0	
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164	158			13			218		43	169		41	253				11		0	
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219	79	101	149	79	54	104	56	33	53	129	112	245	123	63	48	1219	141	32	0	FALSE
18 4	8 47	14 132	123	110 308	67 230	34	14 154	15 137	7 70	11 198	11 86	21	12 174	40 170	103 339	136 656	65 128	36 25	0	FALSE FALSE
69	120	307	192 755	1343	1554	115 609	193	236	347	504	388	104 241	174 174	101	339 1147	2087	956	25 8	0	FALSE
42	120	307	101	85	30	609	7	42	66	122	321	44	305	127	62	109	160	27	0	FALSE
6	62	307	17	5	79	37	7	43	13	77	40	34	14	127	62	26	40	36	0	FALSE
49	205	176	2000	1286	1246	760	1084	46	44	56	247	127	181	390	2078	1896	7428	14	0	FALSE
13	167	178	2172	2387	1681	170	105	103	2136	1781	133	140	60	90	1590	2287	1720	21	0	FALSE
700	536	82	44	64	70	72	26	209	431	150	194	139	86	76	203	69	155	21	0	FALSE
142	70	55	191	338	321	218	99	207	243	150	350	210	36	111	50	193	187	18	0	FALSE
372	502	403	656	728	800	639	703	825	457	614	1072	515	524	420	859	791	879	1	1	146.2
15	73	21	64	115	79	207	159	2	72	365	594	92	167	276	203	329	160	24	0	FALSE
177	140	250	400	590	550	380	230	400	50	340	380	330	240	310	340	600	380	15	0	FALSE
65 65	11 321	10 349	71 713	82 1175	57 1194	32 468	230 547	47 467	31 303	73 357	174 422	130 348	64 427	7 267	119 736	156 960	234 678	31 2	0 1	FALSE 122.8
422	213	62	285	88	312	50	68	256	450	100	385	120	55	79	149	104	164	22	0	FALSE
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201	9	48	32	32	77	126	32	12	82	249	312	141	36	83	113	105	133	32	0	FALSE
201	147	13	21	31	35	20	32	12	428	249	312	141	124	83	627	1	166	30	0	FALSE
9	11	9	22	83	89	43	32	6	23	10	94	10	11	13	43	9	27	37	0	FALSE
4	208	9	37	38	19	16	29	22	13	2	73	10	83	13	52	37	14	36	0	FALSE
1520	1340	1250	1770	1190	1380	1280	890	1910	1190	1610	2960	1625	1275	1190	1910	1530	1690 comm	1	0	FALSE
417	199	497	742	552	693	517	351	481	337	512	839	266	437	473	618	432	519	4	1	101.9
90	277	305	1014	819	2385	895	739	1102	295	427	855	659	681	661	6120	3181	1072	3	1	448.4
197	54	116	144	203	181	161	52	77	128	211	362	150	161	112	256	171	318	22	0	FALSE
54 402	182 292	168	265	192 1014	143	64	101 498	151	256 449	100	194	151	444 470	136 790	264	224 441	255 376	25	0	FALSE 106.4
402 497	292 243	165 171	432 607	835	403 654	353 372	498 312	490 435	633	350 450	402 870	333 599	470	790 521	653 510	559	3/6	2 1	1 1	138.1
497	140	190	470	500	520	210	140	300	630	200	370	30	50	40	10	60		18	0	FALSE
38	32	87	16	210	87	19	1	56	46	266	383	142	18	135	485	808		24	0	FALSE
197	227	343	519	595	3673	3441	3015	3628	2282	2965	3285	2607	1966	1324	1488			1	1	292.5
56	89	142	288	225	357	129	85	247	0	500	633	519	383	213	396			12	0	FALSE
37	49	73	85	225	115	90	38	51	43	141	448	188	87	77	249			28	0	FALSE
102	13	74	3226	921	447	183	95	75	0	150	350	127	32	149				22	0	FALSE
197	120	48	61	135	145	53	15	306	217	127	353	264	175					24	0	FALSE
382	221	512	2632	1500	2183	1157	459	498	526	583	722	476	317					5	1	137.8
3171	2688	4167	4243	2767	2331	1259	1185	1437	1667	800	1178							2	1	315.3
3171 3171	2688 904	3 3	72 72	132 132	164 164	97 97	13 13	1437 1437	1667 1667	800 800								20 15	0	FALSE FALSE
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46	11	120	226	135	179	212	113	35										21	0	FALSE
488	341	612	905	688	988	750	596	470										0	1	164.3
91	77	48	252	340	224	140	94											17	0	FALSE
91	38	36	427	464	531	278												15	0	FALSE
91	242	205	472	450	212	276												7	0	FALSE
172	191	336	163	58	113	168												10	0	FALSE
2	37	5	40	63	138													18	0	FALSE
152 1	76 2	231 29	269 226	701														10 15	0	FALSE FALSE
126	167	29 164	220															4	1	129.2
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																			1	0	FALSE
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23	167	50	112	460	129	2034	37	129	200	74	47	4	907	814	154	143	215	292	19	0	FALSE
23	167	50	112	460	129	2034	37	129	200	74	47	4	907	814	154	143	215	292	27	0	FALSE
23	167	50	112	460	129	2034	37	129	200	74	47	4	907	814	154	143	215	292	27	0	FALSE
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23	167	50	112	460	129	2034	37	129	200	74	47	4	907	814	154	143	215	292	23	0	FALSE

18MO DATA)

CUTOFF 160 CF/MO
no months 6 NO FULL TI 7451.14 EACH
ADD 0.0051 GPD

number full time: 39 full time ADD 197

Appendix 10.5 Well Logs and Pumps



Well Tagging Form

Unique Well ID Tag Number: AFM 952

Use this form ONLY if an Water Well Report IS FOUND

		A	ttach	the	original	well rep	ort to this	form				
								Well Report calling 360-				
			Well (Owner	ship, If Di	fferent F	rom Well Re	port				
First name				Hn R	WATER	t name いいにと						
Street Addres	SS				121 000		5.E.					
City			C	Slymp		State	WA	Zip Code 98	?50 l			
			Locat		Well, If Di		rom Well Re	eport				
Well Address	107 Bearfoot Rd.											
City	PACKWOOD Lewis											
14-14 SE		-	v.E			Township N.	131	Range	EWM or (check one)			
Latitude		Degree		6		Minutes	38	Seconds 59				
Longitude		Degree		121		Minutes	37	Seconds 3				
Elevation at I Tax Parcel N		face <u>//8</u>		_	ers (check one))						
Location of V	Vell Ider	ntification				aracteris	tics					
			on ω	ell c	asing							
	D	С	В	A	Sc	ale 1:24,00	0 (1" = 2,000')					
	E	F	G	Н			cation of the wo	ell within the Se	ection by			
į	M	L	К	J	Se	ction	01	DEC	EIVED			
	N	Р	Q	R				nro				
Comments								OCT	09 2012			
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of Ecology (SWRO)

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	DEPARTMENT OF CONSERVATION APPL	-		
	No.			•
VELL LOG	20 10 65	T	-1. 1:	
•	Sept. 29 19.65.		-1-1-	
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	Driller's Record			۸.
Source				٦.
Location: 5	tate of WASHINGTON	1	W	14
County	Lewis N and 900! W of		· = ====	. :
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Alea	El corner Diagr	am of Section		
		, 1001		1
		Woeh.		
Drilling C	George P. Gill Route 3. Box 276, Chehalls Cable Date April Cable Date April Far West Industries, Inc.		65	7
Addr	ADIT	والمراجعة والمستحيط		F.
			114.22 md·+	
MEN	Far West Industrial Tacons	Wash		
Owner	THE MANAGEMENT OF THE PARTY OF			. ش
Addı	ess datum above			
Land su	race, do		DOCK 1	
		1886)	(eet) (O	
CORRE	MATERIAN	esary, in par	entheses.	٠
LAHON	nscribe driller's terminology literally but paraphrase as neadly water-bearing, so state and record static level, if reports all water-bearing, so state and record static level, if reports desurface datum unless otherwise indicated. Correlate with desurface datum unless otherwise indicated, perforations, s. Following log of materials, list all casings, perforations, s.	Give depti	column.	••
(Trai	nscribe driver of state and record indicated. Correlate was all water-bearing, so state and record indicated. Correlate was all water-bearings, so state and record indicated.	creens, etc.)		-
below lau	nscribe driller's terminology iteration and record static level. If the state and record static level is a water-bearing, so state and record static Correlate with all water-bearing, so that with all desires, perforations, so the state of			
II Teaster	Community domastic supply			
	Community		-	
	201		-	
	DTMS: 8" x 891			1
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	Hardpan with boulders		ر. ن: « مسيونيورور سيهر	ğ
		15	54	3 .
		54	80_	3
	Hardpan, Vellow with small.			4
		1	AC.	.3
		مد ا		٠,
		80_	·	4
		BO	***	4
	Sand, then into gravel w/ wtr	RO	-	A Land
	Sand, then into gravel w/ wtr. Casing: 8" from 0-89"			A make
	Sand, then into gravel w/ wtr. Casing: 8" from 0-89"		h	A. T. L.
	Sand, then into gravel w/ wtr. Casing: 8" from 0-89!		h	The same
	Sand, then into gravel w/ wtr. Casing: 8" from 0-89!	45° wit	h	
	Sand, then into gravel w/ wtr. Casing: 8" from 0-89! Surface sealed to a depth of		h	The state of the s

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WA State Department of Ecology (SWRO)

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

wyt l	COG.—Continued No	/	·		. '
FINT .	200.				
		TERCENESS (feet)	Darie (feet)		
HOITA	MATERIAL	(1000)		1000	
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				THUSE .	
	Yield: 125 gym with L' Dd af	er 6 hr	<u>s</u>		
	Vield: 125 gra along			_33	
	0/04/45				
•	10 second recovery on 8/26/65			- 9	
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WA State Department of Ecology (SWRC)

Corre- Lation		MATERIAL			
		MATERIAL		From (feet)	To (feet)
		. 1	Depth forward .		
	Date of (est: 10-17-68	3		
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WA State Department of Ecology (SWRO)

S. J. andendari

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Ар	p1. 9892	•		
Pe	r. STATE OF WASHING	-	٠.	
	TE DEPARTMENT OF CONS	ERVATTO	N	
	DIVISION OF WATER RE	OURCES .	S	٠.
	LL LOG			
	ord by Driller			. [.
Sour	ce Drillers Record			ر ۔لی
Loca	tion: State of WASHINGTON		- (•)	
	County Lewis			Γ.
		- 4	1.2	1
1	Map E 1/4 NE 1/4 sec. 1 T. 13 N., R 9 E.E. ng Co. George P. Gill W. address Rt. 3, Box 326, Chehalis		-	
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Drilli	ng Co George P. Gill W.	Diagram	Loi Section)
	ng Co. George P. Gill W. Address Rt. 3, Box 326, Chehalis	Tily-		1
	F-Al- t a the control of the last terms of the l			Ý
~ 	Method of Drilling Cable Date Date Far West Industries, Inc.	4-3-65	, ïp	-
Jwne	747 M3441 Street			
Α.	ddress 747 Middle Waterway, Tac	oma, Wn		••
−ang	surface, datum , above			- : :
SWL:	surface, datum tt above 34' Date 10-17-68 18	Dims 8	x69.44	
		<u> </u>		
Corns Lation		From (feet)	(feet)	٠.
mate elow is leasib	canscribe driller's terminology literally but raraphrase as rial water-bearing, so state and record static level if remotesurface datum unless otherwise indicated. Correlate the Following log of materials, list all casings, perforations.	necessary, operated. Give with stratig	in parentheses, depths in feet raphic column, itc.)	
	Domestic Supply	1		
<u> </u>	in .			. 4
	sand and gravel ;	.0	8 ~	
	hardpan with boulders	. <u>š</u>	45	
	yellow formation	· ·		4
	sand, medium, find-	45	54	.4
	with some water	1-15	 	١,
	at yellow formation	54	80	. 4
	with a small amt, of water		1. 1. 1.	
	sand	80	89	
	gravel with water		1	4
	Surged and Sand pumped to Deve	lop.	· · · · ;	4
			 -	. 5
		,		4
]	casing installed 8" from 0 to	89		No.
	1		hro.	Section .
	1	89 Fer 12	nro.	Make and
n up	Yield: 812 gpm with 26 DD at (over)	Fer 12	*** 1	STATE IS A STATE OF
n up	Yield: 812 gpm with 26 DD at	Fer 12	*** 1 1	24.45.44.44.44.44.45.44.44.44.44.44.44.44

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WA State Department of Ecology (SWRO)



Well Tagging Form

Unique Well ID Tag Number: AFM953

Use this form ONLY if an Water Well Report IS FOUND

	US					well report to the		
						ase complete a "Wa headquarters office		
			Well	Own	ership, If Di	fferent From Well	Report	
First name				140	l l	t name		
Street Addre	HARWATERWORKS Street Address 8421 Old Hwy 99 S.E.							
City			C	lym	pia	Hwy 99 S.E. State WA	Zip Code 9850	
				tion o	of Well, If D	ifferent From Well	•	
Well Address	s		1 -			and Range are REQUIRED	*	
City		7	yckma Ta	77 m	Bearfoot	Drive County Lewi	s County	
1/4 - 1/4		1/4		Sec		Township N.	Range	EWM or (check one)
Latitude		Degree	i.E		01	BN Minutes	09 Seconds	□WWM
		Degree		46)	38	5	9
Longitude		Degree	s	121		Minutes 37	Seconds	<i>I</i>
Elevation at Tax Parcel N					neters (check one			
		01	031	105				
Location of \	Nell Ider	ntification	Tag		•	aracteristics		
				·	ON CASIN	<u>S</u>		
	D	С	В	A	Sc	ale 1:24,000 (1" = 2,00	00')	
	Е	F	G	Н		licate the location of th awing a dot at that poin		Section by
	М	L	Κ	J	Se	ction 01	MANAGE .	
	N P Q R							

Comments

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OCT 0 9 2012

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

Application No. 62-22769

Permit No.

WNER: Name Parcest Industries		coma	
OCATION OF WELL: County Lewis Tract A vol 5 of Plats page of records of Lew and distance from section or subdivision torner	Timberline Village, Trank Division is County.	111, es 13 N., R.	78.00
ROPOSED USE: Domestic & Industrial Municipal Irrigation Test Well Other	(10) WELL LOG: Formation: Describe by color, character, size of mater show thickness of aquifers and the kind and nature of the state		
Irrigation Test went Outst	show thickness of aquifers and the kind and nature of stratum penetrated, with at least one entry for each	change of fe	rmation.
YPE OF WORK: Owner's number of well	MATERIAL	FROM	то
New well XX Method: Dug Boxed	Sand & gravel	0	20
Deepened D Cable Driven D	Sand. gravel & boulders	20	40
Reconditioned [Rotary Jetted [Sand, course & gravel water	40	60
IMPNSIONS: Diameter of Well 8 inches-	Oravel; lange	60	63
MENUSIONS. District of the Land	The second secon		
lled63ft. Depth of completed well		-	
INSTRUCTION DETAILS:		1	
	Paris Paris	·4.	
Sing macated: Diam. from			
the state of the s			
Welded	TO CE ENTER	*** 7	
rforations: Yes 🗆 No 💽	TO THE PERSON OF		
Tree of perforator used			
SIZE of perforations in. by in.	1		
merforations from	DLO T O. Tomas		
perforations from ft. to ft. to ft.	יייי ביייייייייייייייייייייייייייייייי		
perforations from ft. to ft.	- Depleting of Course	<u> </u>	•
MANAGE MANAGEMENT NA PE	50.1.2.	U	
Rens: Yes No S Manufacturer's Name	The second secon		
Model No	The same of the sa		
Diem Slot size from ft. to ft.			
Diam, Slot size from it. to it.			
. •			
avel packed: Yes No X Size of gravel:		,	
Gravel placed from ft. to ft.			
face seal: Yes of No II To what depth? 20 ft. Material used in seal Bentonite			·
Material used in seal. Did any strata contain unusable water? Yes : No :	K		
Type of water? Depth of strata	• • • • • • • • • • • • • • • • • • • •		
Method of sealing strata off			
			
UMP: Manufacturer's Name		- 	
Type:	The same terms of the same of		
ATER LEVELS: Land-surface elevation above mean sea level			
vel 30 rt below top of well Date	The second section of the section of the second section of the section of the second section of the second section of the se		
pressureibs. per square inch Date	a series of the series of		
		<u> </u>	
	and the second s		<u>L</u>
Drawdown is amount water level is lowered below static level	Work started 7/18/ 19 75 Completed	7/18/	, 19.7
		·	
The state of the december of the little	E. TV DEAL DIVINISHED OF THE PROPERTY.		
gal./min. with 10 6"R. drawdown area:		on and this	report
1) 27 21	true to the best of my knowledge and belie		
ery data (time taken as zero when pump turned off) (water level		4 ·	
astred Hom won top 1		(Type or	print)
Water Level Time Water Level Time Water Level		01	
	Address P. C. Box 44408, Tacoma,	Wa. 984	
	M.111-10-1	l l	
,	" 1 " 1.1. P. LT 1 1 1-1/10	11/10	<u>~</u>
0 /6 /7h	relements //A/A/A/		
e of test 8/6/74 to drawdown after 1 hr	[Signed] (Well Driller)		
e of test 8/6/74 est 45 gal/min. with 0 ft. drawdown after 1 hr flow gp.m. Date 7/18/74 ature of water Was a chemical analysis made? Yes No.	Weil Drillery	ember 1	3. 419 7

S. F. No. 7356-OS-(Rev. 4-71).

OF UH A 24 (USE ADDITIONAL SHEETS IF NECESSARY)

OCT 09 2012

INVUICE Timberline well# 1

PO BOX 66490 PORTLAND OR 97290 NINSIDE





-	BRANCH	ACCOUNT	NO.	ORDER WRITER	
	28.	2073	556	104	
	INVOIC	E DATE	INVOICE NO.		
	2/2	1/01	<u>50</u>	45764	

INQUIRIES? PLEASE CONTACT YOUR LOCAL BRANCH.

			a or mupo	ALL COLUMN TO THE PROPERTY OF			PAGE 1
ATE ORDERED	DATE SHIPPED	PICK TICKET NO.	SHIPPED VIA	ORDERED,BY	CUSTOMER P.O. NO.	JOB NAME	JOB NO.
						4 *	
2/12/01	2/20/01	5045764	wc		TIMBERLINE VILI	Open account	OFEN
		i	Provide Commence				

UTILITY MANAGEMENT SERVICES

P O ROX 542

E OLYMPIA, WA 98540

CUSTOMER PICKUP 3415 Capitol Blvd 8 Tumwater, WA 98540 CAP PROJ. V

			O					
<u>VI</u>	DESCRIPTION	STK. U/M	QTY, ORDERED	QTY. SHIPPED	QTY. BACK ORDERED	UNIT PRICE	PER , DISCOUNT	AMOUNT
377	2308200-6- 20H 230G GF 6 PE	EA	1.	1.		1037.5000		- 1,037.50
3556	15H By 6" 3W 230V-3 FR SUB MTR by 1	EA	1.	1. 200		993.0000	I EAW	993.00
752		EA	1.	1.		19,2300	EAP 099 . 99	19.23
252	4X60" GALVANIZED NIPPLE	EA	1	1 .		84.5250	EA	94.53
	MIFXMIP							
	SOE 3" FLOM MAS CHECK VAL	EA	1.	1.		188.0200	EA	168.02
	8"X4" TORQUE ARRESTOR	EA	1.	1.		33.5760	EA	33.98
	3X54" CALVANIZED NIPPLE	EA	1.	1.	the second	16.7150	ea	16.72
j,	TF16 FT WHITLAM SELECT UNYTE	EA	1	1.	to a second of	11.9040	EA	11.90
JCMJ	4" TAC GALVANIZED FIFE	tind.	42	42		510.4700		214.40
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	and the second of the second o			i de la companya de l				
	***** THANK YOU FOR Y	THE HE	PROTYETO M	36 36 36 36				

***** THANK YOU FOR YOUR ORDER *****

*** YOUR BUSINESS IS APPRECIATED ***

PLEASE CALL IF WE CAN BE OF ASSISTANCE.

