2019 Drinking Water Supply Report
Idaho Department of Environmental Quality

System: Bayview Water and Sewer District
PWS#: ID1280014 **County:** Kootenai **Date of Survey:** March 26, 2019
System Representatives Present at Survey: Bob Kuchenski
Surveyed by: Suzanne Scheidt, Senior Drinking Water Analyst
Sources: Wells 7 & 8
Water System Type: Community
Population: 1,162 **Service Connections:** 465 residential and commercial

A photographic log is enclosed with the narrative report.

System Overview

The Bayview Water and Sewer District (District) is a community public drinking water system (system) supplied by two wells drawing from the Rathdrum Prairie Aquifer. The system supplies five pressure zones via reservoirs and booster stations. A map of key system components, pressure zones and service areas is included at the conclusion of this report.

Wells are equipped with manual switch-over diesel generators, and most booster stations are equipped with propane generators with auto-switchover. The system maintains a one-way emergency intertie from neighboring Farragut State Park.

Voluntary chlorination of Cape Horn distribution components is provided via flow proportional injection at the Limekiln booster station.

Remote monitoring of central systems components is provided via supervisory control and data acquisition (SCADA). SCADA programming sends autodialer alarms to operators and District office staff in the event of system conditions such as well 7 and 8 failure to start, power loss, booster pump failure to start and communication failure. Battery back-up power to SCADA components is provided at well 7, Farragut tank, and the District office.

Source Water Assessment Reports for wells 7 and 8 may be reviewed and updated at:
http://www2.deq.idaho.gov/water/swaOnline/Search

Sources

Wells 7 and 8 were drilled with similar construction characteristics in the 1940s to supply the Farragut Naval Base. Wells are cited 1900 feet apart and individually discharge to a common 10-inch transmission main sized to accept combined well discharge to the Farragut tank. Well 7, the 10-inch transmission main and the Farragut tank were acquired by the District from the U.S. Navy in the 1970s under a 50-year lease. Well 8 was acquired by the District from the State of Idaho in the 1990s (the State of Idaho had previously acquired remaining original land and Farragut Naval infrastructure in the 1950s). The District operates and maintains well 8 under a 10-year permit requiring renewal in 2024.

Required setback distances between wells and potential sources of contamination are met. Well pedestals were found to be sealed, and well vent casings protected with 24-mesh screens.

Well discharge appurtenances include: raw water sample tap, flow meter, check valve, and isolation (gate valves). Flow meters installed on well 7 and 8 discharge are past due for calibration and evaluated as a deficiency requiring correction. Pressure relief valves are not installed on well discharge and evaluated as deficiencies requiring correction. Wells are not equipped with flow to waste; this is evaluated as a deficiency requiring correction at the time of next material modification.

Operation of wells 7 and 8 was recently modified to alternating lead/lag. Prior to this operational modification, well 7 serves as primary with well 8 as emergency back-up. Monitoring requirements have been updated to reflect this operational change.

As indicated, wells discharge via 10-inch transmission main to supply the Farragut tank. Torpedo casings were likely installed in conjunction with well construction to tamper pressure transients to the 10-inch main and reduce entrained air during well cycles. It is strongly recommended the efficacy of this configuration be further evaluated to determine if additional measures are required to minimize future impacts to transmission main between wells and Farragut tank.

Injection quills are installed on individual well discharge for emergency chlorination purposes if necessary. A 30 gallon day tank (empty) and electronic metering pump are housed within the well 7 building.

The Idaho Department of Water Resources issued a water right (95-9880) of 4.38 cfs for well 7 with a priority date of 7/17/1981 and a water right (95-9880) of 1.7 cfs for well 8.

Well 7 (E0005327)

As per available records, well 7 was constructed in the early 1940s to an approximate depth of 330 feet below ground surface. The “extra heavy wall oil well” 18-inch casing (0.875-inch wall thickness) was perforated at the bottom 67 feet. Static water level was reported at 223 feet bgs. Records reflect lithology below the static water level to consist of sands and gravels. It is unknown if the well was constructed with a surface seal. The well is enclosed in a building; entry is secured by a locked gate.

The vertical turbine line shaft well is equipped with a 125-hp soft start motor reported to have been re-built within the last 10 years. The pump lifts via an 8-inch pump column discharging at approximately 750 gpm. Water lube is provided via consistent distribution back-pressure routed through a flow restrictor. In the event flow is not detected, the primary logic controller will preclude the pump from energizing and an autodialer alarm sent to the operator via SCADA relay.