104 MIKE HOLLOWAY 206/786-8382

	90. 0. 4		hand bet a batt in balt date. Bet afte bille bill bet bette	
SUB-TOTAL	TAX	CODE	OTHER CHARGES	TERMS
	601 756 970		IIf Paid By 03/10/01	
2,578.88	.00		.00 You May Deduct	77.38

2,578.88

FREIGHT D = DELIVERY H = HANDLING E = EPA R = RESTOCKING M = MISCELLANEOUS

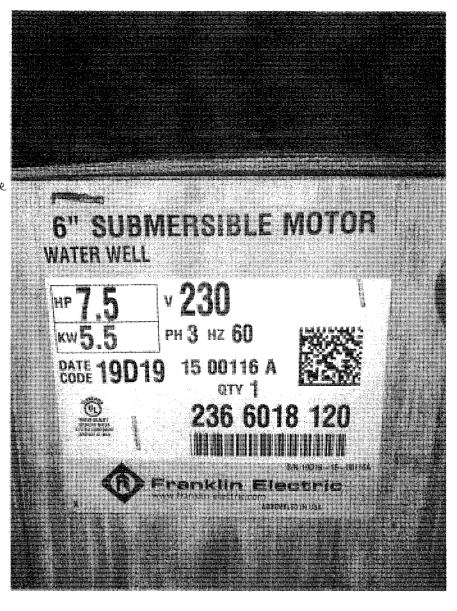
well # 2 outside

Timberline Village
Well#2 "outside"

INStalled on:
63ft 4"Galv

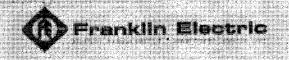
(1) 4" DI chakvalve

#10 Wire Jacketod

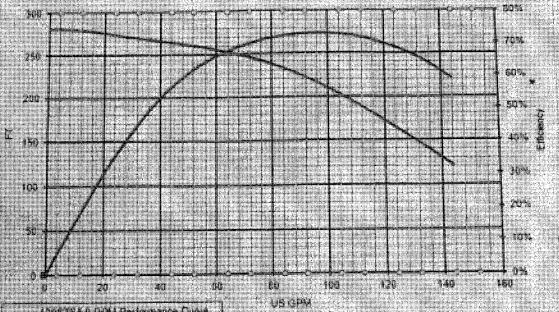


Date: Installed February 20, 2019

Rick Derek Jeson Dan Trubelling out side wolf



120 STS 5" Pump Performance



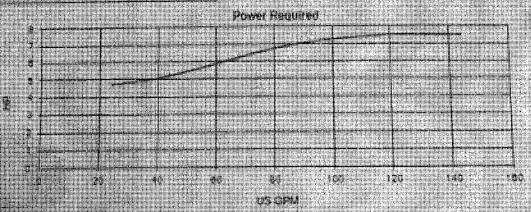
- 120STS 6 RPM Performance Curve

nagarta kan kan da ka

Max Supplication Gueve - 1755 - HP

ilion Seesiko Entellik

n C tara impellers





Submittal Data

PROJECT:	UNIT TAG:	QUANTITY:	
	TYPE OF SERVICE:		
REPRESENTATIVE:	 SUBMITTED BY:	 DATE:	
ENGINEER:	 APPROVED BY:	 DATE:	
CONTRACTOR:	ORDER NO.:	DATE:	



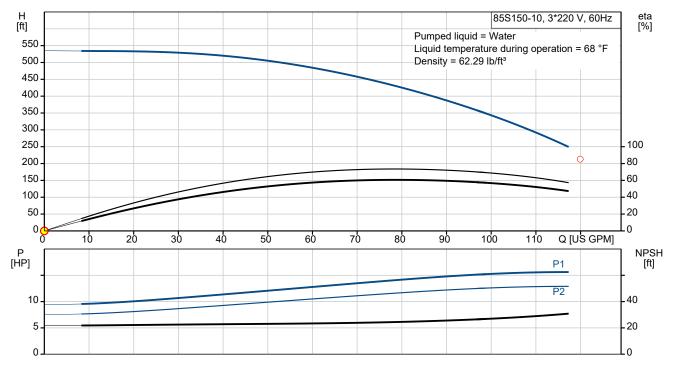
85S150-10

Submersible pumps in stainless steel. EN 1.4301 (AISI 304). EN 1.4401 (AISI 316). EN 1.4539 (AISI 904L). Typical application: Ground water, Irrigation, Mining, Fountain, Off-shore etc.

Note! Product picture may differ from actual product

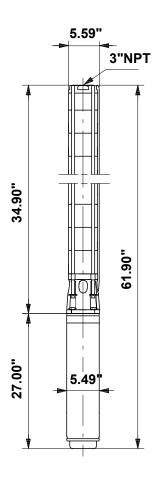
of Service
47.4 %
Water
68 °F
30.8 ft
1.000

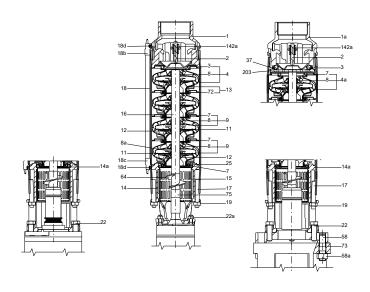
Pump Data		Motor Data	
Maximum liquid temperature:	104 °F	Rated power - P2:	15 HP
Product number:	12B63010	Rated voltage:	208-220-230 V
		Mains frequency:	60 Hz
		Enclosure class:	IP68
		Insulation class:	F
		Motor protection:	NONE
		Thermal protection:	external
		Motor type:	MS6000
		Eta 1/1:	82.5 %



Submittal Data







Materials:

Impeller: Stainless steel
Impeller: AISI 304
Impeller: EN 1.4301
Motor: Stainless steel
Motor: DIN W.-Nr. 1.4301

Motor: AISI 304



Date: 27/07/2021

Qty. | Description

1 **85S150-10**



Note! Product picture may differ from actual product

Product No.: 12B63010

Multi-stage submersible pump for raw water supply, groundwater lowering and pressure boosting. The pump is suitable for pumping clean, thin, non-agressive liquids without solid particles or fibres.

Phase: The motor is a 3-phase motor with sand shield, liquid-lubricated bearings and

pressure equalizing diaphragm.

Liquid:

Pumped liquid: Water

Maximum liquid temperature: 104 °F

Max liquid t at 0.15 m/sec: 104 °F

Selected liquid temperature: 68 °F

Density: 62.29 lb/ft³

Technical:

Pump speed on which pump data are based: 3450 rpm

Rated flow: 88.1 US GPM
Rated head: 380.6 ft
Actual impeller diameter: 3.49 in
Shaft seal for motor: SIC/SICNBR
Curve tolerance: ISO9906:2012 3B

Motor version: T40

Materials:

Pump: Stainless steel

EN 1.4301 AISI 304

Impeller: Stainless steel

EN 1.4301 AISI 304

Motor: Stainless steel

DIN W.-Nr. 1.4301

AISI 304

Installation:

Maximum ambient pressure: 870.23 psi Pump outlet: 3"NPT Motor diameter: 6 inch

Electrical data:



Date: 27/07/2021

Qty. | Description

Motor type: MS6000 Rated power - P2: 15 HP Mains frequency: 60 Hz

Rated voltage: 3 x 208-220-230 V

Service factor: 1.15

Rated current: 53.5-50.5-49.5 A Starting current: 390-440-480 %

230 A

Cos phi - power factor: 0.85-0.83-0.82 Rated speed: 3430-3460-3470 rpm

Motor efficiency at full load: 82.5 % Start. method: direct-on-line

Enclosure class (IEC 34-5): IP68
Insulation class (IEC 85): F
Built-in temp. transmitter: yes
Motor No: 96166184
Windings: Enamelled

Others:

DOE Pump Energy Index CL: 0.85

ErP status: EuP Standalone/Prod.

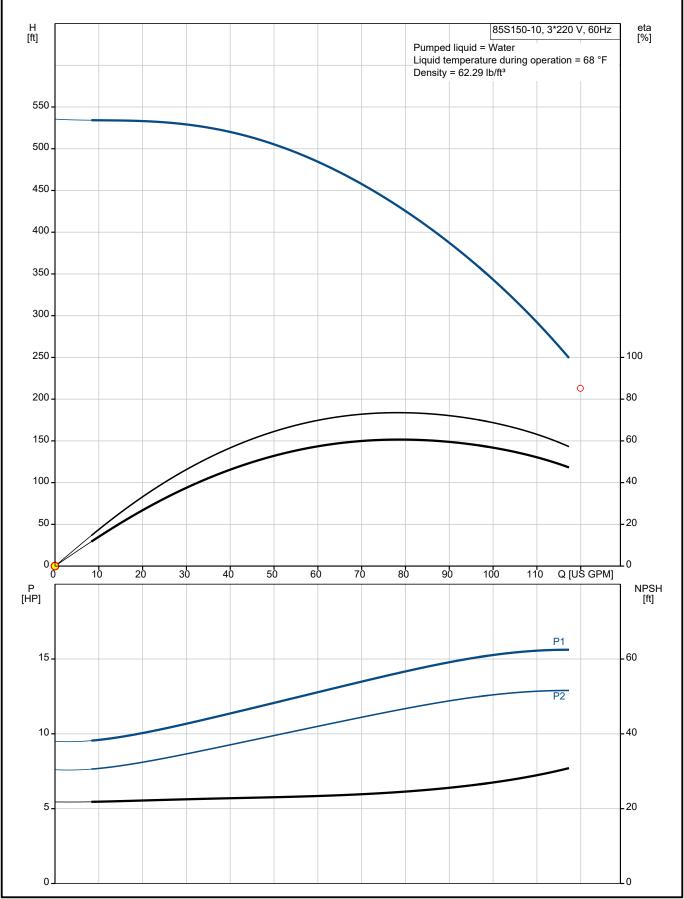
Net weight: 150 lb
Gross weight: 207 lb
Shipping volume: 7.06 ft³
Country of origin: US

Custom tariff no.: 8413.70.2004



Date: 27/07/2021

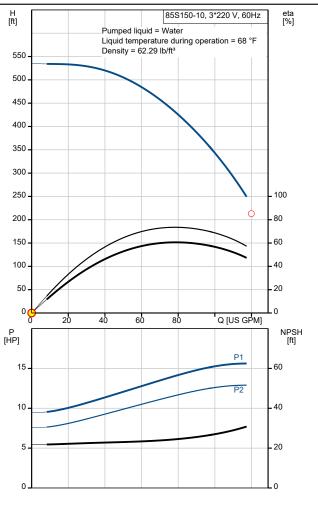
12B63010 85S150-10 60 Hz





Date: 27/07/2021

Description	Value
General information:	
Product name:	85S150-10
Product No:	12B63010
EAN number:	5700391308727
Technical:	
Pump speed on which pump data are based:	3450 rpm
Rated flow:	88.1 US GPM
Rated head:	380.6 ft
Actual impeller diameter:	3.49 in
Stages:	10
Impeller reduc.:	NONE
Shaft seal for motor:	SIC/SICNBR
Curve tolerance:	ISO9906:2012 3B
Model:	В
Valve:	YES
Motor version:	T40
Materials:	
Pump:	Stainless steel
Pump:	EN 1.4301
Pump:	AISI 304
Impeller:	Stainless steel
Impeller:	EN 1.4301
Impeller:	AISI 304
Motor:	Stainless steel
Motor:	DIN WNr. 1.4301
Motor:	AISI 304
Installation:	71101 004
Maximum ambient pressure:	870.23 psi
Pump outlet:	3"NPT
Motor diameter:	6 inch
Liquid:	O IIIOII
Pumped liquid:	Water
Maximum liquid temperature:	104 °F
Max liquid t at 0.15 m/sec:	104 °F
Selected liquid temperature:	68 °F
Density:	62.29 lb/ft³
Electrical data:	02.20 lb/lt
Motor type:	MS6000
Applic. motor:	GRUNDFOS
Rated power - P2:	15 HP
KVA code:	G
Mains frequency:	60 Hz
Rated voltage:	3 x 208-220-230 V
Starter:	2 1/2
Service factor:	1.15
Rated current:	53.5-50.5-49.5 A
Starting current:	390-440-480 %
Starting current:	230 A
Cos phi - power factor:	0.85-0.83-0.82
Rated speed:	3430-3460-3470 rpm
Motor efficiency at full load:	82.5 %
Start. method:	direct-on-line
Enclosure class (IEC 34-5):	IP68 F
Insulation class (IEC 85):	
Motor protec:	NONE
Thermal protec:	external
Built-in temp. transmitter:	yes





Date: 27/07/2021

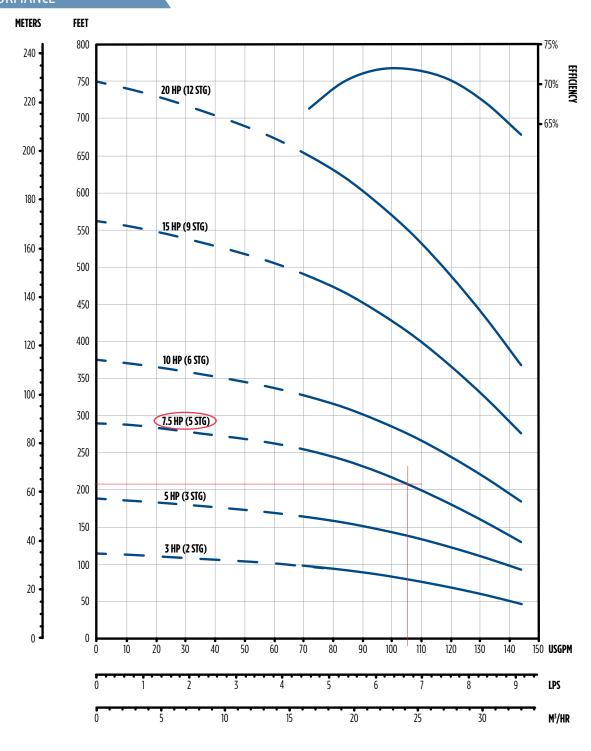
Description	Value
Motor No:	96166184
Cable number:	96163476
Windings:	Enamelled
Controls:	
Heater:	K76
Others:	
DOE Pump Energy Index CL:	0.85
ErP status:	EuP Standalone/Prod.
Net weight:	150 lb
Gross weight:	207 lb
Shipping volume:	7.06 ft ³
Sales region:	Namreg
Country of origin:	US
Custom tariff no.:	8413.70.2004

SUBMERSIBLE TURBINE PUMPS



5" STS SERIES - 120 GPM

PERFORMANCE



RECOMMENDED OPERATING RANGE

Appendix 10.6 Water Rights

Water Rights Water Right Self-Assessment

Water Right Self-Assessment Form for Water System Plan

Mouse-over any link for more information. Click on any link for more detailed instructions.

Water Right Permit, Certificate, or Claim # *If water right is	WFI Source # If a source has multiple water rights, list each water right on	Qa= A	Existing Wa Intaneous Flow Ra Innual Volume All This includes who	ate Allowed (GPI owed (Acre-Fee	t/Year)	Qi = Max Insta Qa = Ann	Yontaneous Flow ual Volume Wi	<u>ear</u>	•		ear Forecasted (determine This includes wh	d from WSP)		<u>20-Y</u>	(determine This includes wh	d from WSP)	
interruptible,	separate line	<u>Primary</u>	Non-Additive	<u>Primary</u>	Non-	Total Qi	<u>Current</u>	Total Qa	<u>Current</u>	Total Qi	<u> 10-Year</u>	Total Qa	10-Year	Total Qi	20-Year	Total Qa	<u> 20-Year</u>
identify limitation		<u>Qi</u>	<u>Qi</u>	<u>Qa</u>	Additive Qa	Maximum	Excess or	Maximum	Excess or	Maximum	Forecasted	Maximum	<u>Forecasted</u>	Maximum	<u>Forecasted</u>	Maximum	<u>Forecasted</u>
in yellow section		Maximum	Maximum	Maximum	Maximum	Instantaneous	(Deficiency)	Annual	(Deficiency)	Instantaneou	Excess or	Annual	Excess or	Instantaneou	Excess or	Annual	Excess or
below		Rate Allowed	Rate	Volume	Volume	Flow Rate	<u>Qi</u>	Volume	<u>Qa</u>	s Flow Rate	(Deficiency)	Volume	(Deficiency)	s Flow Rate	(Deficiency)	Volume	(Deficiency)
			Allowed	Allowed	Allowed	Withdrawn		Withdrawn		in 10 Years	<u>Qi</u>	in 10 Years	<u>Qa</u>	in 20 Years	<u>Qi</u>	in 20 Years	<u>Qa</u>
1 G2-00887C	S01, AFM952	160 gpm		39.0 ac-ft/yr		125 gpm	35 gpm	14.4 ac-ft/yr	24.6 ac-ft/yr	125 gpm	35 gpm	19.9 ac-ft/yr	19.1 ac-ft/yr	125 gpm	35 gpm	28.0 ac-ft/yr	11.0 ac-ft/yr
2 G2-22984C	S02, AFM953	160 gpm		19.0 ac-ft/yr		160 gpm	0 gpm	19.0 ac-ft/yr	0 ac-ft/yr	160 gpm	0 gpm	19.0 ac-ft/yr	0 ac-ft/yr	160 gpm	0 gpm	19.0 ac-ft/yr	0 ac-ft/yr
3G2-25619C ^{1,2}	S01& S02	80 gpm	320 gpm		58 ac-ft/yr	80 gpm	35 gpm ³	8.6 ac-ft/yr	16.0 ac-ft/yr ³	80 gpm	35 gpm ³	19.2 ac-ft/yr	(0.1)ac-ft/yr ³	80 gpm	35 gpm ³	34.9 ac-ft/yr	(23.9) ac-ft/yr ³
4																	
5																	
6																	
	TOTALS =	400 gpm		58.0 ac-ft/yr		365 gpm	35 gpm	42.0 ac-ft/yr	16.0 ac-ft/yr	365 gpm	35 gpm	58.1 ac-ft/yr	(0.1) ac-ft/yr	365 gpm	35 gpm	81.9 ac-ft	(23.9) ac-ft/yr
Column Identifie	ers for Calculations:	А		В		С	=A-C	D	=B-D	E	= A-E	F	=B-F	G	=A-G	Н	=B-H

¹ G2-25619 issued as primary right for 80 gpm - the balance of 320 gpm issued as supplemental (non-additive) to Ground Water Certificates G2-00887 and G2-22984.

³ Non-additive.

PENDING WATER	RIGHT APPLICATIONS: lo	entify any water right a	pplications that have be	en submitted to Ecology.					
Application	New or Change	Quantities Requested							
Number	Application?	Date Submitted	Primary Qi	Non-Additive Qi	Primary Qa	Non-Additive Qa			
G2-291050	New	11/7/1994	0	400 gpm	58.0 ac-ft/yr				

INTERTIES: Systems receiving	wholesale wate	r complete this	section. Wholesa	aling systems mu	ıst include wate	er sold through	intertie in the cu	urrent and forec	asted source pro	duction column	s above.				
Name of Wholesaling System Providing Water Quantities Allowed In Contract Date of Current quantity purchased through			ntertie	Forec	10-Year Forecasted Purchase Forecasted quantity purchased through intertie 20-Year Forecasted Purchase Forecasted quantity purchased through intertie										
System Floriding Water	<u>Maximum</u>	Maximum	Contract	Maximum	Current	<u>Maximum</u>	Current	Maximum	Future Excess	<u>Maximum</u>	<u>Future</u>	<u>Maximum</u>	<u>Future</u>	<u>Maximum</u>	<u>Future</u>
	<u>Qi</u> Instantaneous	<u>Qa</u> Annual		<u>Qi</u> Instantaneous	Excess or (Deficiency)	<u>Qa</u> Annual	Excess or (Deficiency)	<mark>Qi</mark> 10-Year	<u>or</u> (Deficiency)	<u>Qa</u> 10-Year	Excess or (Deficiency)	<u>Qi</u> 20-Year	Excess or (Deficiency)	<u>Qa</u> 20-Year	Excess or (Deficiency)
	Flow Rate	Volume		Flow Rate	Qi	Volume	Qa	Forecast	Qi	Forecast	Qa	Forecast	Qi	Forecast	Qa
2															
TOTALS =															

Column Identifiers for Calculations: A B C = A-C D = B-D E = A-E F = B-F G = A-G H = B-H

INTERRUPTIBLE WATER RIGHTS: Identify limitations on any water rights listed above that are interruptible.

ADDITIONAL COMMENTS:

Water Right #	Conditions of Interruption	Time Period of Interruption
1		
2		

² Total annual withdrawal under G2-00887C, G2-22984C, and G2-25619C shall not exceed 58 ac-ft/yr.

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

ERTIFICATE NUMBER PERMIT N	IUMBER	APPLICATION NUMBER	PRIOR	RITY DATE
G 2-00867 C 9	334	9892	Ne	vember 19, 1968
AME				
AR WEST INDUSTRIES, INC.	(CITY)		(STATE)	(ZIP CODE)
747 Middle Waterway	Tacoma	1 2 2 2	Washington	98421
of a right to the use of the public subject to the provisions contained use of said waters has been perfect firmed by the Department of Ecolo	l in the Permit issued ted in accordance wit gy and entered of rec	I by the Departmenth the laws of the Soord as shown.	t of Ecology, an	nd that said right to th
OURCE	PUBLIC WATER TO	BE APPROPRIATED		
well				
BIBUTARY OF (IF SURFACE WATERS)				
AXIMUM CUBIC FEET PER SECOND	MAXIMUM GALLONS PER	160	MAXIMUM ACRE-FEE	T PER YEAR
60 gpm; 39 acre-feet per ye	ar community	iomestic supply	continu	ously
			1 1 1 1	
			Military Lab	
		1.10		
The state of the	ON STREET, STREET, AND	E PULICIPATION	THE REAL PROPERTY.	
PPROXIMATE LOCATION OF DIVERSION/WITHD		/ERSION/WITHDRAWA	L	
70 feet west and 1200 feet	north of east que	arter corner of	Sec. 1	
			The state of the s	
	TOTAL CONTRACTOR OF THE PARTY O			***************************************
DOCATED WITHIN (SMALLEST LEGAL SUBDIVISION	ONI	TOWNSHIP N. RANGE.	(E. OR W.) W.M. W.R.	W mand m
OT BLOCK OF GIVE NAME OF PLAT	RECORDED P	LATTED PROPERTY		

Plats of Timberline Village, Timberline Village Division No. 2, Timberline Village Division No. 3 and Timberline Village Division No. 4; ALL in E¹2, Sec. 1, T. 13 N., R. 9 E.W.M.