Well 8 (E0005328)

System records reflect well 8 was also constructed in the early 1940s. Well-specific construction documents are not available; however, it is assumed well 8 was similarly constructed to well 7. It is unknown if the well was constructed with a surface seal. The well is enclosed within a locked building.

The vertical turbine (oil-lubed NSF-H1 Chevron Food Grade 21) line shaft well is equipped with a 125-hp soft start motor also reported to have been re-built within the last 10 years. The pump lifts via an 8-inch pump column discharging at approximately 750 gpm.

The operator reported a minimum forty-five minute pre-lube period is required when well 8 is not routinely actuated. When routinely operated, pre-lube period is reduced to five minutes.

Distribution System

Distribution Main

Distribution main is constructed primarily of 6-inch PVC with some sections of 2-inch, 4-inch, and 8-inch diameter PVC or polyethylene pipelines. Sections of 8-inch cast iron are located within the vicinity of the naval facility; while sections of 5-inch steel line supply portions of Cape Horn Estates distribution zone. The Facility Plan indicates some sections of 2-inch main between lengths of larger diameter main create bottlenecks in distribution capacity.

The District has conducted in-depth review of non-revenue water and determined an estimated 50% loss. The current percentage of loss exceeds industry standard recommendations by 40%. Three potential causes have been identified as contributors:

1. Recent studies as reported in the 2018 Facility Plan reflect a high probability significant leakage of aging 10-inch transmission main between wells and the Farragut tank. This is evaluated as significant deficiency of Idaho Rules for Public Drinking Water Systems, IDAPA 58.01.08.542.10. A plan of correction for addressing this issue is required within 30 days of receipt of this report.
2. Many service meters are 40 years old, beyond their useful life and likely under-reporting. It is strongly recommended service meters be repaired or replaced to accurately measure non-revenue water in order to maintain financial resiliency of the system.
3. The US Navy Detachment facility is supplied via one 6-inch and two 8-inch unmetered connections. The facility is charged $600 per month for water and wastewater services. It is strongly recommended meters are installed at the facility to ensure the facility is adequately charged for metered usage.

Hydraulic modeling analyses indicate 40 psi maximum day demand cannot be met throughout distribution with specific pressure decreases observed in the Dromore distribution zone. This is evaluated as a deficiency requiring further evaluation and correction if necessary.

As per the system operator, all non-looped main segments terminate at service connections.

Pressure reducing valves (PRV) installed on distribution main are protected from freezing. A lack of routine servicing of PRVs presents a concern for unreliable operation and evaluated as a deficiency of the Rules requiring corrective action.

The operator is not aware of any air vacuum relief valves (AVR) installed on distribution main. In the event an AVR is located, the outlet is required to be raised above the ground water table, downturned and equipped with 24-mesh screen.

Fire Flow Requirements

Fire flow is established by the Timberlake Fire Protection District. Minimum fire flow requirements for one and two family dwellings (less than 3600 square feet) are 1000 gpm for 60 minutes. Fire flow requirements for other buildings are based on building area and construction type with minimum flow of 1500 gpm for prescribed duration. As reported in the 2018 Facility Plan, Chief Steele with Timberlake Fire Protection District indicated there is "always room for improvement but there are generally no glaring inadequacies on existing conditions for residential areas, with the exception of the inadequate 11,000 gallon tank in the Dromore area." The lack of adequate fire flow to the Dromore distribution zone is evaluated as a deficiency requiring corrective action.

Chief Steele also indicated the Fire District would prefer to see the following fire flows and duration be addressed in future water system improvements:

- Residential Areas (single family homes up to 3,600 SF): minimum fire flows of 1,000 gpm for one hour.
- Larger Residential/Commercial Areas: minimum fire flows of 1,500 gpm for two hours.

Fire hydrants within the Naval Detachment are not supplied by District infrastructure.

Emergency Intertie

A one-way intertie between Farragut State Park and the District may be utilized to supply the Bayview system on an emergency temporary basis. As the District operates at a lower main pressure, Farragut does not receive service from the intertie. While the two systems have been separated by a single gate valve since original Naval Base construction, in 2000 an electrically actuated solenoid valve was installed. Valve controls are housed in the well 8 building.

Pressure Zones

The District supplies three pressure zones within the Bayview area and two pressure zones within the Cape Horn Area.