The well shall be equipped with an access port.

As provided under RCW 43.21.130, 90.44.250, and 90.44.020, a master meter shall be installed in this system to measure the total amount of the withdrawal.

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 a	nd the seal of this office at Olympic	, Washington, this	11th day
of	October	19.74		

JOHN A. BIGGS, Director Department of Ecology

ENGINEERING DATA

R. JERRY BOLLEN, Assistant Director

FOR COUNTY USE ONLY

STATE OF WASHINGTON DEPARTMENT OF ECOLOGY

CERTIFICATE OF WATER RIGHT

	ace water amend	d in accordance with the p iments thereto, and the ru d in accordance with the p ments thereto, and the ru	les and regulations of the	Department of	Ecology.)
PRIORITY DATE July 15, 1974		TION NUMBER	PERMIT NUMBER G 2-22984 P		CERTIFICATE NUMBER G 2-22984 C
(1)////	4				
FAR WEST, INDUSTRIE	s, INC.				
Box 1444	. [-3]	(CITY) Tacoma	Washi	(STATE)	(ZIP CODE) 98401
of a right to the use subject to the provise	of the public with one contained is been perfected	vaters of the State of in the Permit issued d in accordance wit	of Washington as he I by the Departmer th the laws of the S	rein define it of Ecolo	f the Department of Ecology d, and under and specifically gy, and that said right to the ishington, and is hereby con-
		PUBLIC WATER TO	BE APPROPRIATED		
source well					
TRIBUTARY OF (IF SURFACE V	/ATERS)			70000-20-20	odns Alexandra and Alexandra a
MAXIMUM CUBIC FEET PER SE	COND	MAXIMUM GALLONS PER	R MINUTE 160	MAXIMUM A	CRE-FEET PER YEAR 19
QUANTITY, TYPE OF USE, PER 19 acre-feet per y		community	domestic supply	con	tinuously
Miles and the second of the se		LOCATION OF DIVE	RSION/WITHDRAWAL		
1,000 feet west an	d 1200 feet	north from the	East Ouarter co	ner of S	ection 1.
1,000 ICCC WCDC III	1200 1000 1				
	and the state of t				
-					T
LOCATED WITHIN (SMALLEST	LEGAL SUBDIVISION	SECTION 1	TOWNSHIP N. RANGE,	(E. OR W.) W.M.	w.R.I.A. COUNTY 26 Lewis
THE PARTY OF THE P		RECORDED P	LATTED PROPERTY		
LOT Tract	вьоск		OF (GIVE NAME OF P		
A	LEGAL DESC	RIPTION OF PROPER			
with the easterly thence west 444 fe said highway; then	3, 7, 8, and M that part of oint of inter boundary of et; thence no ce northeast EFROM the Na	d 11 and the SE of said SE NE of said SE NE of the said section; the said section; the said section; the said section said tional Park High	ANE'4, Sec. 1, To described as for southerly bound hence south alon , more or less, highway to the hway; AND EXCEPT	13 N., llows: dary of t ng said s to the s point of a tract	R. 9 E.W.M.; he National Park Highway ection line 607.2 feet; outherly boundary of beginning; of land situated in

AND the N2SE4, Sec. 1, T. 13 N., R. 9 E.W.M.; EXCEPTING THEREFROM the National Park Highway.

beginning at Monument 121 which is a point on the northerly line of PSH #5 and the east line

of said Sec. 1, north 0°43' east 973.7 feet from the east quarter corner of said Sec. 1; thence continuing north 0°43' east 466.3 feet; thence north 89°17' west 200 feet to the true place of beginning; thence south 48°03' west 170 feet to the center line of Coal Creek; thence north 12°47' west along said center line of Coal Creek 143.5 feet; thence north

Being the land included in and around the plats of Timberline Village, recorded plats 1 through 5 and Timberline Village 5 Acre Tracts ALL in Sec. 1, T. 13 N., R. 9 E.W.M.

48°03' east 100 feet; thence south 41°57' east 125 feet to the place of beginning.

The access port as required on your permit shall be maintained at all times.

A suitable measuring device shall be installed and maintained in accordance with WAC 508-64-020 through WAC 508-64-040.

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

Olympia

Washington, this9th day

of Mar

.., 19.79

WILBUR G. HALLAUER, DIRECTOR

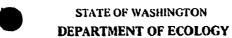
Department of Ecology

ENGINEERING DATA

OK PMS

E.W. ASSELSTINE, Regional Manager

FOR COUNTY USE ONLY



CERTIFICATE OF WATER RIGHT

Surface Wa	ter (Issued in accordantion amendments theret	ce with the pro- o, and the rules	visions of Chapt and regulations	ter 117, La s of the De	ws of Washingto partment of Eco	on for 191 plogy.)	/, and
X Ground Wa	ter (Issued in accordan	ce with the pro o, and the rules	visions of Chapt and regulations	ter 263, La s of the Dep	ws of Washingto partment of Eco	n for 194 ology.)	5, and
PRIORITY DATE June 13, 1980	G 2-25619		PERMIT NUM	BER 25619 P			ATE NUMBER 2-25619 C
NAME							
FARWEST INDUSTRIES, INC	. (TIMBERLINE	/ILLAGE)					
ADDRESS' (STREET)		(CITY)			(STATE)		(ZIP CODE)
P.O. Box 700	Sumn			Washin			98390
This is to certify that the hof a right to the use of the subject to the provisions couse of said/waters has been firmed by the Department of	public waters of tentained in the Per perfected in accordances	the State of mit issued i rdance with	Washington by the Depo	n as here artment f the Sta	ein defined, of Ecology	and und , a <mark>nd t</mark> h	ler and specifically at said right to the
	PUBLIC	WATER TO B	E APPROPRIA	ATED			
SOURCE							
Two wells			 				
TRIBUTARY OF (IF SURFACE WATERS)							
MAXIMUM CUBIC FEET PER SECOND	MAXIMUM	GALLONS PER N	MINUTE		MAXIMUM ACRE		YEAR
		400			58	3	
QUANTITY, TYPE OF USE, PERIOD OF							•
58 acre-feet per year	Comm	unity dom	estic sup	bTA	Cont	lnuous.	rà
	(42	1 Recreat	ional lot	s)			
							
	·					<u> </u>	
	LOCATIO	N OF DIVER	SION/WITHD	RAWAL			· · · · · · · · · · · · · · · · · · ·
APPROXIMATE LOCATION OF DI							
#1-970 feet west and 1	,200 feet north	; #2-1,00	0 feet we	st and	1,200 fe	et nor	th - Both from
East Quarter Corner, S	ection 1						
LOCATED WITHIN ISMALLEST LEGAL	SUBDIVISION)	SECTION	TOWNSHIP N.		E. OR W.) W.M.	W.R.I.A.	COUNTY
SE½ NE¾		1	13	9	E	26	Lewis
		ECORDED PL	ATTED PROP				
L or Tract A	BLOCK		OF (GIVE NAI Timber)	ME OF PLA	AT OR ADDITI	on) ision	3
	GAL DESCRIPTION	OF PROPERT					

Real estate subdivision one through six Timberline Village located in Section 1, Township 13 North, Range 9 East W.M. in Lewis County WA.

(SEE REVERSE SIDE)

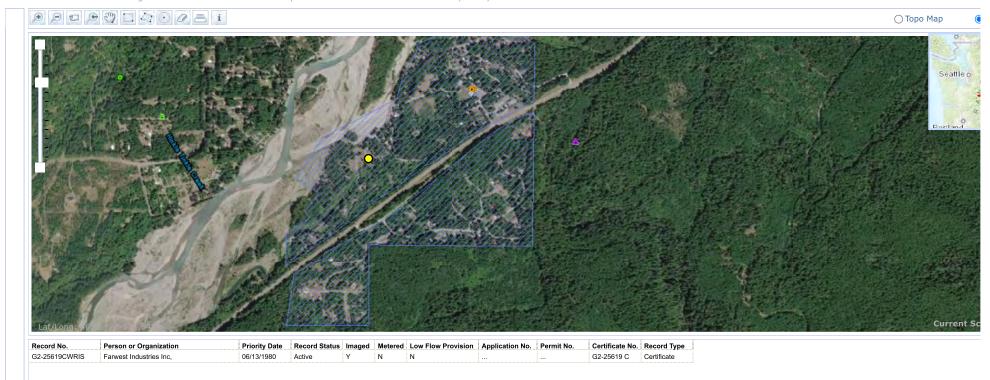
PROVISIONS

Ground Water Certificates G 2-20887 C and G sexceed 58 acre-feet per year."	2-22984 C. Total annual withdrawal shall not
The access port shall be maintained at all to	imes on the well (s).
•	
	•
	·
	•
	·
· • -	•.
·•	
	ereby 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 90.14.180.	ect to relinquishment for nonuse of water as provided in RCW
Given under my hand and the seal of this of	ffice at Olympia Washington, this 26th day
of September 19 84	
China Comment	DONALD W. MOOS, Director Department of Ecology
ENGINEERING DATA	
ок. Д	Joan K. Thomas, Regional Manager
FOR CO	OUNTY USÉ ONLY
•	



Water Resources Explorer

Water Resources Water Right Information GIS Data Help Contact Us Disclaimer Privacy Policy



Ecology Home | Help | Report a Problem | Data Disclaimer | Privacy Policy Copyright © Washington State Department of Ecology 2021. All Rights Reserved.



APPLICATION FOR PERMIT

TO APPROPRIATE PUBLIC WATERS OF THE STATE OF WASHINGTON

☐ SURFACE WATER ☐ GROUND WATER

\$10.00 MINIMUM STATUTORY EXAMINATION FEE REQUIRED WITH APPLICATION

(GRAY BOXES FOR OFFICE USE ONLY)

APPLICATION NO. APPLICANT'S NAME - PLEASE PRINT FARMEST INCL. (TIMBERINE VILLAGE) Robert J. Mitchell Other Tel. Other Tel.
FARWEST INCLUSTRIES INC. (TIMBERLINE VILLAGE) Bus. Tel. Home Tel.
PARWEST INDUSTRIES INC. L'TIMBERLINE VILLAGE) HOMETEL
P-limat Mitalian II
ADDRESS (STREET) (CITY) · (STATE) (ZIP CODE)
1113 FIRCREST DRIVE TACOMA WA 98466
DATE & PLACE OF INCORPORATION IF APPLICANT IS A CORPORATION
1. SOURCE OF SUPPLY
IF SURFACE WATER IF GROUND WATER
SOURCE (NAME OF STREAM, LAKE, SPRING, ETC.) (IF UNNAMED, SO STATE) SOURCE (WELL, TUNNEL, INFILTRATION TRENCH, ETC.)
E VEI'S
SIZE AND DEPTH WE #1-8" x 90 WE #2 - 8" x 63
A cycocortostar contractor
12/12/94
USE TO WHICH WATER IS TO BE APPLIED (DOMESTIC SUPPLY, IRRIGATION, MINING, MANUFACTURING, ETC.)
Community Domestic Supply Mulliple
ENTER QUANTITY OF WATER CUBIC FEET PER SECOND (CFS) GALLONS PER MINUTE (GPM) ACRE FEET PER YEAR
58 Addition
Existing Cent # G 2-22984C # G2-25614C for a total of 58 Acrefact
TIMES DURING YEAR WATER WILL BE REQUIRED
Continuously
IF IRRIGATION, NUMBER OF ACRES IF DOMESTIC USE, NUMBER OF IF MUNICIPAL USE, ESTIMATED
IF IRRIGATION, NUMBER OF ACRES IF DOMESTIC USE, NUMBER OF UNITS BY TYPE, E.G. 1-HOME, I-MOBILE HOME, 2-CAMPSITES, ETC. IF MUNICIPAL USE, ESTIMATED POPULATION 20 YEARS FROM TODAY
DATE PROJECT WAS OR WILL BE STARTED DATE PROJECT WAS OR WILL BE COMPLETED
N A N A
3. LOCATION OF POINT OF DIVERSION/WITHDRAWAL BA. IF IN PLATTED PROPERTY
LOT DUDON DESCRIPTION OF DUST OF ADDITIONS DESCRIPTION
Timberline Village Dio 3 1 13N 9E MARK THE POINT(S) OF WITHDRAWAL OR DIVER
B. IF NOT IN PLATTED PROPERTY
ON ACCOMPANYING SECTION MAPS, ACCURATELY MARK AND IDENTIFY EACH POINT OF DIVERSION, SHOW NORTH-SOUTH AND EAST-WEST DISTANCES FROM NEAREST SECTION CORNER OR PROPERTY CORNER
also, enter below the distances from the nearest section or property corner to the diversion or withdrawal. 1-970 feet west & 1200' NORTH; #2-1000 feet west & 1200 feet north of East 14 corn of
LOCATED WITHIN (SMALLEST LEGAL SUBDIVISION) SECTION TOWNSHIP N. RANGE (E. OR W.) W.M. COUNTY
SEYY NEYY 1 13 9E LEWIS
4. DO YOU OWN THE LAND ON WHICH THIS SOURCE IS LOCATED. IF NOT, INSERT NAME & ADDRESS OF OWNER
YES
5. LEGAL DESCRIPTION OF PROPERTY ON WHICH WATER IS TO BE USED
ATTACH A COPY OF THE LEGAL DESCRIPTION OF THE PROPERTY (ON WHICH THE WATER WILL BE USED) TAKEN FROM A REAL ESTATE CONTRACT, PROPERTY DEED OR TITLE INSURANCE POLICY. OR, COPY CAREFULLY IN THE SPACE BELOW.
REAL ESTATE SUDDIVISIONS ONE through SIX TIMBERLINE VILLAGE
located in Section 1, Two 13 North, RANGE 9 EAST W.M.
TOCATED IN SECTION , TWP IS NORTH, KANGE I EAST W. M.

WHAT IS YOUR INTEREST IN THE PROPERTY ON WHICH THE WATER IS TO BE USED (PROPERTY OWNER, LESSEE, CONTRACT PURCHASER, ETC.) PROPERTY OWNER / WATER DURING
ARE THERE ANY EXISTING WATER RIGHTS RELATED TO THE LAND ON WHICH THE WATER IS TO BE USED (INCLUDING WATER PROVIDED BY IRRIGATION DISTRICTS OR DITCH COMPANIES.) YES NO
IF YES, FROM WHAT SOURCE (i.e. SURFACE OR GROUND WATER) AND UNDER WHAT AUTHORITY
Ground Water Cent # @ 2-256190 \$ 62-22984
6. DESCRIPTION OF SYSTEM PROPOSED OR INSTALLED
(FOR EXAMPLE: SIZE OF PUMP, CAPACITY OF PUMP, PUMP MOTOR HORSE POWER, PIPE DIAMETER, NUMBER OF SPRINKLERS, ETC.
WEII # 1 - 15 hp submersible pump - 205 9pm WEII #2 - 10 hp
submensible - 140 apm . Distribution system is 2,"4", 6"
And 8" pipes. There ARE 2-30,000 steel RESERVOIRS
And 71/2 hp booston pump - 145 gpm to service in
3.
upper pressure zone
REMARKS
7. Expansion of annual withdrawal to cover growth
AS programed in Water Comprehensive Plan
8.
COMPLETE THIS SECTION ONLY IF THIS APPLICATION INCLUDES IRRIGATION AS A USE
IN ORDER TO IMPLEMENT THE PROVISIONS OF INITIATIVE MEASURE NUMBER 59, THE FAMILY FARM WATER ACT WHICH WAS PASSED BY THE VOTERS ON
NOVEMBER 3, 1977, WE MUST ASK THE FOLLOWING QUESTIONS: DOES THE TOTAL NUMBER OF ACRES IN WHICH YOU HAVE CONTROLLING INTEREST IN THE STATE OF WASHINGTON EXCEED 2000 ACRES FOR THE FOLLOW-
ING THREE CATEGORIES: 1. LANDS THAT ARE BEING IRRIGATED UNDER WATER RIGHTS ACQUIRED AFTER DECEMBER 8, 1977. YES NO
2. LANDS THAT MAY BE IRRIGATED UNDER APPLICATIONS NOW ON FILE WITH THE DEPARTMENT OF ECOLOGY. YES NO
3. LANDS THAT MAY BE IRRIGATED UNDER THIS APPLICATION. YES UNDER THE NO UNDER THIS APPLICATION.
IF 10 ACRE-FEET OR MORE OF WATER IS TO BE STORED AND/OR IF THE WATER DEPTH WILL BE 10 FEET OR MORE AT THE DEEPEST POINT, A STORAGE PERMIT MUST BE FILED IN ADDITION TO THIS PERMIT, THESE FORMS CAN BE SECURED, TOGETHER WITH INSTRUCTIONS, FROM THE DEPARTMENT OF ECOLOGY.
SIGNATURES
DIRA WALL
APPLICANT'S SIGNATURE
FARWEST THOUSTRES THE BY JULY V.P.
LEGAL LANDOWNERS NAME (PLEASE PRINT) LEGAL LANDOWNER'S SIGNATURE (OWNER OF PROPERTY DESCRIBED IN ITEM NUMBER 5) 1113 FIRCREST DR
TACOMA, WA 98466
LEGAL LANDOWNER'S ADDRESS
FOR OFFICE USE ONLY
STATE OF WASHINGTON
ss.
DEPARATMENT OF ECOLOGY J
This is to certify that I have examined this application together with the accompanying maps and data,
and am returning it for correction or completion as follows:
In order to retain its priority date, this application must be returned to the Department of Ecology, with
corrections, on or before
Witness my hand thisday of

Department of Ecology

Appendix 10.7 Water Quality Monitoring Program & CCR

Consumer Confidence Report
Lead and Copper Monitoring Plan
Coliform Monitoring Plan
Water Quality Monitoring Schedule
Water Quality Samples

Consumer Confidence Report

We are pleased to present your 2022 Annual Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day. In 2022, overall drinking water quality met or exceeded all drinking water standards.

Our staff routinely monitors for contaminants in your drinking water in accordance with Federal, State or local laws. We encourage you to take a few moments and review the enclosed table showing the results of the water quality monitoring for January 1 to December 31, 2022. We would like you to share, our confidence in your drinking water.

We welcome your questions, concerns, and observations. If you would like to receive more information about current water quality issues, make comments, or ask questions, please contact our Planning and Compliance Department. Email PUDPlanning@thurstonpud.org or call our office at (360) 357-8783 option 3 between 8 a.m. & 4:30 p.m. Monday - Friday.

We take pride in keeping you informed about the quality of your water and the service we provide.



How To Contact Us

Office Address:

1230 Ruddell Road SE Lacey, WA 98503

Phone Number (s):

(360) 357-8783 or 1 (866) 357-8783

Fax Number:

(360) 357-1172

Email:

PUDPlanning@thurstonpud.org

Website:

www.thurstonpud.org

Conservation Saving Water can Be Simple

What is Water Conservation? For many, it is as easy as buying a water efficient appliance or turning off the faucet while brushing your teeth, however, water conservation is more complex than that. Water conservation is any beneficial reduction in water use, loss, or waste. We can all do our part in using our water more efficiently; small changes can make a large impact. In addition to saving money on your utility bill, water conservation will help protect this precious natural resource.

For more information about water conservation please visit our website.

Get Involved

Commission meetings are held the second and fourth Tuesday of every month.

The meetings start at 5:00 p.m. and are open to the public.

Check out our website at www.thurstonpud.org.

WATER USE EFFICIENCY ANNUAL REPORT

Thurston PUD is required to send you a Water Use Efficiency Report on an annual basis. To comply with this State law, Thurston PUD approved a new conservation goal October 2020 for your water system. The goal is as follows:

BETWEEN 2021 & 2031, REDUCE AND/OR MAINTAIN THE ANNUAL AVERAGE DEMAND PER CONNECTION, FOR ALL GROUP A SYSTEMS, TO NO MORE THAN 250 GALLONS PER DAY.

The Timberline Village water system is fully metered and the total water produced for 2022 was 22,109,695 gallons. The system had 25.28 gallons per minute leak loss for the year. In 2022, the average household used 85 gallons per day meeting the PUD's current conservation goal.

A copy of the report filed with the State is available on our website. To receive a copy by mail, please call our office at (360) 357-8783.

ADDITIONAL HEALTH INFORMATION

Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and in your case wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

LEAD AND DRINKING WATER What you need to know

In Washington State, lead in drinking water comes primarily from materials and components used in household plumbing. The more time water has been sitting in pipes, the more dissolved metals, such as lead, it may contain. Elevated levels of lead can cause serious health problems, especially in pregnant women and young children.