Gravity Pressure Zone – Bayview Zone 1. This zone supplies approximately 40 connections via 4-inch and 6-inch main within in the southwest service boundary of the district via gravity from the Farragut tank. Distribution main pressures range from 70 to 100 psi.

Bayview Zone 2 – This zone is also supplied via gravity from the Farragut tank; however as services are at a lower elevation, water is first routed through a PRV. Distribution main is predominantly 4-inch and 6-inch with some segments of 8-inch main. Distribution main pressures range from 45 to 90 psi.

Dromore Zone – This zone supplies approximately 20 residential connections through 2-inch, 3-inch, 4-inch and 6-inch main; main pressure ranges from 25 to 70 psi. Boosted pressure is provided via Dromore booster station; the 11,000 gallon Dromore tank rides on the zone.

Cape Horn Zone 1 – This zone is supplied by boosted pressure via the Limekiln booster station through 6-inch and 8-inch mains constructed in 2002. Some original Cape Horn services are supplied via 2-inch, 4-inch and 5-inch steel mains. The 100,000 gallon Pend Oreille Pines tank rides on the zone. Pressure range from 45 to 120 psi with individual PRVs installed on service connections receiving pressures greater than 80 psi.

Pend Oreille Boosted Zone – this zone receives boosted pressure from the Pend Oreille Pines booster station drawing from the 100,000 gallon Pend Oreille Pines tank.

Upper Cape Horn Estates Zone 2 – This zone receives boosted pressure from Cape Horn booster station via 6-inch main constructed in 1973. The two 30,000 gallon Cape Horn Estates tanks ride on the zone. Pressure range from 50 to 70 psi. The zone is separated by Cape Horn Zone 1 by two PRVs set to open in the event of emergency to provide fire flow to Cape Horn Zone 1.

Farragut Tank

As indicated, wells 7 and 8 discharge via 10-inch designated transmission main to supply the 225,000 gallon concrete Farragut tank constructed to supply the Naval base in the 1940s. The tank was constructed with an elevated floor accessed via internal stair case.

The tank was cleaned and inspected by Aquadrone through deployment of a remote operated vehicle in November 2017. Inspection results indicated “widespread and significant failure in the coating on walls, floor and interior supports.”

Structural engineering evaluation completed in December 2017 indicated numerous cracks subject to leaks and posing damage to steel structural supports. Failure of coating and internal supports as well as numerous cracks and leaks are evaluated as a deficiency requiring corrective actions. Video supplied by Aquadrone inspection indicates the reservoir roof access hatch is not equipped with a water tight seal, and is evaluated as a significant deficiency requiring correction. Video does not include reservoir vent condition or adequate seals of roof control junction box, please provide photo-documentation of these items prior to May 31, 2019. The location of the overflow outlet is not known; and evaluated as a significant deficiency. The overflow is required to be located and if necessary modified to allow for the outlet to discharge to day light and equipped with a 4-mesh expandable mesh screen with weighted flapper or 24-mesh screen.

A level transducer with back-up pressure transducer are installed within the tank and tied to SCADA relay to actuate well pumps. A SCADA radio receiver installed on the tank communicates via relay with wells 7 and 8, Limekiln and Pend Oreille Pines booster stations, and Cape Horn Estates tank.

The reservoir may not be taken off line without subjecting the Bayview distribution zones to an unacceptable decrease in pressure.

Due to the apparent shared inflow/outflow piping configuration of the tank, there is a higher likelihood for stagnant water concerns in the tank. It is recommended this is considered when evaluating operational level set points.

Limekiln Booster Station

The Limekiln booster station provides initial boosted pressure from the Bayview lower gravity zone to Cape Horn, Pend Oreille and Upper Cape Horn pressure zones. Two 40-hp pumps discharging at 350 gpm each supply boosted pressure to 8-inch HDPE main. The 8-inch main is routed approximately 1 ½ miles along lake depth adjacent to the shoreline. The submerged main was inspected via Aquadrone in 2017 and found to be in good condition.

Pumps are equipped with upstream and downstream isolation valves. Pressure gages are provided on manifold of pump inlets and outlets. An instantaneous and totalizing flow meter is installed on boosted discharge. A pressure relief valve is not provided on boosted discharge and evaluated as a deficiency requiring corrective action.