To help reduce potential exposure to lead, for any drinking water tap that has not been used for 6 hours or more, flush water through the tap until the water is noticeably colder before using for drinking or cooking. You can use the flushed water for watering plants, washing dishes, or general cleaning. Only use water from the cold-water tap for drinking, cooking, and especially for making baby formula. Hot water is likely to contain higher levels of lead. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water is available form EPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at http://www.epa.gov/ safewater/lead.

CROSS CONNECTION CONTROL Protecting the Water You Drink

A cross connection is a point in a plumbing system where the potable water supply is connected to a non-potable source. TPUD is committed to ensuring your water remains clean and safe. The Washington State Department of Health requires backflow prevention assemblies on all commercial and some residential properties that are connected to the public water system. Common potential cross connection found include: Hose bibs, Irrigation sprinkler systems, Livestock watering and/or animal water troughs, Swimming pools, Hot tubs, Fire Sprinkler systems, Wash basins or service sinks.

Annual backflow assembly testing is required by state Department of Health rules (WAC 246-290-490) to ensure the assembly is in good working condition. We rely on approved backflow prevention assemblies to protect the public water supply.

For more information about cross connection and backflow please visit our website www.thurstonpud.org

ANNUAL WATER QUALITY REPORT: Timberline Village 628 - ID# 88388B

Your water comes from two groundwater wells which are 63 and 89 feet deep and includes a 30,000 gallons of storage capacity. The system currently serves 286 connections.

Source Susceptibility Rating Treatment Description

S01 AFM952 Moderate None

S02 AFM953

Water Quality Data

The table below lists all the drinking water contaminants that we detected during the 2022 calendar year. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk.

We test for Primary and Secondary Contaminants both regulated and unregulated, as required by the EPA and the State Department of Health. The regulated and unregulated analysis (contaminants) tests are commonly referred to as Inorganic Chemical (IOC), Volatile Organic Chemical (VOC) and Synthetic Organic Chemical (SOC) tests.

Required Testing (last testing date):

Monthly Bacteriological Volatile Organic Contaminants – 2022 Herbicide and/or Pesticide – 2016

Annual Nitrate Radionuclide – 2021 PFAS – 2021

Inorganic Contaminants – 2021 Lead & Copper – 2021

PRIMARY CONTAMINANTS

Microbiological	MCLG	MCL	Your Water Range	Compliant(Y/N)	Typical Sources
Total Coliform Bacteria	N/A	TT	0	Y	Naturally present in the environment.
Inorganic Contaminants	MCLG	MCL	Your Water	Compliant(Y/N)	Typical Sources
Nitrate (ppm)	10	10	S01 <0.20 SO2 <0.20	Y	Runoff from fertilizer use
Lead and Copper Taken at Customer Taps	AL	No. of Homes Sampled	90 th Percentile Value	No. of Homes Exceeding AL	Typical Sources
Lead (ppb)	15	5	2	0	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	1.3	5	.981	1	Corrosion of household plumbing systems; erosion of natural deposits

Terms and Abbreviations Used:

ppm - parts per million **ppb** - parts per billion **N/A** - Not Applicable

ND - None Detected **TT** - Treatment Technique

Contaminant: A substance that impairs the quality of potable water and may create a hazard to public health.

MCLG (Maximum Contaminant Level Goal): the level of a contaminant in drinking water below which there is no know or expected risk to health. MCLGs allow for a margin of safety.

MCL (Maximum Contaminant Level): the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

AL (Action Level): the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

CONTAMINANTS WHICH MAY REASONABLY BE EXPECTED TO BE FOUND IN DRINKING WATER

In order to ensure that tap water is safe to drink, the EPA and/or the Washington board of health prescribes regulations which limit the amount of certain contaminants in water provided by public water systems.

All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It is important to remember that the presence of these contaminants does not necessarily pose a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also, come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

Source Protection Information

The Department of Health Office of Drinking Water has compiled Source Water Assessment Program (SWAP) data for all community water systems in Washington. SWAP data for your system is available online at https://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/SourceWater/SourceWater/SourceWater/

To ensure that tap water is safe to drink, the Department of Health and EPA prescribe regulations that limit



the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA)

and the Washington Department of Agriculture regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

Vulnerable Populations

Some people may be more vulnerable to contamination in drinking water than the general population. Immunocompromised persons such as persons with cancer 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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Thurston PUD Lead & Copper Sampling Collection Program

- Locate the system spreadsheet with the previous test results and addresses
 - K:\Field Staff\Testing\Lead and Copper\L&C Customer Addresses by System
 - Example: "141st Ave KPN 661 L&C 2018.xlsx"
 - Use Springbrook to confirm or obtain the current customer information for the sample sites.
- Using the customer information collected, update
 - K:\Field Staff\Testing\Lead and Copper
 - "L&C Customer Email Postcard List for merge.xlsx"
 - This has the system name, system id, account number, customer name, service address, mailing address, test schedule date, and email (if available).
 - Overwrite the previous information as this sheet is the working document that will reflect only the current systems and customers used to merge to the site letters and emails.
- One week before the beginning of the month when the testing is scheduled to happen, an email or letter is sent to the sample site customers See Letter 1.
 - Open "L&C Sample Site Letter and Email template.docx"
 - Update the email/letter with correct dates and system information.
 - Use mail merge for both emails and letters.
 - Email subject line is "Thurston PUD Lead & Copper Sampling in (month of testing)".
- Create the customer instruction sheet for field staff to deliver with sample bottle.
 - K:\Field Staff\Testing\Lead and Copper\Lead & Copper Forms,
 - L&C Test Form Merge.xlsx
 - From the L&C Customer Address file for the applicable water system, copy and paste the water system name/number, PWSID, account number and service address.
 - Update the "Test_Schedule_Date" field with correct testing date, always using the first of the testing month.
 - Open the "2018 L&C Resident Inst & Letter MERGE DOC.docx" file. See Letter 2
 - Select 'Yes' when the dialog box opens up asking if you want to use the data from the database.
 - Print all test forms and give to field staff for delivery.
 - Field staff pick-up sample bottles, the resident test sheet should be filed out. These sheets are given to Planning & Compliance staff for water system file.
- Once results are received from the lab, the testing customers are sent their results.
 - Update each of the system address list files with the test results.
 - If the customer included their email address on the test instruction sheet, update in spreadsheet. Results can be sent by email.
 - Using the "Updated2018_Customer Results Notice Merge.xlsx" file.
 - Update the 'Merge Sheet' with the applicable fields, save and close the file.
 - Open "2018 L&C Consumer Results Letter Merge DOH updated 7-2012.docx" See Letter 3
 - Select 'Yes' when the dialog box opens up asking if you want to use the data from the database.
 - 'Edit Recipients' selecting only the customers with email addresses
 - 'Finish & Merge' send email messages, subject line is "Lead & Copper Results
 Thurston PUD"
 - Go back to the 'Edit Recipients' and select only the customers without email addresses.

- 'Finish & Merge' print letters and mail out to customers.
- 'Edit Recipients' select all customers, and save notices as PDF's here K:\Field Staff\Testing\Lead and Copper\pb and cu results to customer.
- Once customer notices are sent, certification is sent to DOH via email. Forms are located in K:\Field Staff\Testing\Lead and Copper\LEAD & COPPER RULE
 - Open the "System merge to send cert.xlsx" sheet and update the system name and PWSID on the sheet for merge.
 - o Open "DOH NOTICE CERT 331-462-F_merged doc.docx"
 - Select 'Yes' to merge data from database.
 - Print all merged cert forms for signature.
 - PDF signed cert forms and save to K:\Field Staff\Testing\Lead and Copper\LEAD & COPPER RULE\CERTS SENT
 - Email certs and a copy of one customer result to DOH (david.sternberg@doh.wa.gov)

system ID acct no		acet no	service address	Date of	LEAD	COPPER	Scheduled			
system	טו	acct_no	service address	Report	AL 0.015	AL 1.3	date			
TIMBERLINE VILLAGE 628	88388 B	017980-000	141 COAL CREEK DRIVE, PACKWOOD	9/9/2021	0.0018	0.408	7/1/2021	Tier 3	1940	Unknown
TIMBERLINE VILLAGE 628	88388 B	018004-001	13807 US HIGHWAY 12, PACKWOOD	9/9/2021	<0.0010	0.141	7/1/2021	Tier 2	1992	Copper
TIMBERLINE VILLAGE 628	88388 B	017967-000	115 TRAILS END DRIVE, PACKWOOD	9/9/2021	<0.0010	1.553	7/1/2021	Other	1965	PVC
TIMBERLINE VILLAGE 628	88388 B	017584-000	107 VIEW PLACE, PACKWOOD	9/9/2021	<0.0010	<0.020	7/1/2021	Other	2009	Unknown
TIMBERLINE VILLAGE 628	88388 B	018032-000	181 SUMMIT DRIVE, PACKWOOD	9/9/2021	0.0021	0.215	7/1/2021	Tier 1	2001	Copper

Note: This water system doesn't contain any lead service lines

Tier 1 = Single Family Residence (SFR) Contain copper pipes with lead solder installed after December 31, 1982, or contain lead pipes

Tier 2 = Buildings or Multifamily Residence (MFR) Contain copper pipes with lead solder installed after December 31, 1982, or contain lead pipes

Tier 3 = SFR contain copper pipes with lead solder installed before January 1, 1983

If new site is needed - Review DOH publication 331-111 for guidelines

COLIFORM MONITORING PLAN (CMP)

Timberline Village 628 - Untreated System

System Information Plan Date: 12-2021

Water System Name Timberline Village	County Lewis		System I.D. Number 88388B	
Name of Plan Preparer Kim Gubbe Thurston PUD	Position Operations Water Purve		Daytime Phone # (360) 357-8783 ext. 125	
Source: DOH Source Number, Source Name, Well Depth, Pumping Capacity	S01 – Well #1 AFM952, permanent use, 89' depth first open interval 125 GPM S02 – Well #2 AFM953, permanent use, 63' depth first open interval 240 GPM			
Storage: List and Describe	60,000			
Treatment: Source Number & Process	None			
Pressure Zones: Number and name	One, water	system		
Population by Pressure Zone	Population:	700 Connection	s - Active: 281 Approved: 270	
Number of Routine Samples Requ Monthly by Regulation: One	ired	Number of Sample Sites Needed to Represent the Distribution System: Three		
Source Address / Location:	S01 and S02 – 107 Bearfoot Rd Packwood WA 98361 Tax ID 0105790			

Routine Sample Rotation Schedule

Month	Routine Site(s)	Month	Routine Site(s)
January	X-1	July	X-3
February	X-2	August	X-4
March	X-3	September	X-1
April	X-4	October	X-2
May	X-1	November	X-3
June	X-2	December	X-4

Level 1 and Level 2 Assessment Contact Information

Name Kim Gubbe	Office Phone: 360-357-8783 ext. 125 After Hours Phone: 360-688-0827
R4-3Address 1230 Ruddell Road SE, Lacey WA 98503	Email kgubbe@thurstonpud.org
Name Jim Campbell	Office Phone: 360-357-8783 ext. 120 After Hours Phone: 360-790-2662
Address 1230 Ruddell Road SE, Lacey WA 98503	Email jcampbell@thurstonpud.org

Laboratory Information

Laboratory Name	Office Phone #			
Water Management Laboratories Inc.	(253) 531-3121			
Address	After Hours #			
1515 80 th St. E. Tacoma, WA 98404	(253) 841-0732			
Hours of Operation				
Monday – Friday 8a.m 5p.m. Saturday 9a.m. – 12p.m.				
Emergency Laboratory Name	Office Phone #			
Thurston County Lab	360-867-2631			

Routine, Repeat, and Triggered Source Sample Locations

Location/Address for Routine Sample Sites	Location/Address for Repeat & Triggered Source Sample* Sites
X1.104 20 Timberline Dr	1-1.Sample site #1
Hotel	1-2.102 Bearfoot Rd
	1-3.134 Red Cedar Ln
	GRW S01
	GRW S02
X2. 141 Coal Creek Dr	2-1. Sample site #2
	2-2. 155 Coal Creek Dr
	2-3. 133 Coal Creek Dr.
	GRW S01
	GRW S02
X3 103 Forest Ln	3-1. Sample site #3
	3-2. 151 Forest Ridge Dr
	3-3. 109 Forest Ridge Dr
	GRW S01
	GRW S02
X4. 101 Cascade Dr	4-1. Sample site #4
	4-2. 125 Timberline Dr W
	4-3. 113 Cascade Dr
	GRW S01
	GRW S02

^{*}You should mark the lab slip for the source sample "Ground Water Rule" (GWR) in type of sample and request an analysis for E coli count. You must sample every groundwater source, <u>before</u> treatment, that was in use when the original routine sample was collected.

Important notes for sample collector:

- Collect samples early in the month and early in the week.
- Check the sample site/tap before filling bottle to make sure there is no reason to invalidate the sample results.
- Do not sample on week when key staff are on vacation or a holiday occurs, as it may create schedule conflicts.
- If sample site is no longer a good sample site, substitute an acceptable site in the same area. If the site issues persist, choose a new permanent site and update CMP accordingly.

E. coli-Present Sample Response

Distribution System *E. coli* Response Plan and *E. coli* Present Triggered Source Sample Response Plan

If we have *E. coli* in our distribution system, we will immediately:

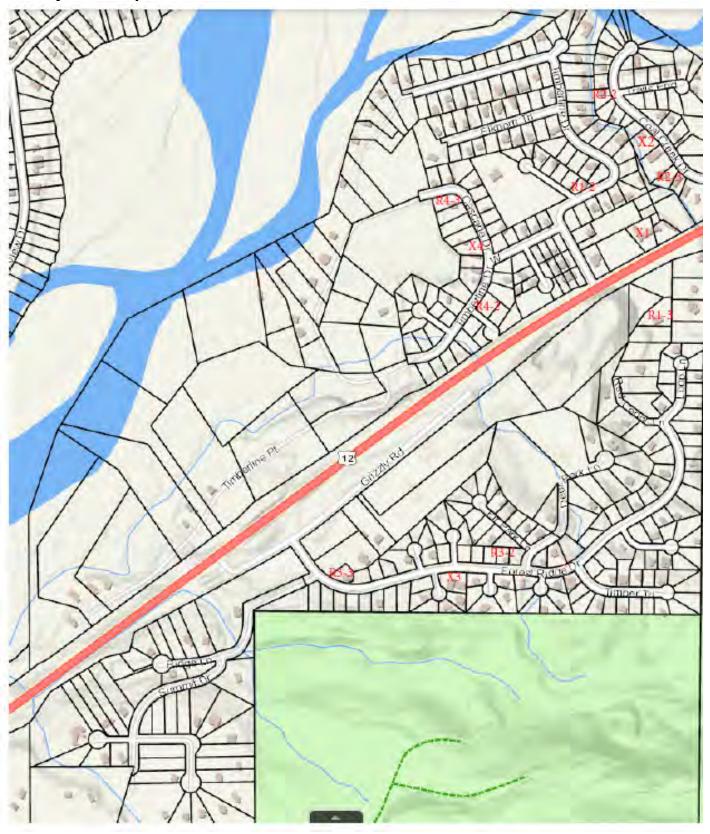
- 1. Call DOH.
- 2. See attached plan: What To Do When We Get A Positive Fecal Or E.Coli Sample

What To Do When We Get A Positive Fecal Or E-Coli Sample.

- Call the agency that governs that system immediately of receiving the results. Group A's Thurston, Lewis, Grays – SW Drinking Water, 360-236-3045 or 360-236-3030.
- 2. Work with agency, we could put the customers on boil water now or wait until the next tests come back. TPUD will usually put on boil water now. Distribute door hangers at this time with a copy of the Acute mcl attached.
 - K:\FORMS\Mandatory Language Forms\Acute Coliform MCL K:\FORMS\Mandatory Language Forms\Boil Water Advisory Door Hanger
- 3. Email or fax form and door hanger to agency after it has been hand delivered to the customers.
- 4. Take the repeat samples with in 24 hours and run a 24 hour test on them.

 <u>Group A's four samples</u> follow the Coliform Monitoring Plan. If more than 1 well was in operations then a raw sample from each will need to be taken, plus the four repeats (which should include one well).
- 5. Access the system; try to find where the contamination is coming from. Are there any bad tanks, what does the well head look like, what activity is going on around the well.
- 6. Call lab in 24 hours from time sample was taken if email has not been received yet. Confirm that samples were good or bad.
- 7. If samples are negative take another round of samples, immediately. Run another 24 hour test. If next round are also negative lift the boil water notice.
- 8. If one of the samples comes back positive and we haven't found the problem, then we should start continuous temporary chlorination of the system and notify the customers by door hanger of the chlorination. If the system is permanently chlorinated take chlorine residual throughout the water system to determine if chlorinated water is at the desired residual and if not, try to determine the cause of why there maybe no residual. Then flush the system to get the chlorine throughout with monitoring to make sure that chlorine residual is consistent throughout the water system.
- 9. Once the chlorine is throughout the system then we need to take two rounds of repeat samples under normal operating conditions (i.e., normal chlorine residual, if any, or zero residual if system is not normally not disinfected) to lift the boil water.

F. System Map





Water Quality Monitoring Schedule

System: TIMBERLINE VILLAGE #628 PWS ID: 88388 B Region: SOUTHWEST

Contact: Kimberly S Gubbe Group: A - Comm County: LEWIS

SMA ID: 147 SMA Name: PUD No 1 of Thurston County

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

	Jul 2021	Aug 2021	Sep 2021	Oct 2021	Nov 2021	Dec 2021	Jan 2022	Feb 2022	Mar 2022	Apr 2022	May 2022	Jun 2022
Coliform Monitoring Population	143	143	144	168	169	168	168	173	168	144	143	144
Number of Routine Samples Required	1	1	1	1	1	1	1	1	1	1	1	1

- 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

Generated on: 07/15/2021

<u>Test Panel/Analyte</u>	<u># Samples</u> <u>Required</u>	Compliance Period	<u>Frequency</u>	Last Sample Date	Next Sample Due	
Lead and Copper	5	Jan 2019 - Dec 2021	standard - 3 year	07/18/2018	Jul 2021	
Asbestos	0	Jan 2020 - Dec 2028	waiver - 9 year			

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.

Generated on: 07/15/2021

Page 2 of 3

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 S01 WE	LL #1 AFM952	Well	Use - Permanent	Susceptility - Moderate	
Test Panel/Analyte	# Samples	Compliance Period	<u>Frequency</u>	<u>Last Sample</u>	<u>Next Sample</u>
	<u>Required</u>			<u>Date</u>	<u>Due</u>
Nitrate	1	Jan 2021 - Dec 2021	standard - 1 year	05/17/2021	
Complete Inorganic (IOC) 1	Jan 2020 - Dec 2028	waiver - 9 year	05/17/2021	
Manganese	1	Jan 2020 - Dec 2022	standard - 3 year	05/17/2021	
Volatile Organics (VOC)	1	Jan 2020 - Dec 2025	waiver - 6 year	08/18/2016	Aug 2022
Herbicides	1	Jan 2014 - Dec 2022	waiver - 9 year	10/10/2016	
Pesticides	0	Jan 2020 - Dec 2022	waiver - 3 year	10/26/2006	
Soil Fumigants	0	Jan 2020 - Dec 2022	waiver - 3 year		
Gross Alpha	1	Jan 2020 - Dec 2025	standard - 6 year	08/13/2015	Aug 2021
Radium 228	1	Jan 2020 - Dec 2025	standard - 6 year	08/13/2015	Aug 2021
Source S02 WE	LL #2 AFM953	Well	Use - Permanent	Susceptility - Moderate	
Test Panel/Analyte	<u># Samples</u>	Compliance Period	<u>Frequency</u>	<u>Last Sample</u>	<u>Next Sample</u>
	<u>Required</u>			<u>Date</u>	<u>Due</u>
Nitrate	1	Jan 2021 - Dec 2021	standard - 1 year	05/17/2021	
Complete Inorganic (IOC) 1	Jan 2020 - Dec 2028	waiver - 9 year	05/17/2021	
Volatile Organics (VOC)	1	Jan 2020 - Dec 2025	waiver - 6 year	08/18/2016	Aug 2022
Herbicides	1	Jan 2014 - Dec 2022	waiver - 9 year	10/10/2016	
Pesticides	0	Jan 2020 - Dec 2022	waiver - 3 year	10/26/2006	
Soil Fumigants	0	Jan 2020 - Dec 2022	waiver - 3 year		
Gross Alpha	1	Jan 2020 - Dec 2025	standard - 6 year	08/13/2015	Aug 2021



Water Quality Monitoring Schedule

Other Information

 Other Reporting Schedules
 Due Date

 Submit Consumer Confidence Report (CCR) to customers and ODW (Community systems only):
 07/01/2021

Submit CCR certification form to ODW (Community systems only):

07/01/2021

10/01/2021

Page 3 of 3

Submit Water Use Efficiency report online to ODW and to customers (Community and other municipal water systems only): 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

Southwest Regional Water Quality Monitoring Contacts

For questions regarding chemical monitoring: Sophia Petro: (360) 236-3046 or sophia.petro@doh.wa.gov

For questions regarding DBPs: Regina Grimm, p.e.: (360) 236-3035 or regina.grimm@doh.wa.gov

For questions regarding coliform bacteria and microbial issues: Southwest Office: (360) 236-3030 or SWRO.Coli@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.

1515 80th St. E. Tacoma, WA 98404 (253) 531-3121

Chemistry - Report of Analysis

Date Collected: 05-17-2021	System Group Type: (circle one) (A) B Other				
Water System ID Number: 88388B	System Name: Timberline 628				
Lab Number / Sample Number: 089 / 02534	County: Lewis				
Sample Location: Pumphouse Distribution Tap	Source Number(s): (list all sources if blended or composited) S01, S02				
Sample Purpose: (check appropriate box) XRC - Routine/Compliance (satisfies monitoring requirements) C - Confirmation (confirmation of chemical result)* I - Investigative (does not satisfy monitoring requirements) O - Other (specify - does not satisfy monitoring requirements)	Date Received: 05-17-2021 Date Reported: 05-28-2021 Supervisor Initials:				
Sample Composition: (check appropriate box) S - Single Source B - Blended (list source numbers in "Source Number" field) C - Composite (list source numbers in "Source Number" field) D - Distribution Sample	Sample Type: (check one) X Pre-treatment/Untreated (Raw) Post-treatment (Finished) Unknown or Other Sample Collected by: Justin Kadoun Phone Number: 360-250-8312				
Send Report & Bill to: Thurston PUD 1230 Ruddell Road Southeast Lacey WA 98503	Comments:				

ANALYTICAL RESULTS

_			_ ^	ALIII	CAL RESU	LIS				
DOH#		DATA QUALIFIER	RESULT	SDRL	TRIGGER	MCL	UNITS	EXCEED MCL?	DATE ANALYZED	METHOD/ INITIALS
	Arsenic		<0.0010	0.001	0.010	0.010	mg/L	No	05-24-2021	200.8/JMB
0005	Barium	-	<0.10	0.1	2	2	mg/L	No	05-24-2021	200.8/JMB
0006	Cadmium	-	<0.0010	0.001	0.005	0.005	mg/L	No	05-24-2021	200.8/JMB
0007	Chromium		<0.0070	0.007	0.1	0.1	mg/L	No	05-24-2021	200.8/JMB
0011	Mercury	-	<0.00020	0.0002	0.002	0.002	mg/L	No	05-24-2021	200.8/JMB
0012	Selenium		<0.0020	0.002	0.05	0.05	mg/L	No	05-24-2021	200.8/JMB
0110	Beryllium		<0.00030	0.0003	0.004	0.004	mg/L	No	05-24-2021	200.8/JMB
0111	Nickel		<0.0050	0.005			mg/L		05-24-2021	200.8/JMB
0112	Antimony		<0.0030	0.003	0.006	0.006	mg/L	No	05-24-2021	200.8/JMB
0113	Thallium	-	<0.0010	0.001	0.002	0.002	mg/L		05-24-2021	200.8/JMB
0116	Free Cyanide	-	<0.05	0.05	0.2	0.2	mg/L		05-18-2021	4500CNF/EW
0019	Fluoride		<0.20	0.2	2.0	4.0	mg/L		05-17-2021	300.0/EW
0114	Nitrite - N		<0.10	0.1	0.5	1.0	mg/L		05-17-2021	300.0/EW
0020	Nitrate - N	N	<0.20	0.5	5.0	10.0	mg/L		05-17-2021	300.0/EW

Lab Number / Sample Number: 089 / 02534

DOH#		DATA QUALIFIER	RESULT	SDRL	TRIGGER	MCL	UNITS	EXCEED MCL?	DATE ANALYZED	METHOD/ INITIALS
0161	Total Nitrate/Nitrite - N	-	<0.40	0.5	5.0	10.0	mg/L	No	05-17-2021	300.0/EW
8000	Iron	-	<0.10	0.1		0.3	mg/L	No	05-25-2021	3111B/JMB
0010	Manganese	-	<0.010	0.01	1.24	0.05	mg/L	No	05-24-2021	200.8/JMB
0013	Silver	-	<0.01	0.1	7-1	0.1	mg/L	No	05-24-2021	200.8/JMB
0021	Chloride		2.3	20		250	mg/L	No	05-17-2021	300.0/EW
0022	Sulfate	-	1.6	50	- 22	250	mg/L	No	05-17-2021	300.0/EW
0024	Zinc	-	<0.20	0.2		5	mg/L	No	05-24-2021	200.8/JMB
0014	Sodium	-	<5.0	5		-	mg/L	-	05-25-2021	3111B/JMB
0015	Hardness	-	20.0	10			mg/L		05-17-2021	2340C/EW
0016	Conductivity		49.8	70		700	µmhos/cm	No	05-17-2021	2510B/EW
0017	Turbidity	-	<0.10	0.1			NTU	-	05-17-2021	2130B/EW
0018	Color	-	<5.0	15	77	15	color units	No	05-17-2021	2120B/EW
0009	Lead		<0.0010	0.001			mg/L	-	05-24-2021	200.8/JMB
0023	Copper		<0.020	0.02		-	mg/L		05-24-2021	200.8/JMB

NOTES:

ANALYTE: The name of an analyte being tested for.

DATA QUALIFIER: A symbol or letter to denote additional information about the result.

DOH#: Department assigned analyte number.

EXCEED MCL: (Maximum Contamination Level): Marked if the contaminant amount exceeds the MCL under chapters 246-290 and 246-291 WAC. Please contact the department's drinking water regional office in your area to determine follow-up actions. **METHOD/INITIALS:** Analytical method used. / Initials of the analyst that performed the analysis.

mg/L: milligrams per liter or parts per million.

RESULT: The laboratory reported result.

SDRL: (State Detection Reporting Limit): The minimum reportable detection of an analyte as established by the Department of Health

TRIGGER: The department's drinking water response level. Systems with contaminants detected at concentrations in excess of this level may be required to take additional samples or monitor more frequently. Please contact the department's drinking water regional office in your area for further information.

LAB COMMENTS

^{*} Confirmation: Include the original lab number, sample number, and collection date of original sample in either comment section.

⁻⁻ No exisiting value.

Anatek Labs, Inc.

1282 Alturas Drive - Moscow, ID 83843 - (208) 883-2839 - Fax (208) 8829246 - email moscow@anateklabs.com 504 E Sprague Ste. D - Spokane, WA 99202 - (509) 838-3999 - fax (509) 838-4433 - email spokane@anateklabs.com

Client:

Timberline Village #628

Address:

Attn:

1515 80th St E

Tacoma, WA 98404

Water Management Labs

Work Order:

MBE0516

Project:

08992985

Reported:

7/27/2021 08:51

Analytical Results Report

System ID#

88388B

System Name:

Timberline Village #628

Reference Number:

MBE0516-01

Collect Date:

05/17/21 11:30

DOH Source #:

96

Multiple Source Nos:

01,02

Sample Type:

Before

County:

Lewis

Date Received: Sample Location: 05/19/21 09:39

08992985 (Dist Tap PH)

Sample Purpose: RC - Routine/Compliance Sample

Drinking Water

Lab/Sample Number: 112-51601

Radionuclides

Matrix:

DOH #	Analyte	Result	Units	LRL	SDRL	Trigger	Trigger MCL	Analyzed	Analyst	Method	Qualifier
0165	Gross alpha	<3.00 ± 0.297	pCi/L	3.00	3		15	7/16/21 0:22	AM	EPA 900.0	
0166	Radium 228	$<1.00 \pm 0.424$	pCi/L	1.00	1		5	7/15/21 14:30	AM	EPA 904.0	

Authorized Signature,

Justin Doty For Todd Taruscio, Laboratory Manager

LRL

Lab Reporting Limit

SDRL

State Detection Reporting Limit

ND

Not Detected

MCL

EPA's Maximum Contaminant Level

Dry

Sample results reported on a dry weight basis

SAL

State Action Level

Not a certified analyte

This report shall not be reproduced except in full, without the written approval of the laboratory The results reported related only to the samples indicated.

WATER MANAGEMENT 08992985 LABORATORIES INC.

For Proper Credit, Please Complete Entire Form



Due: 06/03/21

(253) 531-3121

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Account #:

Activities and the second			A DITTO		
The state of the s	and distances in the last of	THE RESIDENCE OF THE PARTY OF T	The same of the sa	WSI) for Chemical Analy	
Lab Use Only B	3:	Date Received: \le	5/17-R	Time Received: S AM	M Initials L
Type of System: Gro	up:	X A B Other: RE	PVT	County: LEWS	
Sample Purpose: 🗶	Rout	tine / Compliance (RC)	Confirmation (C) _	Investigative (I) Othe	er (O)
System Name:	inB	WHINE 62	9	THE STATE OF THE S	and the second of the second o
System ID#: 8 &	3	e e B D	OH Source #: 5 9	Multiple Source #'s: S	01,502
Utility's Name for So				-	
		Vellfield Spring	Surface Pu	urchased or Intertie	
		nation/Other Grou			
				oosite (C) Distribution Sa	mple (D)
				t (Finished) Unknown or	
Treatment Type: X	None	Chlorination	Fluoridation	Filtration Aeration	
		iter Softener, Type:			
Specific Location San			TAP PH	O CITCL.	
Data Callacted 5	117	- 171	Time Calles	ted: 11 : 30 AMY PM	tura
Collected by: . 1UST	7	Thurston	Telephone:	(360)250 -83	17
Send Results + Bill to	:	Thurston	reiephone.	1 200	
Company:	-	PLID			
Contact: Kivn G	UBF				
Address:				Remarks:	
* 1230 Rudo		4 13 16 4	-8783		
Phone: - Lacey, WA	4 9030	360-790		Halling and the second	Park and an internal and an in
Email:	-				
Inorganics		Miscellaneous	Indiv	vidual Analytes	Organics
Full Chem 28	IX	Alkalinity	Antimony (Sb)	Lead (Pb)	VOC (524.2)
Pierce County Req		Calcium (Ca)	Arsenic (As)	Manganese (Mn)	TTHM (524.2)
Lewis County Req		Magnesium (Mg)	Barium (Ba)	Mercury (Hg)	Max. THMP (524.2)
King County Req		pH	Beryllium (Be)	Nickel (Ni)	BTEX (524.2)
Kitsap County Req		Silica	Cadmium (Cd)	Nitrate (NO ₃)	HAA (552.2)
Thurston County Req		Tannin-Lignin	Chloride (Cl)	Nitrite (NO ₂)	
Mark Requested	Analy	ysis Box to the Right	Chromium (Cr)	Selenium (Se)	SOC's
	. 1		Color	Silver (Ag)	Carbamates (531.1)
Other (List Below): 9	A	RAD	Conductivity	Sodium (Na)	Herbicides (515.1)
***************************************	1		Copper (Cu)	Sulfate (SO ₄)	Pesticides (525.2)
-			Cyanide (CN)	Thallium (TI)	EDB/DBCP (504)
			Fluoride (F)	Total Dissolved Solids	PCB's (508)
			Hardness	Turbidity	
The state of the s			Iron (Fe)	Zinc (Zn)	



Sample Receipt and Preservation Form



Page 4 of 4

Client Name: Timberline	Project:	089	92985	
TAT; Normal RUSH: days	5			
Samples Received From: FedEx UPS) USF	PS	Client	Courier Other:
Custody Seal on Cooler/Box: Yes No		Cus	stody Sea	s Intact: Yes No NA
Number of Coolers/Boxes:	/	Тур	e of Ice:	Ice/Ice Packs Blue Ice Dry Ice None
Packing Material: Bubble Wrap Bags	s Foa	m/Pea	inuts (None Other:
Cooler Temp As Read (°C): 12.7	Cooler To	emp C	Corrected	(°C): Thermometer Used: _ IR-5
				Comments:
Samples Received Intact?	Yes	No	N/A	
Chain of Custody Present?		No	N/A	
Samples Received Within Hold Time?	Yes	No	N/A	
Samples Properly Preserved?	(Yes)	No	N/A	
VOC Vials Free of Headspace (<6mm)?	Yes	No	(N/A)	
VOC Trip Blanks Present?	Yes	No	(N/A)	
Labels and Chains Agree?	Yes	No	N/A	
Total Number of Sample Bottles Received		2		
Chain of Custody Fully Completed?	Yes	No	N/A	
Correct Containers Received?	Yes	No	N/A	
Anatek Bottles Used?	Yes	No	Unknow	n
Record preservatives (and lot numbers, if I	known) fo	or cont	ainers be	low:
H1203 →	Rads			
Notes, comments, etc. (also use this space	e if conta	ctina	the client	- record names and date/time)
Rads -> SPOA	o ii oonto	oung	are energy	reserve names and date and
100000000000000000000000000000000000000				
pH paper (2002327) PH < 2				
pH paper (2002327) pH < 2 cap tube (2002498)				
Reseived/Jeanseted Size			,	ماماء
Received/Inspected By:		Dat	e/I ime: _	5/19/21 9:39
Form F19.00 - Eff 8 Feb 2019				Page 1 of 1

1515 80th St. E. Tacoma, WA 98404 (253) 531-3121

Volatile Organic Compounds Report of Analysis

Date Collected: 05-18-2022	System Group Type: (circle one) (A) B Other
Water System ID Number: 88388B	System Name: Timberline 628
Lab Number / Sample Number: 089 / 02669	County: Lewis
Sample Location: Dist Tap	Source Number(s): (list all sources if blended or composited) S01, S02
Sample Purpose: (check appropriate box) X RC - Routine/Compliance (satisfies monitoring requirements) C - Confirmation (confirmation of chemical result)* I - Investigative (does not satisfy monitoring requirements) O - Other (specify - does not satisfy monitoring requirements)	Date Received: 05-18-2022 Date Analyzed: 05-23-2022 Date Reported: 12-15-2022 Supervisor Initials: 72
Sample Composition: (check appropriate box) S - Single Source B - Blended (list source numbers in "Source Number" field) C - Composite (list source numbers in "Source Number" field) D - Distribution Sample	Sample Type: (check one) X Pre-treatment/Untreated (Raw) Post-treatment (Finished) Unknown or Other Sample Collected by: Rich Phone Number: 360-357-8783
Send Report & Bill to: Thurston PUD 1230 Ruddell Road Southeast, Lacey WA 98503	Comments:

ANALYTICAL RESULTS

501111	451415/75	1 5.55		0				T	
DOH#	ANALYTE	DATA	RESULTS	SDRL	TRIGGER	MCL	UNITS	EXCEEDS	METHOD/
		QUALIFIER						MCL?	INITIALS
0045	Vinyl chloride		ND	0.5	0.5	2	μg/L	No	524.2/RL
0046	1,1- Dichloroethylene		ND	0.5	0.5	7	µg/L	No	524.2/RL
0047	1,1,1 Trichloroethane		ND	0.5	0.5	200	µg/L	No	524.2/RL
0048	Carbon tetrachloride		ND	0.5	0.5	5	μg/L	No	524.2/RL
0049	Benzene		ND	0.5	0.5	5	μg/L	No	524.2/RL
0050	1,2 Dichloroethane		ND	0.5	0.5	5	μg/L	No	524.2/RL
0051	Trichloroethylene		ND	0.5	0.5	5	μg/L	No	524.2/RL
0052	Para-dichlorobenzene		ND	0.5	0.5	75	μg/L	No	524.2/RL
0056	Dichloromethane		ND	0.5	0.5	5	μg/L	No	524.2/RL
0057	trans-1,2-Dichloroethylene		ND	0.5	0.5	100	μg/L	No	524.2/RL
0060	cis- 1,2-Dichloroethylene		ND	0.5	0.5	70	μg/L	No	524.2/RL
0063	1,2- Dichloropropane		ND	0.5	0.5	5	μg/L	No	524.2/RL
0066	Toluene		ND	0.5	0.5	1000	μg/L	No	524.2/RL
0067	1,1,2-Trichloroethane		ND	0.5	0.5	5	μg/L	No	524.2/RL
0068	Tetrachloroethylene		ND	0.5	0.5	5	μg/L	No	524.2/RL
0071	Monochlorobenzene		ND	0.5	0.5	100	μg/L	No	524.2/RL
0073	Ethylbenzene		ND	0.5	0.5	700	µg/L	No	524.2/RL
0076	Styrene		ND	0.5	0.5	100	μg/L	No	524.2/RL
0084	Ortho-Dichlorobenzene		ND	0.5	0.5	600	µg/L	No	524.2/RL
0095	1,2,4- Trichlorobenzene		ND	0.5	0.5	70	μg/L	No	524.2/RL
0160	Total Xylenes		ND	0.5	0.5	10000	µg/L	No	524.2/RL
0074	m/p Xylenes (MCL for Total)		ND	0.5	0.5		μg/L		524.2/RL
0075	o- Xylene (MCL for Total)		ND	0.5	0.5		μg/L		524.2/RL
0027	Chloroform		ND	0.5			μg/L		524.2/RL

DOH#	ANALYTE	DATA QUALIFIER	RESULTS	SDRL	TRIGGER	MCL	UNITS	EXCEEDS MCL?	METHOD/ INITIALS
0028	Bromodichloromethane		ND	0.5			µg/L		524.2/RL
0029	Dibromochloromethane		ND	0.5			μg/L		524.2/RL
0030	Bromoform		ND	0.5	0.5		μg/L		524.2/RL
0031	Total Trihalomethanes		ND			80	μg/L	No	524.2/RL
0053	Chloromethane		ND	0.5	0.5		μg/L		524.2/RL
0054	Bromomethane		ND	0.5	0.5		μg/L		524.2/RL
0058	1,1 Dichloroethane		ND	0.5	0.5		µg/L		524.2/RL
0072	1,1,1,2-Tetrachloroethane		ND	0.5	0.5		μg/L		524.2/RL
0078	Bromobenzene		ND	0.5	0.5		μg/L		524.2/RL
0079	1,2,3- Trichloropropane		ND	0.5	0.5		μg/L		524.2/RL
0081	O-Chlorotoluene		ND	0.5	0.5	-	μg/L		524.2/RL
0085	Trichlorofluoromethane		ND	0.5	0.5		μg/L		524.2/RL
0086	Bromochloromethane		ND	0.5	0.5		µg/L		524.2/RL
0089	1,3,5- Trimethylbenzene		ND	0.5	0.5		µg/L		524.2/RL
0091	1,2,4- Trimethylbenzene		ND	0.5	0.5		μg/L		524.2/RL
0092	sec- Butylbenzene		ND	0.5	0.5		μg/L		524.2/RL
0093	p- Isopropyltoluene		ND	0.5	0.5		μg/L		524.2/RL
0094	n- Butylbenzene		ND	0.5	0.5		µg/L		524.2/RL
0096	Naphthalene		ND	0.5	0.5		μg/L		524.2/RL
0104	Dichlorodifluoromethane		ND	0.5	0.5		μg/L		524.2/RL
0154	1,3 Dichloropropene		ND	0.5	0.5		μg/L		524.2/RL
0062	1,1 Dichloropropene		ND	0.5	0.5		μg/L		524.2/RL
0064	Dibromomethane		ND	0.5	0.5		μg/L		524.2/RL
0070	1,3- Dichloropropane		ND	0.5	0.5		μg/L		524.2/RL
0080	1,1,2,2 Tetrachloroethane		ND	0.5	0.5		μg/L		524.2/RL
0082	P-Chlorotoluene		ND	0.5	0.5		μg/L		524.2/RL
0083	m- Dichlorobenzene		ND	0.5	0.5		μg/L		524.2/RL
0087	Isopropylbenzene		ND	0.5	0.5		μg/L		524.2/RL
0088	n- Propylbenzene		ND	0.5	0.5		µg/L		524.2/RL
0090	tert- Butylbenzene		ND	0.5	0.5		µg/L		524.2/RL
0097	Hexachlorobutadiene		ND	0.5	0.5		µg/L		524.2/RL
0098	1,2,3 Trichlorobenzene		ND	0.5	0.5		µg/L		524.2/RL
0427	EDB (screening)		ND	0.5	0.5		µg/L		524.2/RL
0428	DBCP (screening)		ND	0.5	0.5		µg/L		524.2/RL
N/A	MTBE		ND	0.5	0.5		μg/L		524.2/RL

Lab Number / Sample Number: 089 / 02669

Volatile Organic Compounds (cont)

LAB COMMENTS

* Confirmation:Include the original lab number, sample number, and collection date of original sample in either comment section.

Analysis for EDB and DBCP is screening only. Detections of EDB and DBCP are confirmed using the fumigant test panel.

μg/L:micrograms per liter or parts per billion.

ANALYTE: The name of an analyte being tested for.

DATA QUALIFIER: A symbol or letter to denote additional information about the result.

DOH#:Department assigned analyte number.

EXCEED MCL:(Maximum Contamination Level): Marked if the contaminant amount exceeds the MCL under chapters 246-290 and 246-291 WAC. Please contact the department's drinking water regional office in your area to determine follow-up actions. **METHOD/INITIALS:**Analytical method used. / Initials of the analyst that performed the analysis.

RESULT: The laboratory reported result.