Remote operation and oversight of the PLC is provided via SCADA relay with back-up battery power. SCADA is programmed to provide auto-dialer alarms to the operator in the event of low/high pressures, power loss, etc. The booster station is equipped with back-up power via propane generator with automatic switchover.

The locked booster station is equipped with adequate heat, ventilation and floor drain.

Sodium hypochlorite injection is provided to boosted discharge via a flow proportional electronic metering pump drawing from a sodium hypochlorite day tank. The metering pump is paced via instantaneous flow meter signal provided through the PLC. The 30 gallon day tank is equipped with secondary containment.

Dromore Tank

The Dromore 11,000 gallon welded steel tank was constructed in late 1970's - early 1980's and gravity supplies 20 homes in the northeast portion of Bayview. The tank rides on the Dromore boosted pressure zone.

The tank was inaccessible at the time of the survey. The 2018 Facility Plan indicates float controls are assumed to be installed in the tank to actuate the Dromore booster pumps in alternating lead/lag. The plan also states there are taste complaints in the Dromore zone with customer reports of black flakes. An above grade discharge pipe is wrapped in insulation;

however, reportedly susceptible to freezing.

Photo-documentation of the adequately protected overflow outlet, screened vent and access hatches equipped with internal seals must be provided to DEQ prior to May 31, 2019.

Dromore Booster Station

The Dromore booster station is located adjacent to supply the Dromore tank. Two 3-hp pumps discharging at 50 gpm each are equipped with upstream and downstream isolation valves. A sample tap is provided on boosted discharge.

A pressure gage is provided on the suction line; an additional gage is required on boosted discharge. A pressure relief valve is required to be installed on the boosted discharge and evaluated as a deficiency.

The locked booster station is equipped with adequate heat, ventilation and floor drain. The station is not equipped with back-up power as recommended.

Pend Oreille Pines Tank

The Pend Oreille Pines 100,000 gallon welded steel tank was constructed in 2002 in conjunction with the project to extend service to Cape Horn. The tank rides on the Limekiln booster station, a level transducer in the tank actuates booster pumps (equipped with VFDs) via SCADA relay.

A level transducer installed in the standpipe provides remote SCADA monitoring.

The tank combined internal overflow and drain outlet is protected with 24-mesh screen and discharges via air gap to an armored bank. The reservoir is equipped with a vent protected with 24-mesh screen. The reservoir roof was not accessible at the time of the survey, photo-documentation of internal access hatches must be provided by May 31, 2019.

Pend Oreille Pines Booster Station

The Pend Oreille Pines booster station shares a property with the Pend Oreille Pines tank. The station provides boosted pressure to 20 lots (13 homes) via two 3-hp pump (capacity 27 gpm each) equipped with variable frequency drive (VFD) motors. Remote operation and oversight is provided via SCADA relay. Pumps are equipped with upstream and downstream isolation valves.

Pressure gages are provided on manifold of pump inlets and outlets. A pressure relief valve is required on boosted discharge tee where a pressure reducing valve is not installed and evaluated as a deficiency. One hydropneumatic tank rides on boosted pressure; the tank bladder appears to have failed and will require additional evaluation. Should tank bladder failure be confirmed, the deficiency must be corrected.

The locked booster station is equipped with adequate heat, ventilation and a floor drain.

Booster pump components receive back-up power via propane generator with automatic switch over.

Cape Horn Estates Tanks

Two identical 30,000 gallon welded steel tanks were constructed in early 1970s with original development of Cape Horn Estates. Tank interiors were re-coated and exteriors repainted in 2002. Tanks receive boosted pressure via the Cape Horn booster station and ride on the Upper Cape Horn Boosted Zone to supply approximately 20 residential connections within the northeast boundary of the system's service area.

A level transducer installed in the standpipe provides remote SCADA oversight and operation.

Tanks are equipped with isolation valves and may be taken off line individually without discontinuing service to Cape Horn customers.

Individual standpipe combined vents and overflows are adequately air gapped and equipped with 24-mesh screen. The reservoir roof was reportedly in good condition and an internal water tight seal was provided. Please provide photo-documentation of the internal water tight access hatch prior to May 31, 2019.

Cape Horn Booster Station

The Cape Horn booster station provides boosted pressure to the upper Cape Horn Zone via one 5 hp pump equipped with upstream and downstream isolation valves. The pump is actuated via pressure transducer on boosted pressure. The booster station is not equipped with a duplex pump; however the upper zone may be supplied via gravity from the Cape Horn tanks.