SDRL:(State Detection Reporting Limit): The minimum reportable detection of an analyte as established by the Department of Health

TRIGGER: The department's drinking water response level. Systems with contaminants detected at concentrations in excess of this level may be required to take additional samples or monitor more frequently. Please contact the department's drinking water regional office in your area for further information.

⁻⁻No exisiting value.



1515 80th St. E. Tacoma, WA 98404 (253) 531-3121

Nitrate/Nitrite Report of Analysis

Date Co	ollected: 05-02-2023			System (Group Type:	(circle o	ne) (A) в	Other	
Water S	system ID Number: 88388B			System I	Name: Timb	erline	628			
Lab Nu	mber / Sample Number: 089 / 0	02439		County:	Lewis				<u> </u>	
Sample	Location: Upper Reservoir			Source N S01,S02		ist all so	urces if b	lended or co	mposited)	
Sample	Purpose: (check appropriate b	ox)		Date Re	ceived: 05-02	2-2023				
X R	C - Routine/Compliance (satisfie	s monitoring reqւ	irements)	Date Ana	alyzed: 05-02	2-2023				
□с	- Confirmation (confirmation of cl	nemical result)*		Date Re	ported: 05-0	9-2023				
□ ! -	Investigative (does not satisfy m	onitoring requiren	nents)	Supervis	or Initials: 1	34				-
	 Other (specify - does not satisfy 	monitoring requir	rements)	•	•					
Sample	Composition: (check appropria	ite box)		Sample	Type: (check	one)	X Pre-	treatment/Ur	itreated (Rav	v)
□s	- Single Source						Post	t-treatment (F	Finished)	
ХB	- Blended (list source numbers in	"Source Number	" field)				Unk	nown or Othe	er	
□ c	 Composite (list source numbers 	in "Source Num	ber" field)	Sample	Collected by	: Kirk				
	- Distribution Sample			Phone N	umber: 360-	790-266	52			
Send R	eport & Bill to: Thurston PUD 1230 Ruddell Ro Lacey WA 98503			Commer	nts:					-
	Lacey VVA 90000									
		<i>I</i>	NALYTICA	L RESUL	_TS					
DOH#	ANALYTE	DATA QUALIFIER	RESULTS	SDRL	TRIGGER	MCL	UNITS	EXCEEDS MCL?	METHOD/ INITIALS	
0020	Nitrate - N		< 0.20	0.5	5.0	10.0	ma/l	No	300 0/DI	+

DOH#	ANALYTE	DATA QUALIFIER	RESULTS	SDRL	TRIGGER	MCL	UNITS	EXCEEDS MCL?	METHOD/ INITIALS
0020	Nitrate - N		<0.20	0.5	5.0	10.0	mg/L	No	300.0/RL

NOTES:

*Confirmation: Include the original lab number, sample number, and collection date of original sample in either comment section. [⊸]No exisiting value.

ANALYTE: The name of an analyte being tested for.

DATA QUALIFIER: A symbol or letter to denote additional information about the result.

DOH#: Department assigned analyte number.

EXCEED MCL: (Maximum Contamination Level): Marked if the contaminant amount exceeds the MCL under chapters 246-290 and 246-291 WAC. Please contact the department's drinking water regional office in your area to determine follow-up actions.

METHOD/INITIALS: Analytical method used. / Initials of the analyst that performed the analysis.

mg/L: milligrams per liter or parts per million.

RESULT: The laboratory reported result.

SDRL: (State Detection Reporting Limit): The minimum reportable detection of an analyte as established by the Department of Health

TRIGGER: The department's drinking water response level. Systems with contaminants detected at concentrations in excess of this level may be required to take additional samples or monitor more frequently. Please contact the department's drinking water regional office in your area for further information.

LAB COMMENTS:



1515 80th St. E. Tacoma, WA 98404 (253) 531-3121

Lead and Copper

Distribution System - Report of Analyses

Lead and Copper Analysis (LCR)	System Group Type: (circle one) (A) B Other:
Water System ID Number: 88388B	System Name: Timberline 628
Source: S93 (standing distribution samples)	County: Lewis
	Consecutive System? YES NO
Sample Purpose: (check appropriate box) X RC - Routine/Compliance (satisfies monitoring requirements) C - Confirmation (confirmation of chemical result)* I - Investigative (does not satisfy monitoring requirements) O - Other (specify - does not satisfy monitoring requirements)	Date Received: 08-02-2021 Date Analyzed: 08-18-2021 Date Reported: 09-09-2021 Supervisor Initials:
Sample Composition: (check appropriate box) S - Single Source B - Blended (list sources in "Source Number" field) C - Composite (list sources in "Source Number" field) D - Distribution Sample	Sample Type: (check one) X Pre-treatment/Untreated (Raw) Post-treatment (Finished) Unknown or Other Contact Name: Kim Gubbe Phone Number: 360-357-8783
Send Report & Bill to: Thurston PUD 1230 Ruddell Road Southeast, Lacey WA 98503	Comments:

ANALYTICAL RESULTS

(DOH #) Analyte	(0009) Lead	(0023) Copper
State Detection Reporting Level (SDRL) (mg/L)	0.001	0.02
Regulatory Action Level (mg/L)**	0.015	1.3
Analytical Method / Analyst's Initials	200.8/JMB	200.8/JMB

Lab Number / Sample Number	Date Collected	Sample Location:	Lead (mg/L)	Copper (mg/L)
089 / 04898	07-28-2021	141 Coal Creek Drive	0.0018	0.408
089 / 04899	07-28-2021	13807 US 12	<0.0010	0.141
089 / 04900	07-28-2021	115 Trails End	<0.0010	1.553
089 / 04901	07-28-2021	107 View Place	<0.0010	<0.020
089 / 04902	07-27-2021	181 Summit Drive	0.0021	0.215

^{**}Regulatory Action Level for schools and daycare facilities is 0.020 mg/L for Lead

^{*}Confirmation: Include the original lab number, sample number, and collection date of original sample in either comment section.

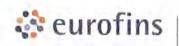
mg/L: milligrams per liter or parts per million

Regulatory Action level: The concentraion against which the 90th percentile of all distribution samples collected during the monitoring period that, if exceeded, signals the system is in violation.

SDRL (State Detection Reporting Level): The minimum reporting level established by the department.

LAB COMMENTS AND DATA QUALIFIER-Note data qualifiers next to the individual result. Note the definition of the qualifiers here:

PFAZ TIMBERLINE



Eaton Analytical

750 Royal Oaks Drive, Suite 100, Monrovia, CA 91016 / Tel: 626-386-1100 / Lab ID No. - C838

Per- and Polyfluoroalkyl Substances (PFAS) By EPA Method 533

Report of Analysis

Date Collected: 11/28/21	System Group Type: (circle one) A B Other
Water System ID Number: 88388	System Name: Timberline 628
Lab Number / Sample Number: 094-00561	County: Lewis
Sample Location: Pumphouse Dist Tap	Source Number(s): (list all sources if blended or composited) S01, S02
Sample Purpose: (check appropriate box) RC-Routine/Compliance (satisfies monitoring requirements) C - Confirmation (confirmation of chemical result)* I - Investigative (does not satisfy monitoring requirements) O - Other (specify - does not satisfy monitoring requirements)	Date Received: 11/30/21 Date Analyzed: 12/8/2021 Date Reported: 12/13/21 COMMENTS: EEA Folder:972263 System is untreated.
Sample Composition: (check appropriate box) ☐ S - Single Source ☐ B - Blended (list source numbers in "Source Numbers" field) ☐ C - Composite (list source numbers in "Source Numbers" field) ☐ D - Distribution Sample	Sample Type: (check one) Pre-treatment/Untreated (Raw) Post-treatment (Finished) Unknown or Other Sample Collected by: (name) Kirk Gietz Phone Number:
Send Report to: Washington State DOH Office of Drinking Water/Data Entry P.O. Box 47822 Olympia, WA 98504-7822	Bill to: (client name) Washington Department of Health 16201 E. Indiana Ave. Ste. 1500 Spokane Valley, WA 99216

REQUIRED ANALYTICAL RESULTS

DOH#	CONTAMINANT	DATA QUALIFIER	RESULTS	SDRL	SAL	UNITS	EXCEEDS SAL? (X if Yes)	METHOD/ INITIALS
0434	(PFOA) Perfluorooctanoic acid		ND	2	10	ng/L		533 / KAM
0433	(PFOS) Perfluorooctanesulfonic acid		ND	2	15	ng/L		533 / KAM
0431	(PFHxS) Perfluorohexanesulfonic acid		ND	2	65	ng/L		533 / KAM
0432	(PFNA) Perfluorononanoic acid		ND	2	13	ng/L	-	533/KAM
0429	(PFBS) Perfluorobutanesulfonic acid		ND	2	345	ng/L		533 / KAM
0430	(PFHpA) Perfluoroheptanoic acid	1	ND	2	n/a	ng/L		533/KAM
0435	(PFHxA) Perfluorohexanoic acid		ND	2	n/a	ng/L		533 / KAM
0436	(PFDA) Perfluorodecanoic acid		ND	2	n/a	ng/L		533 / KAM
0437	(PFUnA) Perfluoroundecanoic acid		ND	2	n/a	ng/L		533 / KAM
0438	(PFDoA) Perfluorododecanoic acid		ND	2	n/a	ng/L		533 / KAM
0445	(ADONA) 4,8-Dioxa-3H-perfluorononanoic acid		ND	2	n/a	ng/L		533 / KAM
0446	(9CI-PF3ONS) 9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid		ND	2	n/a	ng/L		533 / KAM
0447	(HFPO-DA) Hexafluoropropylene oxide dimer acid		ND	2	n/a	ng/L		533 / KAM
0448	(11Cl-PF3OUdS) 11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid		ND	2	n/a	ng/L		533 / KAM
0450	(4:2FTS)1H,1H, 2H, 2H-Perfluorohexane sulfonic acid		ND	2	n/a	ng/L		533 / KAM
0451	(6:2FTS)1H,1H, 2H, 2H-Perfluorooctane sulfonic acid		ND	2	n/a	ng/L		533 / KAM

REQUIRED ANALYTICAL RESULTS

DOH#	CONTAMINANT	DATA QUALIFIER	RESULTS	SDRL	SAL	UNITS	EXCEEDS SAL? (X if Yes)	METHOD/ INITIALS
0452	(8:2FTS)1H,1H, 2H, 2H-Perfluorodecane sulfonic acid		ND	2	n/a	ng/L		533 / KAM
0453	(NFDHA)Nonafluoro-3,6-dioxaheptanoic acid		ND	2	n/a	ng/L		533 / KAM
0454	(PFBA)Perfluorobutanoic acid		ND	2	n/a	ng/L		533 / KAM
0455	(PFHpS)Perfluoroheptanesulfonic acid		ND	2	n/a	ng/L		533 / KAM
0456	(PFMBA)Perfluoro-4-methoxybutanoic acid		ND	2	n/a	ng/L		533 / KAM
0457	(PFMPA)Perfluoro-3-methoxypropanoic acid		ND	2	n/a	ng/L		533 / KAM
0458	(PFPeA)Perfluoropentanoic acid		ND	2	n/a	ng/L		533 / KAM
0459	(PFPeS)Perfluoropentanesulfonic acid		ND	2	n/a	ng/L	2000	533 / KAM
0460	(PFEESA)Perfluoro(2-ethoxyethane)sulfonic acid		ND	2	n/a	ng/L		533 / KAM

Qualifier Definitions



POSTED

1515 80th St. E. Tacoma, WA 98404 (253) 531-3121

SYNTHETIC ORGANIC CHEMICALS (SOC's) ANALYSIS REPORT EPA TEST METHOD - EPA 515.1 WA DOH TEST PANEL: HERB1

System ID No.: 88388B)			
Lab/Sample No.: 08985329	Date Collected	: 10/10/16	DOH Source No.: S96	
Multiple Source Nos.: S01 & S02		Sample Type:	B Sample Purpose: C	
Date Received: 10/11/16	Date Analyzed: 10/13/16		nalyst: RL	
Date Extracted: 10/12/16	Date Reported: 10/14/16		Supervisor: Lac	
County: Lewis		Group	o: A	
Sample Location: Lower Pumphous	se			
Send To: H & R Waterworks			Remarks:	
PO Box 3				
East Olympia, WA 9854	10			

DOH#	ANALYTES	RESULTS	UNITS	SRL	TRIGGER	MCL	EXCE	EDS
		EPA REGULATED					Trigger?	MCL?
37	2,4 - D	ND	ug/L	0.5	0.5	70	NO	NO
38	2,4,5 - TP (Silvex)	ND	ug/L	1.0	1.0	50	NO	NO
134	Pentachlorophenol	ND	ug/L	0.20	0.20	1	NO	NO
137	Dalapon	ND	ug/L	5.0	5.0	200	NO	NO
139	Dinoseb	ND	ug/L	1.0	1.0	7	NO	NO
140	Picloram	ND	ug/L	0.5	0.5	500	NO	NO
		EPA UNREGULATED						
135	2,4 - DB	ND	ug/L	1.0				
138	Dicamba	ND	ug/L	0.2				
223	Acifluorfen	ND	ug/L	2.0				
224	Chloramben	ND	ug/L	0.2				
225	DCPA Acid Metabolites (A)	ND	ug/L	0.1				
226	3,5-Dichlorobenzoic Acid	ND	ug/L	0.5			4	
228	4 - Nitrophenol	ND	ug/L	0.5				

NOTES:

SRL (State Reporting Level): Indicates the minimum reporting level required by the Washington Department of Health (DOH),

Trigger Level: DOH Drinking Water response level.

MCL (Maximum Contaminant Level): If the contaminant amount exceeds the MCL, immediately contact your regional DOH office.

NA (Not Analyzed): In the RESULTS column indicates this compound was not included in the current analysis.

ND (Not Detected): In the RESULTS column indicates this compound was analyzed and not detected at a level greater than or equal to the SRL.

< : Indicates less than.

Comments:

Method 515.1: Herbicides

Appendix 10.8 Local Government Consistency Checklist and Wellhead Protection Area Notifications

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



Providing safe, reliable, affordable, and sustainable service.

July 6, 2023

Mindy Brooks
Sr. Long Range Planner
Lewis County Community Development
2025 NE Kresky Ave, Chehalis, WA, 98532
mindy.brooks@lewiscountywa.gov
360-740-2610

Subject: Timberline Village #628 Water System, ID #88388, Lewis County; Part B – Water

System Plan

Dear Ms. Brooks,

Thurston PUD has completed an update to the Timberline Village #628 Part B Water System Plan. We request your review and concurrence in regard to the required Local Government Consistency Review Checklist. The water system is requesting approval of 45 additional connections in order to serve the current backlog of water availability requests. No change to infrastructure or service area is proposed.

Please find enclosed chapters 1 and 2 of the Part B Water System Plan; the full plan can be found on our website at http://thurstonpud.org/projects.htm. The Part B water system plan contains system specific information. Thurston PUD's Part A (umbrella) water system plan can be found on our website. A copy of the DOH's Local Government Consistency Review Checklist is enclosed. If you have any questions or need any other information, please don't hesitate to contact me.

Sincerely,

Doug Piehl District Engineer (360) 357-8783

Douglas Piehl

doug.piehl@thurstonpud.org

Enclosures:

Timberline Village Part B WSP Chapters 1 and 2 Local Government Consistency Determination Form



Local Government Consistency Determination Form

Water System Name: <u>Timberline Village #628</u>	PWS ID: <u>88388</u>
Planning/Engineering Document Title: Water System Plan	Plan Date: <u>July 2023</u>
Local Government with Jurisdiction Conducting Review: Lewis Count	ty Community Development

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 <u>land use</u> <u>and zoning</u> within the service area.	Section 1.4	
b)	The <u>growth projection</u> used to forecast water demand is consistent with the adopted city or county's population growth projections. If a different growth projection is used, provide an explanation of the alternative growth projection and methodology.	Section 2.6	
c)	For <u>cities and towns that provide water service</u> : All water service area policies of the city or town described in the plan conform to all relevant <u>utility service extension ordinances</u> .	N/A	
d)	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.	Section 1.5 & 1.6	
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.	Section 1.3	

I certify that the above statements are true are consistent with adopted local plans and	to the best of my knowledge and that these specific elements development regulations.
Signature	 Date
Printed Name, Title, & Jurisdiction	

Consistency Review Guidance

For Use by Local Governments and Municipal Water Suppliers

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

For **water system plans (WSP)**, a consistency review is required for the service area and any additional areas where a <u>municipal water supplier</u> 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 <u>municipal water supplier</u> 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 <u>municipal water supplier</u> 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 <u>not</u> provide a consistency review, document efforts made and the amount of time provided to the local government for review. Please include: name of contact, date, and efforts made (letters, phone calls, and emails). To self-certify, please contact the DOH Planner.

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

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



July 7, 2023

Re: Public Meeting for the Timberline Village 628 Part B Water System Plan

Dear Customer:

The Timberline Village 628 Part B Water System Plan (WSP) has been completed and submitted to the Washington State Department of Health Drinking Water (DOH).

The WSP includes:

- History of the Systems
- Service Area
- Capacity Analysis
- System Inventory
- Wellhead Protection
- 20 year Capital Improvements Plan
- Request for approval of additional connections

You can find the draft WSP on the PUD's website at www.ThurstonPUD.org.

The public is welcome to provide feedback on this Water System Plan. Listed below is information on how to attend a Public Meeting held via Zoom regarding the updated WSP.

Date	TBD
Start Time	6:00 p.m.
Phone Number	(253) 215-8782
Webinar/Meeting ID	
Meeting Link	

Members of the public are welcome to join this meeting from a personal computer or mobile device. If you wish to attend by telephone audio only, please use the information above to dial into the meeting. If you have comments and are not able to attend the meeting, please email us at PUDCustomerService@thurstonpud.org or mail to Thurston PUD, 1230 Ruddell Road SE, Lacey, WA 98503.

Best Regards,

Kim Gubbe

Director of Planning and Compliance

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



Providing safe, reliable, affordable, and sustainable service.

July 7, 2023

Goat Rocks Community Association Water System C/O Timothy Barto P.O. Box 2161 Poulsbo, WA 98370 (360) 621-9151

Subject: Timberline Village 628 Water System, ID #88388, Lewis County; Part B – Water

System Plan

Dear Mr. Barto,

The Timberline Village 628 water system is a water system owned and operated by Thurston County PUD. This water system is in the vicinity of the Goat Rocks Community Association water system. The included Water System Plan fulfills planning requirements of WAC 246-290-100. The water system plan requests approval of additional services to continue serving the existing water service area, but does not request any change to the water system service area. We do not foresee any impact of the Timberline Village 628 water system upon the Goat Rocks Community Association water system. The Timberline Village 628 water system plan can be found on Thurston PUD's website at http://thurstonpud.org/projects.htm Owing to timeline, I would ask that you comment within 30 days, or if you need additional time that you do let me know.

Please don't hesitate to contact me with any additional questions or comments.

Sincerely,

Doug Piehl District Engineer

Douglas Piehl

(360) 357-8783

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



Providing safe, reliable, affordable, and sustainable service.

July 7, 2023

High Valley Country Club Water System C/O Larry Fale P.O. Box 427 Packwood, WA 98361 (360) 494-8432

Subject: Timberline Village 628 Water System, ID #88388, Lewis County; Part B – Water

System Plan

Dear Mr. Fale,

The Timberline Village 628 water system is a water system owned and operated by Thurston County PUD. This water system is in the vicinity of the High Valley Country Club water system. The included Water System Plan fulfills planning requirements of WAC 246-290-100. The water system plan requests approval of additional services to continue serving the existing water service area, but does not request any change to the water system service area. We do not foresee any impact of the Timberline Village 628 water system upon the High Valley Country Club water system. The Timberline Village 628 water system plan can be found on Thurston PUD's website at http://thurstonpud.org/projects.htm Owing to timeline, I would ask that you comment within 30 days, or if you need additional time that you do let me know.

Please don't hesitate to contact me with any additional questions or comments.

Sincerely,

Doug Piehl District Engineer

Douglas Piehl

(360) 357-8783

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



Providing safe, reliable, affordable, and sustainable service.

July 7, 2023

Lewis County Community Development 2025 NE Kresky Ave, Chehalis, WA, 98532

Subject: Timberline Village #628 Water System - Notification of Wellhead Protection Area

To whom it may concern:

As part of our wellhead protection program and in accordance with state regulations (WAC 246-290-135), the Thurston PUD hereby informs you of the findings of our wellhead protection area delineation for the Timberline Village #628 water system.

The enclosed map shows the 1, 5, and 10-year travel boundaries for our wellhead protection area, located in the SE ¼, NE ¼, Section 01, Township 13N, Range 09E, WM. Please review the map and correlate it with your land-use planning. Any groundwater contamination that occurs within this wellhead protection area has a potential to reach our wells. It is of importance to us that all reasonable steps are taken to ensure that land use activities within this area do not contaminate our drinking water supply. Please return notification if you are aware of an unidentified potential source of contamination located within the wellhead protection area.

In addition, please note the location of the wellhead in the event of an emergency. Thank you for your cooperation and assistance in helping us ensure safe, clean drinking water. If you have any questions please don't hesitate to contact Thurston PUD.

Sincerely,

Doug Piehl District Engineer

Douglas Piehl

(360) 890-6021

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



Providing safe, reliable, affordable, and sustainable service.

July 7, 2023

Lewis County Emergency Management 351 NW North Street Chehalis, WA, 98532 360 740-1151

Subject: Timberline Village #628 Water System - Notification of Wellhead Protection Area

To whom it may concern:

As part of our wellhead protection program and in accordance with state regulations (WAC 246-290-135), the Thurston PUD hereby informs you of the findings of our wellhead protection area delineation for the Timberline Village #628 water system.

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In addition, please note the location of the wellhead in the event of an emergency. Thank you for your cooperation and assistance in helping us ensure safe, clean drinking water. If you have any questions please don't hesitate to contact Thurston PUD.

Sincerely,

Doug Piehl District Engineer (360) 890-6021

Douglas Piehl

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



Providing safe, reliable, affordable, and sustainable service.

July 7, 2023

Lewis County Health Department 2025 NE Kresky Ave Chehalis, WA 98532 C/O Jeff Landrum

Subject: Timberline Village #628 Water System - Notification of Wellhead Protection Area

To whom it may concern:

As part of our wellhead protection program and in accordance with state regulations (WAC 246-290-135), the Thurston PUD hereby informs you of the findings of our wellhead protection area delineation for the Timberline Village #628 water system.

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In addition, please note the location of the wellhead in the event of an emergency. Thank you for your cooperation and assistance in helping us ensure safe, clean drinking water. If you have any questions please don't hesitate to contact Thurston PUD.

Sincerely,

Doug Piehl

District Engineer

Douglas Piehl

(360) 890-6021

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



Providing safe, reliable, affordable, and sustainable service.

July 7, 2023

Department of Ecology SW Regional Office 300 Desmond Drive SE Lacey, WA 98503

Subject: Timberline Village #628 Water System - Notification of Wellhead Protection Area

To whom it may concern:

As part of our wellhead protection program and in accordance with state regulations (WAC 246-290-135), the Thurston PUD hereby informs you of the findings of our wellhead protection area delineation for the Timberline Village #628 water system.

The enclosed map shows the 1, 5, and 10-year travel boundaries for our wellhead protection area, located in the SE ¼, NE ¼, Section 01, Township 13N, Range 09E, WM. Please review the map and correlate it with your land-use planning. Any groundwater contamination that occurs within this wellhead protection area has a potential to reach our wells. It is of importance to us that all reasonable steps are taken to ensure that land use activities within this area do not contaminate our drinking water supply. Please return notification if you are aware of an unidentified potential source of contamination located within the wellhead protection area.

In addition, please note the location of the wellhead in the event of an emergency. Thank you for your cooperation and assistance in helping us ensure safe, clean drinking water. If you have any questions please don't hesitate to contact Thurston PUD.

Sincerely,

Doug Piehl District Engineer

Douglas Piehl

(360) 890-6021

Linda Oosterman – District 1 Russell E. Olsen – District 2 Chris Stearns – District 3



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July 7, 2023

Dear Property Owners:

Thurston PUD is required by the Washington Department of Health to develop a wellhead protection plan for the Timberline Village - 628 water system. Wellhead protection involves protecting the land area surrounding our wells in order to prevent contamination of our drinking water supply. The Timberline Village wells are located off of Bearfoot Road in the Timberline Village community in Packwood, WA. This letter is intended to inform you of the location of our well and protection zone, and to serve as a reminder that any hazardous material put onto the ground or into your septic system has the potential of contaminating our drinking water supply. Some potentially harmful activities to avoid are:

- Improper use of a septic system (dumping paint, household cleaners, or solvents into your septic system).
- Dumping motor oil, gasoline, antifreeze or similar fluids onto the ground.
- Heavy use of fertilizers and pesticides.
- Dumping or burying garbage in the ground.

Any unwanted or unused household hazardous materials (like those mentioned above) can be disposed of at the Lewis County Central Transfer Station, 1411 S. Tower Ave., Centralia, WA 98531. Call 360-740-1451 for details, hours of operation, etc.

We are fortunate to have a very good supply of high quality water. It should be everyone's intent to keep it that way for our continued good use, and for the ones that come along after us. Thank you for following these guidelines. If you have any questions about this matter, please feel free to contact Kim Gubbe, Director of Planning and Compliance at Thurston PUD 360-357-8783 ext. 125.

Tips to Avoid Septic System Trouble:

- DO take leftover household chemicals to a hazardous waste collection center for disposal.
- DO practice water conservation. Repair dripping faucets and leaking toilets, run dishwashers and washing machines only when full.
- DO learn the location of your septic system and drain field.
- DO watch Washington State Department of Health Septic System Basics 101 at:
 - o https://www.doh.wa.gov/CommunityandEnvironment/WastewaterManagement/SepticSystem/101SepticBasicsVideo
- DON'T allow anyone to drive or park over any part of the system. Areas should be left undisturbed with only a mowed grass cover. Roots from nearby trees or shrubs may clog and damage your drain lines.
- DON'T use commercial septic tank additives. These products usually do not help and some may hurt your system in the long run.
- DON'T poison your system by pouring chemicals down the drain. They can kill the beneficial bacteria that treat your wastewater.

What are Wellhead Protection areas?

A wellhead protection area (WHPA) is defined as the surface and subsurface area surrounding a well or wellfield that contaminants are likely to pass through and eventually reach the well(s). Most of the land in any WHPA is not owned or managed by the utility so emphasizing good stewardship and local regulations is important to protect the source and those who drink those who drink that well water

WHPA are divided into time periods. Each area represents the length of time it would take a molecule of water to travel from the area boundary to the well.

- The sanitary control area is the area immediately around the wellhead and requires protection from direct contamination.
- 1 Year includes the area that it would take a molecule of water 1 year or less to reach the well. This area is managed to protect drinking water supplies from viral, microbial, and direct chemical contamination. The 1- year area also includes the six-month time of travel.
- 5 years includes the area it would take a molecule of water 5 years or less to reach the well. This area is managed to control potential chemical contaminants.
- 10 years includes the area that it would take a molecule of water 10 years or less to reach the well. This area is managed to recognize the long-term source of drinking water and potential contamination of that source.
- A buffer zone is an area beyond the 10- year area that potentially includes the entire area that contributes water to the well source (zone of contribution). The buffer zone may include non-adjacent critical groundwater recharge areas.

What are threats facing wells?

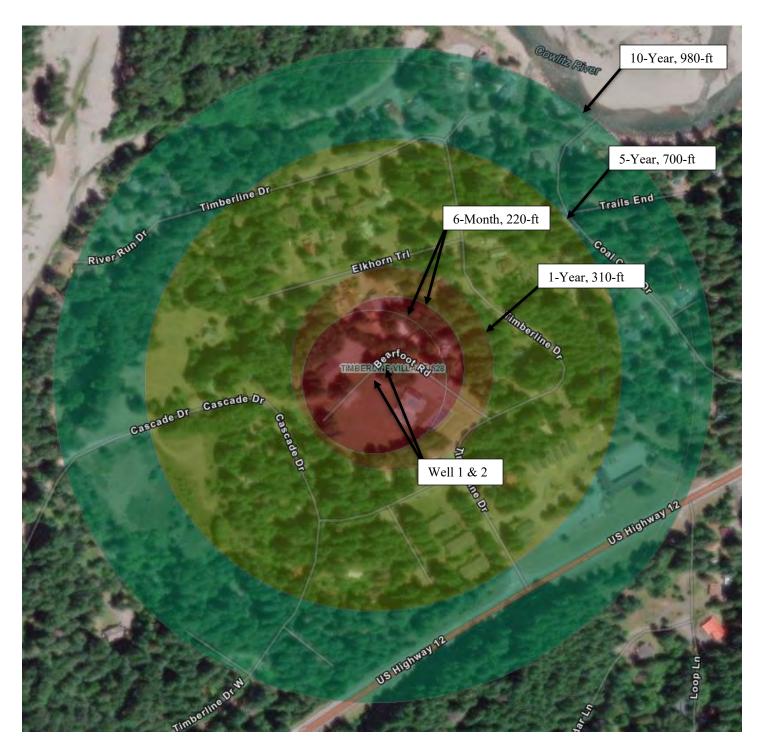
There are a number of threats to wells, including:

- Improperly disposed of chemicals.
- Animal wastes.
- Pesticides.
- Human threats.
- Wastes injected underground.
- Naturally occurring substances.
 (Source: Safe Drinking Water Act.)

What are the costs of contamination?

Put simply, contamination is very expensive. It is considerably more cost-effective to implement a proactive pollution prevention program to guard against groundwater contamination rather than clean up contamination. Costs for a water system with a contaminated source can include purchase of water while locating an alternate supply, hydrogeologic studies to locate alternate source water, and remediation costs

Source: WA State DOH Source Water Protection Fact Sheet 331-634 7/31/2018



Timberline Village 628: Well Head Protection Areas

Appendix 10.9 Cross Connection Control

Lot#	Cross Connection	Lot Addr	Lot City	Acct #	email
18371		0 FOREST RIDGE DR	WHITE PASS	025723-000	Itdechant@msn.com
12652	10/26/2022	134 RED CEDAR LN	PACKWOOD	027079-000	hello@riverlakeestates.com
12653		109 RIDGE LN	PACKWOOD	017540-000	
12655		133 CASCADE DR	PACKWOOD	017542-000	kristin7429@comcast.net
12656		124 ELKHORN TRAIL	PACKWOOD	017543-000	HICKMAN_WA@YAHOO.COM
12657	•	112 HUCKLEBERRY LN	PACKWOOD	017544-000	PUCHALLA4@MSN.COM
12661		108 RIVER RUN DR	PACKWOOD	017548-000	YAKIMABRIAN@MSN.COM
12697	,	107 VIEW PL	PACKWOOD	017584-000	PRATT_LISA@HOTMAIL.COM
12699)	107 FIR PARK LN	WHITE PASS	017586-000	SSANTHUFF@HOTMAIL.COM
12700	10/18/2021	104 LONG BRANCH LN	WHITE PASS	026161-000	PROPERTIESBYRLS@GMAIL.COM
12701		168 TIMBERLINE DR	PACKWOOD	017587-000	AKEK92@COMCAST.NET
12702		177 SUMMIT DR	WHITE PASS	017588-000	
12704		110 ELKHORN TRAIL	WHITE PASS	025774-000	DEHEARON@COMCAST.NET
12709		131 SUMMIT DR	WHITE PASS	017593-000	
12712		126 ELKHORN TRL	WHITE PASS	017596-000	JTWILK@COMCAST.NET
12759		107 HUCKLEBERRY LN	WHITE PASS	017642-000	LYNN@W-INS.COM
12772		215 FOREST RIDGE DR	WHITE PASS	017655-000	shirley@bonairwine.com
12777		102 DEER PARK LN	WHITE PASS	017660-000	moneil2245@aol.com
12798		165 SUMMIT DR	WHITE PASS	017677-000	CPCARLSON2@CENTURYTEL.NET
12806		177 TIMBERLINE DR	WHITE PASS	026454-000	EATSUBS@AOL.COM
12807		117 RED CEDAR LN	WHITE PASS	023285-000	KRISTEN.HILLIER@GMAIL.COM
12812 12817		124 FOREST RIDGE DR 112 CASCADE DR	PACKWOOD WHITE PASS	026631-000 025373-000	RYAN_MCNELIS@HOTMAIL.COM KERRYJOEB@COMCAST.NET
12818		107 RED CEDAR LN	PACKWOOD	023373-000	CAITLINCH@GMAIL.COM
12819		109 FOREST RIDGE DR	WHITE PASS	017697-000	SCOTTMENEFEE70@GMAIL.COM
12820		103 FOREST RIDGE RD	WHITE PASS	017697-001	SCOTTMENEFEE70@GMAIL.COM
12821		132 GRIZZLY RD	PACKWOOD	023273-000	BLAKNEYADAM@GMAIL.COM
12822		134 GRIZZLY RD	PACKWOOD	026548-000	
12834		128 TIMBERLINE DR	WHITE PASS	017711-000	
12964	12/19/2018	156 TIMBERLINE DR	PACKWOOD	022137-000	JEFFH@CITATIONMGT.COM
12965		116 FIR PARK LN	WHITE PASS	017837-000	MARCANDSALLY@gmail.com
12966		202 FOREST RIDGE DR	WHITE PASS	017838-000	MARK.A.VINSON@COMCAST.NET
12967	,	103 FOREST LN	WHITE PASS	017839-000	bettyalongi@comcast.net
12968	10/12/2021	107 FOREST LN	PACKWOOD	026158-000	GJSTARIHA@HOTMAIL.COM
12970)	104 ALDERWOOD LN	PACKWOOD	017841-000	CSJNWILSON@AOL.COM
12972		119 TIMBERLINE DR W	WHITE PASS	017842-000	TASHMORE@NWLINK.COM
12973		106 FOREST LN	WHITE PASS	017843-000	CPPFEIFER@HOTMAIL.COM
12974	•	144 TIMBERLINE DR	WHITE PASS	017844-000	DESMOQUATTRO@MSN.COM
12975	9/24/2021	0 TIMBER TRL	WHITE PASS	025680-000	JMBARNEY56@COMAST.NET
12976		148 TIMBERLINE DR	WHITE PASS	017846-000	VHBASIL32@GMAIL.COM
12977		136 COAL CREEK DR	WHITE PASS	017847-000	
12978		109 COTTONWOOD RD	WHITE PASS	026518-000	PAEDEN206@GMAIL.COM
12979		102 RIVER RUN DR	PACKWOOD	017849-000	wsfchief@hotmail.com
12980		189 TIMBERLINE DR	WHITE PASS	017850-000	j.bennison1@gmail.com

12981	10/1/2021	122	ELKHORN TRAIL	WHITE PASS	026116-000	RTVROMAN@YAHOO.COM
12982			CASCADE DR	WHITE PASS	026777-000	gretalikegarbo@gmail.com
12983			TIMBERLINE DR	WHITE PASS	017853-000	DNP@COMPPRIME.COM
12984		150	COAL CREEK DR	WHITE PASS	017854-000	athenabrad@hotmail.com
12985		114	FIR PARK LN	WHITE PASS	017855-000	maryand.ole@gmail.com
12986		187	TIMBERLINE DR	WHITE PASS	017856-000	LABANCROFT@HOTMAIL.COM
12988		100	TIMBER TRAIL	WHITE PASS	017858-000	brownde80@gmail.com
12989		131	COAL CREEK DR	WHITE PASS	017859-000	jburke@centurytel.net
12990		133	COAL CREEK DR	WHITE PASS	017859-001	jburke@centurytel.net
12991		163	COAL CREEK DR	PACKWOOD	017860-000	KCAVIEZEL@ICLOUD.COM
12992		157	COAL CREEK DR	WHITE PASS	017861-000	ontapps@me.com
12993		115	TIMBER TRAIL	WHITE PASS	017862-000	CANNGARY@GMAIL.COM
12994		110	BEARFOOT RD	WHITE PASS	017863-000	
12995		104	FOREST LN	PACKWOOD	017864-000	pdcemulini@gmail.com
12996		104	TIMBER TRAIL	PACKWOOD	017865-000	3PEASNAPOD@CEDARCOMM.CON
12998		193	TIMBERLINE DR W	WHITE PASS	017866-001	CYNTHIACOBLE@COMCAST.NET
12999		103	LOOP LN	WHITE PASS	017867-000	
13000	5/15/2018	116	CASCADE DR	PACKWOOD	021355-000	bigskyjl@yahoo.com
13001		126	TIMBERLINE DR	WHITE PASS	017869-000	TUT264@GMAIL.COM
13002		104	LOOP LN	WHITE PASS	017870-000	SARABLAKESLEE@HARBORNET.CC
13003			TIMBERLINE DR	WHITE PASS	017871-000	derricklakeman@gmail.com
13004			FIR PARK LN	WHITE PASS	017872-000	TMNORTHSTROM@COMCAST.NE
13005			CASCADE DR	WHITE PASS	017873-000	FICKASSOC@HOTMAIL.COM
13006			TIMBERLINE DR W	WHITE PASS	017874-000	JDDINES@MSN.COM
13007			TIMBERLINE DR W	WHITE PASS	017875-000	
13008			COAL CREEK DR	WHITE PASS	017876-000	lolajune@comcast.net
13009			ELKHORN TR	WHITE PASS	017877-000	MLCELL@WAVECABLE.COM
13011			LOOP LN	WHITE PASS	017878-000	spencito@gmail.com
13012			COTTONWOOD RD	PACKWOOD	017879-000	jhgreves@aol.com
13013			TIMBERLINE DR W	PACKWOOD	017880-000	JEACKER@HOTMAIL.COM
13014			TIMBERLINE DR W	WHITE PASS	017881-000	legenberger@aol.com
13015	-11		COTTONWOOD RD	WHITE PASS	017882-000	jeanne_ehlers@yahoo.com
13016	7/15/2022		ELKHORN TRAIL	WHITE PASS	026841-000	k.a.kipp@hotmail.com
13017			LOOP LN	WHITE PASS	017884-000	
13018			TIMBER TRAIL	WHITE PASS	017885-000	andy.evanger@mac.com andy.ev
13019	4/0/2040		TIMBERLINE DR W	WHITE PASS	017886-000	ANNENICHOLAS@COMCAST.NET
13020			FIR PARK LN	PACKWOOD	022304-000	tcooney59@hotmail.com
13021	8/12/2021		COTTONWOOD RD	WHITE PASS	025882-000	LSPRINGER55@HOTMAIL.COM
13022			HUCKLEBERRY LN	WHITE PASS	017889-000	
13024			TRAILS END	WHITE PASS	017890-000	captfuzz@comcast.net
13025			FOREST RIDGE DR	PACKWOOD	017891-000	BRIANFELT@GMAIL.COM
13026			HUCKLEBERRY LN	WHITE PASS	017892-000	DENDETEDS ON A COMPONET NET
13027			T 32 FOREST RIDGE DR	WHITE PASS	017893-000	RENPETERSON@COMCAST.NET
13028	11/1/2021		FOREST RIDGE DR	WHITE PASS	017894-000	pendleton.d@hotmail.com
13029			TIMBERLINE DR	WHITE PASS	026197-000	MER.RASCHE@GMAIL.COM
13030	2/10/2021		HUCKLEBERRY LN	WHITE PASS	023633-000	AMFREDERICKS@YAHOO.COM
13031		102	FOREST LN	PACKWOOD	017897-000	

13032	147 FOREST RIDGE DR	WHITE PASS	017898-000	GRANT.CAUSTON@GMAIL.COM
13033	175 TIMBERLINE DR W	WHITE PASS	017899-000	joell0404@centurylink.net
13034	135 TIMBERLINE DR W	WHITE PASS	017900-000	DRC@DCLOUDLAW.COM
13035	125 FOREST RIDGE DR	WHITE PASS	017901-000	ROZ@BBSIGNCO.COM
13037	110 CASCADE DR	WHITE PASS	017903-000	DAVID.TODD@EASYSTREET.NET
	2021 109 CASCADE DR	WHITE PASS	023620-000	MATT.REED.SINGLETON@GMAIL.(
13039	112 ELKHORN TR	WHITE PASS	017905-000	DEHEARON@COMCAST.NET
13040	113 TRAILS END	WHITE PASS	017906-000	Brett@hesterlawgroup.com
13041	142 COAL CREEK DR	WHITE PASS	017907-000	HELLY13@AOL.COM
13042	112 BEARFOOT RD	WHITE PASS	017908-000	happyhoofervw@msn.com
13043	137 TIMBERLINE DR	PACKWOOD	017909-000	SHORN77@CHARTER.NET
13044	106 CEDAR RD	WHITE PASS	017910-000	t90mom@aol.com
13045	109 ELKHORN TRAIL	WHITE PASS	017911-000	earlwh@centurytel.net
13046	104 BEARFOOT RD	WHITE PASS	023233-000	pamela.hubert@comcast.net
13047	119 ELKHORN TRAIL	WHITE PASS	017913-000	HOVELAND1@COMCAST.NET
13048	138 COAL CREEK DR	WHITE PASS	017914-000	DEHUG81697@msn.COM
13049	154 TIMBERLINE DR	WHITE PASS	017915-000	JIM@MCVITTIE-LAW.COM
13050	134 TIMBERLINE DR	WHITE PASS	017916-000	LANCEMCC22@GMAIL.COM
13051	103 HEMLOCK PL	WHITE PASS	025688-000	CHAD@HARBORGREENSMARKET.
13052	172 TIMBERLINE DR	WHITE PASS	017918-000	ddehopemed@aol.com
	2021 108 BEARFOOT RD	WHITE PASS	025520-000	ZACHARY.A.MARTIN@GMAIL.CON
13054	175 TIMBERLINE DR	PACKWOOD	017920-000	27 term attraction attraction at the contraction at
	2021 113 HUCKLEBERRY LN	PACKWOOD	025734-000	heverwood@nventure.com
13056	104 VIEW RIDGE	PACKWOOD	017922-000	KELLYHARADER@GMAIL.COM
				_
13057	100 HEMLOCK PL	PACKWOOD	017923-000	DTKILLAM@MSN.COM
13058	110 HUCKLEBERRY LN	PACKWOOD	017924-000	hickbj@comcast.net
13059	155 TIMBERLINE DR	PACKWOOD	017925-000	mlynnprice@outlook.com
13060	167 FOREST RIDGE DR	PACKWOOD	017926-000	MEANWOOD@MSN.COM
13062	104 TRAILS END	PACKWOOD	017928-000	tkduggan@hotmail.com
13063 7/28/2	2022 171 TIMBERLINE DR	PACKWOOD	026857-000	PARADISEPINES.WA@GMAIL.CON
13064	104 TIMBERLINE DR W	PACKWOOD	017930-000	omanos@TACOMA.K12.WA.US
13065	162 COAL CREEK DR	PACKWOOD	017931-000	deblean@comcast.net
13067	113 CASCADE DR	PACKWOOD	017932-000	ronald.leighton@wawd.uscourts.g
13068	102 VIEW RIDGE RD	PACKWOOD	017933-000	jherrin@worthlawgroup.com
	2022 108 COTTONWOOD RD	PACKWOOD	026935-000	wruhoff@gmail.com
	2021 164-B TIMBERLINE DR	WHITE PASS	025995-000	FOSONVACATION@GMAIL.COM
	2020 162 TIMBERLINE DR	WHITE PASS	023516-000	lisamlauer@gmail.com
13072	145 COAL CREEK DR	PACKWOOD	017937-000	LARAJHARKER@GMAIL.COM
13073	157 TIMBERLINE DR	PACKWOOD	017938-000	JJSANKOVICH@MSN.COM
13074	140 RED CEDAR LN	PACKWOOD	017939-000	THERMSEN1@EXCITE.COM
13075	124 TIMBERLINE DR	PACKWOOD	017940-000	hmartin585@earthlink.net
13076	LOT 65 FIR PARK LANE	WHITE PASS	017941-000	clemmons12@comcast.net
13077	185 TIMBERLINE DR W	PACKWOOD	017942-000	DAVE.KRIZAN@GMAIL.COM
13078	124 TIMBER TRAIL	PACKWOOD	017943-000	OLYMCDONALD@COMCAST.NET
13079 4/18/2	2022 122 TIMBERLINE DR W	PACKWOOD	026590-000	KEVIN.MCGOFFIN@GMAIL.COM
13080 5/13/2	2020 114 TIMBER TRAIL	PACKWOOD	023072-000	neng.valerie@gmail.com
13081 2/28/2	2023 101 VIEW RIDGE RD	PACKWOOD	027256-000	juliec2834@msn.com

13082	103 LONG BRANCH LN	PACKWOOD	017947-000	maryloukelly@gmail.com
13083 8/20/2020	114 BEARFOOT RD	WHITE PASS	023280-000	MADISON.STONEMAN@GMAIL.CC
	108 PONDEROSA RD	PACKWOOD	027122-000	OPERAHONS@H2OAWAY.COM
	. 119 TIMBERLINE DR	WHITE PASS	026152-000	BRAMG7@GMAIL.COM
13086	107 COTTONWOOD RD	PACKWOOD	017951-000	STE2MILLS@GMAIL.COM
13087 2/16/2022	108 A TIMBERLINE DR	WHITE PASS	023428-000	chrisslunt@gmail.com
13088	164 C TIMBERLINE DR	PACKWOOD	017952-001	kraichandani@gmail.com
13090	126 TIMBERLINE DR W	PACKWOOD	017954-000	AMCDONALD@SAVAGEWHOLESA
13091	104 FOREST RIDGE DR	PACKWOOD	017955-000	dtapper@comcast.net lisam@wir
13093	152 TIMBERLINE DR	PACKWOOD	017956-000	STEVENALBERT4@YAHOO.COM
13095 2/15/2019	108 ALDERWOOD LN	PACKWOOD	022206-000	BLCART2176@ICLOUD.COM
13096	108-2 PONDEROSA CT	PACKWOOD	017959-000	TOMPASQUIER@COMCAST.NET
13098	103 BEARFOOT RD	PACKWOOD	017961-000	C_PEISCHL@COMCAST.NET
13099	102 LOOP LN	PACKWOOD	017962-000	neng.valerie@gmail.com
13100	132 TIMBERLINE DR	PACKWOOD	017963-000	
13101	LOT 11 TIMBERLINE DR	PACKWOOD	017964-000	
13102	104 PONDEROSA RD	PACKWOOD	017965-000	ptpetrich@comcast.net
13103	107 CASCADE DR	WHITE PASS	022784-000	NASH4111@GMAIL.COM
13104	115 TRAILS END DR	PACKWOOD	017967-000	kjeanp@lewiscounty.com
13105	111 CASCADE DR	PACKWOOD	017968-000	GRACESPENCE78@HOTMAIL.COM
13106	147 TIMBERLINE DR	PACKWOOD	017969-000	
13107	193 TIMBERLINE DR	PACKWOOD	017970-000	DutchHarbor10@gmail.com
13108	196 TIMBERLINE DR	PACKWOOD	017971-000	enzian@centurylink.net chuck.m.
13109 3/15/2018	146 COAL CREEK DR	PACKWOOD	021199-000	angelahorwath@gmail.com
13110	130 TIMBERLINE DR W	PACKWOOD	017973-000	LEIDAY@COMCAST.NET
13111	13832 US HIGHWAY 12	PACKWOOD	017974-000	
13112	103 ALDERWOOD LN	PACKWOOD	017975-000	donandlynane@hotmail.com
13113	125 TIMBERLINE DR W	PACKWOOD	017976-000	burdettfamily@comcast.net
13114	114 LOOP LANE	PACKWOOD	017977-000	MDROBBINS01@COMCAST.NET
13115	170 COAL CREEK DR	PACKWOOD	017978-000	amigo@lewiscounty.com
13116 11/18/2021	100 TIMBERLINE DR W	WHITE PASS	026258-000	MRIGANK.NAGAR@GMAIL.COM
13117	141 COAL CREEK DR	PACKWOOD	017980-000	NIXOLY@HOTMAIL.COM
13118	106 COTTONWOOD RD	PACKWOOD	017981-000	DANRUBIDA@COMCAST.NET
13119	149 FOREST RIDGE DR	PACKWOOD	017982-000	
13120	109 TRAILS END	PACKWOOD	017983-000	
• •	104 RIVER RUN DR W	PACKWOOD	027011-000	greg.whitman@comcast.net
• •	. 180 FOREST RIDGE DR	WHITE PASS	023605-000	BRAGEMICHAEL@YAHOO.COM
13124	102 CASCADE DR	PACKWOOD	017987-000	emetsker@gmail.com
13125	179 TIMBERLINE DR W	PACKWOOD	017988-000	scott.silver121@gmail.com
13126	121 TIMBER TRAIL	PACKWOOD	017989-000	
13127	165 COAL CREEK DR	PACKWOOD	017990-000	
13128	111 ELKHORN TRAIL	PACKWOOD	017991-000	romaredds@gmail.com
· ·	109 ALDERWOOD LN	PACKWOOD	026598-000	DAVESTAMEY@HOTMAIL.COM
13130	142 TIMBERLINE DR	PACKWOOD	017993-000	MICHAEL.STERBICK@GMAIL.COM
13131	101 CASCADE DR	PACKWOOD	017994-000	corvairgo72@gmail.com
13132	100 VIEW RIDGE RD	PACKWOOD	017995-000	maryjanerumley43@gmail.com
13133	120 TIMBERLINE DR	PACKWOOD	017996-000	

13134		106	LONG BRANCH LN	PACKWOOD	017997-000	
13135	7/22/2019	166	TIMBERLINE DR	PACKWOOD	022516-000	jleventon@comcast.net
13136		134	TIMBERLINE DR W	PACKWOOD	017999-000	blackbird2002@excite.com
13137		13/	COAL CREEK DR	PACKWOOD	018000-000	G
				PACKWOOD	018000-000	NACCANEDIV & CONACACT NET
13138			TRAILS END			MEGANERIK@COMCAST.NET
13139			TIMBERLINE DR	PACKWOOD	018002-000	T.TEBB@COMCAST.NET
13140		109	TIMBER TRAIL	PACKWOOD	018003-000	jonipt@msn.com
13141		1380	07 US HWY 12	PACKWOOD	026625-000	JENNY@FRANKHOTELS.COM
13142	4/27/2022	1380	07 US HWY 12	PACKWOOD	026626-000	JENNY@FRANKHOTELS.COM
13143		106	TIMBERLINE DR W	PACKWOOD	018005-000	SHERRYLSALES@COMCAST.NET
13144	12/2/2021		ELKHORN TRAIL	PACKWOOD	026291-000	CHIANDKAREN@GMAIL.COM
13145	12,2,2021		BEARFOOT RD	PACKWOOD	018007-000	CITIVATE OF THE CONTROL OF THE CONTR
13146			TIMBER TRAIL	PACKWOOD	018008-000	jayneandjim@gmail.com jmccartr
13147			FOREST RIDGE DR	PACKWOOD	018009-000	wondermm1001@yahoo.com
13148		208	FOREST RIDGE DR	PACKWOOD	018010-000	cbloomrn@comast.net
13151	6/25/2018	105	CEDAR RD	PACKWOOD	021508-000	noelwall@outlook.com
13152		140	COAL CREEK DR	PACKWOOD	018014-000	JIMLEINAN@GMAIL.COM
13154		118	TIMBERLINE DR W	PACKWOOD	018016-000	erinmetschke@gmail.com
13155	8/24/2020		COAL CREEK DR	PACKWOOD	023297-000	akrapaczwa@aol.com
13156	0/24/2020		COAL CREEK DR	PACKWOOD	018018-000	aki apaczwa @ aoi.com
13157			TIMBERLINE DR	PACKWOOD	018019-000	
13158			TIMBERLINE DR	PACKWOOD	018020-000	whitepasswatts@gmail.com
13159		102	FOREST LN	PACKWOOD	018021-000	KELLYMILLERMICHAL@GMAIL.COI
13160		139	TIMBERLINE DR W	PACKWOOD	018022-000	burbman97@msn.com
13161	12/15/2021	131	TIMBERLINE DR W	PACKWOOD	026316-000	FCPROPS28@GMAIL.COM
13162			FOREST RIDGE DR	PACKWOOD	018024-000	PMASLEN@HOTMAIL.COM
13164			HUCKLEBERRY LN	PACKWOOD	018025-000	doug.baugh@paccar.com
13165			TRAILS END	PACKWOOD	018025-000	
						MACKYOUNGS@YAHOO.COM
13166			FOREST RIDGE DR	PACKWOOD	018027-000	
13167		102	FIR PARK LN	PACKWOOD	018028-000	MEGANLYONS0828@GMAIL.COM
13168		107	BEARFOOT RD	PACKWOOD	018029-000	MFMETSKER@COMCAST.NET pau
13169	7/20/2020	138	RED CEDAR LN	WHITE PASS	023204-000	manderson@artanderson.com
13170		169	SUMMIT RD	PACKWOOD	018031-000	SUEZW22@GMAIL.COM
13171		181	SUMMIT DR	PACKWOOD	018032-000	shall@seanet.com
13172			COAL CREEK DR	PACKWOOD	018033-000	cindyvanhoosen@yahoo.com
13173	5/13/2021		LONG BRANCH LN	WHITE PASS	025649-000	MEGANTENBEIN@COMCAST.NET
	3/13/2021					
13174			TIMBERLINE DR W	PACKWOOD	018035-000	orrin.musser@gmail.com
13175			SUMMIT DR	PACKWOOD	018036-000	
13176		183	SUMMIT DR	PACKWOOD	018037-000	madelinerobinette@gmail.com
13177		179	SUMMIT DR	PACKWOOD	018038-000	MILLERLL@COMCAST.NET
13178		104	RIDGE LN	PACKWOOD	018039-000	ronnrenee@comcast.net
13179			VIEW PL	PACKWOOD	018040-000	SMDULIN@COMCAST.NET
13180			TIMBERLINE DR	PACKWOOD	018041-000	greg@suplinen.com
13181	12/7/2021		ELKHORN TRAIL	PACKWOOD	026287-000	LAUER.MICHAEL@GMAIL.COM
	12/1/2021					
13182			FOREST RIDGE DR	PACKWOOD	018043-000	botero_taiwo@yahoo.com
13184	- 4.		TIMBERLINE DR	PACKWOOD	018045-000	
13185	9/11/2018	113	TIMBER TRAIL	PACKWOOD	021902-000	awestling@comcast.net

13186		106	TIMBER TRAIL	PACKWOOD	018047-000	alexa@moosewoodmanor.net
13187	9/2/2020	106	VIEW PL	WHITE PASS	023354-000	TIMS@GTH-GOV.COM
13188		112	RIDGE LN	PACKWOOD	018049-000	rwmiddleton@me.com
13190	8/6/2018	167	SUMMIT DR	PACKWOOD	021694-000	wpskiinstr@yahoo.com
13191		106	RIVER RUN DR	PACKWOOD	018051-000	WATTLESSC@COMCAST.NET
13192		173	SUMMIT DR	PACKWOOD	018052-000	HFWALTER@CENTURYTEL.NET
13193	7/20/2020	104	MT TAHOMA DR	WHITE PASS	023205-000	jeanevahallett@gmail.com
13195	8/13/2020	178	SUMMIT DR	WHITE PASS	023284-000	MRSBETSYDAWN12@GMAIL.COM
13197	8/12/2019	112	FIR PARK LN	PACKWOOD	022559-000	cheriehess@comcast.net
13198		102	VIEW PLACE	PACKWOOD	018058-000	4.weeks@comcast.net
13199		175	FOREST RIDGE DR	PACKWOOD	018059-000	A240GORDY@COMCAST.NET
13200	5/25/2022	112	RIVER RUN DR	PACKWOOD	026728-000	tracirush13@yahoo.com
13201			SUMMIT DRIVE	PACKWOOD	023411-000	brittanyrkittle@gmail.com
13202	7/25/2022		CASCADE DR	PACKWOOD	026852-000	mike.mayer10@gmail.com
13203			VIEW RIDGE	PACKWOOD	022909-000	tkfhome@yahoo.com
13204	7/5/2019		& 110 FOREST RIDGE D		022467-000	WILDREDFISH@MSN.COM
13205			FOREST RIDGE DR	PACKWOOD	018065-000	Itdechant@msn.com
13207			DEER PARK LN	PACKWOOD	018066-000	CJFAWLEY@HOTMAIL.COM
13208			SUMMIT DR	PACKWOOD	018067-000	
13210			TIMBERLINE DR	PACKWOOD	018069-000	DNSSALTY@AOL.COM
13213			SUMMIT DR	PACKWOOD	018071-000	BMOLT@PAPERCO.COM
13214			SUMMIT DR	PACKWOOD	018072-000	kenjudkat@charter.net
13215			RIDGE LANE	PACKWOOD	018073-000	thatcher.drew@comcast.net
13216			FOREST RIDGE DR	PACKWOOD	018074-000	bjh2@me.com BRIANHURLEY@C(
13217			SUMMIT DR	PACKWOOD	018075-000	drwornell@comcast.net shellmsw
13218	2/22/2024		DEER PARK LN	PACKWOOD	018076-000	JULIE KALAR@KW.COM
13219	3/23/2021		TIMBERLINE DR	PACKWOOD	025496-000	DLAPOINT9@GMAIL.COM
13220			RED CEDAR LN	PACKWOOD	018078-000	elm.view@yahoo.com
13221			RED CEDAR LN	PACKWOOD	018078-001	elm.view@yahoo.com
13222			1-A TIMBERLINE DR	PACKWOOD	018079-000	
13223	4/22/2021		FOREST RIDGE	PACKWOOD	018080-000	
	4/22/2021		COAL CREEK DR DEER PARK LN	WHITE PASS	025562-000	JARISANICOLLE@MSN.COM
13225 13226			·12 TIMBERLINE DR W	PACKWOOD PACKWOOD	018082-000 018083-000	screeb4@comcast.net
13227	11/0/2020		TIMBERLINE DR W	WHITE PASS	023472-000	ARIELLEMCHANEY@GMAIL.COM
14076	11/0/2020		TIMBERLINE DR	PACKWOOD	018925-000	SHER223@COMCAST.NET
14324	4/7/2020		DEER PARK LN	WHITE PASS	023058-000	tkohler@wlgore.com
14449	4/ / / 2020		DEER PARK LN	PACKWOOD	019235-000	KBAUMS@WAVECABLE.COM
14450	1/18/2021		DEER PARK LN	WHITE PASS	023588-000	DON@DLHENRICKSEN.COM
14451	1/10/2021		DEER PARK LN	PACKWOOD	019236-001	chixmobile@yahoo.com
14489			TIMBERLINE DR W	PACKWOOD	019274-000	greenjeans@harbornet.com
14513			SUMMIT DR	WHITE PASS	019274-000	aliiqbal08@gmail.com
14927			COAL CREEK DR	PACKWOOD	019297-000	cindi1220@comcast.net
16109			BEARFOOT RD	PACKWOOD	020851-000	CITALITZ ZO CONTICAS LINEL
16110			BEARFOOT RD	PACKWOOD	020851-000	
16340			FOREST RIDGE DR	PACKWOOD	020831-001	r.trombi@comcast.net
16436	11/0/2010		FOREST RIDGE DR	PACKWOOD	021073-001	MARK.WESTLING@RIGHTSYS.CON
10430	11/2/2018	TOT	I ONEST KIDGE DK	FACKWOOD	022003-000	INITINE TO STATE TO STATE OF THE STATE OF TH

16483	118 CASCADE DR	PACKWOOD	022394-000	timroisum@yahoo.com
16499	501 PONDEROSA RD	PACKWOOD	022524-000	MAREE@MOUNTAINVALLEYRE.CC
16523	0 LOOP LANE	PACKWOOD	022802-000	MFAMILY@KALAMA.COM
16535	0 LOOP LANE	PACKWOOD	022891-000	roger@hchomesinc.com shellytak
16542	0 US HWY 12	WHITE PASS	022934-000	ndgenterprisellc@gmail.com
16574	203 FOREST RIDGE DR	PACKWOOD	023075-000	irene.botero@gmail.com
16602	188 TIMBERLINE DR	PACKWOOD	023316-000	saselden@seldens.com
16606	123 CEDAR LANE	PACKWOOD	023386-000	r.trombi@comcast.net
16626	0 RED CEDAR LN	PACKWOOD	026530-000	
16633	133 RED CEDAR LN	PACKWOOD	023594-000	stidhamcasey8@gmail.com
16634	134-58 GRIZZLY RD	PACKWOOD	023595-000	wildlife4343@yahoo.com
16637	0 LOOP LANE	WHITE PASS	023628-000	aaronespencer@gmail.com
16638	157 SUMMIT DRIVE	WHITE PASS	023634-000	cfpresnell@comcast.net
18265	0 GRIZZLY RD	PACKWOOD	025349-000	dcislim@qwestoffice.net
18367	O FIR PARK LANE	WHITE PASS	025697-000	dspwilson@aol.com
18368	0 US HWY 12	WHITE PASS	025704-000	azvonova@hotmail.com
18370	0 FOREST RIDGE RD	WHITE PASS	025722-000	jerryfeldmeier@icloud.com
18515	109 VIEW PL	PACKWOOD	026636-000	loony2@live.com
18516	TIMBERLINE ZONE METER	S	026637-000	
18545	0 TIMBERLINE DR W	WHITE PASS	026892-000	mspconst1@gmail.com
18550	0 RED CEDAR LN	PACKWOOD	026926-000	STIDHAMCASEY8@GMAIL.COM
18552	0 FIR PARK LN	WHITE PASS	026977-000	k.a.adams@hotmail.com
18363	0 FIR PARK LN	WHITE PASS	025656-000	DEBBIEBLACKSEMAIL@GMAIL.COI
12837	125 DEER PARK LN	PACKWOOD	017714-000	KBAUMS@WAVECABLE.COM
13194	101 FOREST RIDGE DR	PACKWOOD	018054-000	KURTMARQ@MAC.COM
13196	171 SUMMIT DR	PACKWOOD	018056-000	RICH@WELFRINGER.COM suezw2
14482	123 ELKHORN TRAIL	PACKWOOD	019267-000	tenfield48@gmail.com
16539	0 CASCADE DR.	PACKWOOD	022914-000	SSANTHUFF@HOTMAIL.COM
16601	115 RIDGE LANE	WHITE PASS	023315-000	penoyar@gmail.com
16612	105 HEMLOCK PL	WHITE PASS	023469-000	chad@harborgreensmarket.com
18376	103 RIDGE LANE	PACKWOOD	025791-000	MEL.STENNETT@GMAIL.COM
18510	0 COTTONWOOD RD	WHITE PASS	026533-000	paeden206@gmail.com
13211	104 TIMBERLINE DR	WHITE PASS	018069-001	DNSSALTY@AOL.COM
13212	110 RIDGE LN	PACKWOOD	018070-000	shall3533@gmail.com

Appendix 10.10 WSP Adoption Notice and Minutes