Pressure gages are provided on pump suction and discharge. A pressure relief valve is required on boosted pressure discharge and evaluated as a deficiency. The station is equipped with a floor drain. The locked booster station is provided with adequate heat and ventilation. Booster station components are equipped with back-up power via propane generator with auto-switchover.

Cross Connection Control Implementation

As per Idaho Rules, the water system purveyor is responsible for implementation of a Cross Connection Control Program. The water system purveyor is defined as "the person, company, or association who provides or intends to provide drinking water to the customers and is ultimately responsible for the public water system operation." The District Board is considered the purveyor ultimately responsible for implementation of the program.

The following Rule citation (IDAPA 58.01.08.552.06.a-e) lists the minimum requirements of a Cross Connection Control Program:

Cross Connection Control Program - Community Water Systems. The water purveyor is responsible through its cross connection control program to take reasonable and prudent

measures to protect the water system against contamination and pollution from cross connections through premises isolation, internal or in-plant isolation, fixture protection, or some combination of premises isolation, internal isolation, and fixture protection. Pursuant to Section 543, all suppliers of water for community water systems shall implement a cross connection control program to prevent the entrance to the system of materials known to be toxic or hazardous. The water purveyor is responsible to enforce the systems cross connection control program. The program will at a minimum include:

1. *An inspection program to locate cross connections and determine required suitable protection. For new connections, suitable protection must be installed prior to providing water service.*
2. *Required installation and operation of adequate backflow prevention assemblies. Appropriate and adequate backflow prevention assembly types for various facilities, fixtures, equipment, and uses of water should be selected from the AWWA Pacific Northwest Section Cross Connection Control Manual, the Uniform Plumbing Code, the AWWA Recommended Practice for Backflow Prevention and Cross Connection Control (M14), the USC Foundation Manual of Cross Connection Control, or other sources deemed acceptable by the Department. The assemblies must meet the requirements of Section 543 and comply with local ordinances.*
3. *Annual inspections and testing of all installed backflow prevention assemblies by a tester licensed by a licensing authority recognized by the Department. Testing shall be done in accordance with the test procedures published by the University of Southern California Foundation for Cross-Connection Control and Hydraulic Research. See the USC Foundation Manual of Cross-Connection Control referenced in Subsection 002.02.*
4. *Discontinuance of service to any structure, facility, or premises where suitable backflow protection has not been provided for a cross connection.*
5. *Assemblies that cannot pass annual tests or those found to be defective shall be repaired, replaced, or isolated within ten (10) business days. If the failed assembly cannot be repaired, replaced, or isolated within ten (10) business days, water service to the failed assembly shall be discontinued.*

The District has established a Cross Connection Control Ordinance; however a cross connection control program is not fully implemented. This is evaluated as a deficiency of the Rules requiring correction.

Monitoring Summary

The system is in compliance with all current monitoring requirements. The District actively participates in DEQ's Monitoring Waiver Program. The table on page 10 summarizes current monitoring requirements. The monitoring schedule may also be accessed at: http://www. deq.idaho.gov/water-quality/drinking-water/pws-switchboard. aspx

Sample Type	Frequency	Sample Location
Distribution		
Total coliform	2 samples per month	In accordance with coliform sampling plan
Lead and Copper	10 samples every 3 years	Assigned sampling locations
Total Trihalomethane	1 sample every year	Cape Horn Estates Tower
Haloacetic Acids Group 5	1 sample every year	Cape Horn Estates Tower
Sample Location: Well 7	**Frequency**	
Nitrate	1 sample per year	
Nitrite	1 sample per 9 years	
Alpha	1 sample per 9 years	
Fluoride	1 sample per 9 years	
Sodium	1 sample per 3 years	
Uranium	1 sample per 9 years	
VOCs	1 sample per 6 years	
Arsenic	1 sample per 9 years	
Radium 226	1 sample per 9 years	
Radium 228	1 sample per 9 years	
Regulated IOC	1 sample per 9 years	
Sample Location: Well 8	**Frequency**	
Nitrate	1 sample per year	
Nitrite	1 sample per 9 years	
Alpha	1 sample per 9 years	
Fluoride	1 sample per 9 years	
Sodium	1 sample per 3 years	
Uranium	1 sample per 9 years	
VOCs	1 sample per 6 years	
Arsenic	1 sample per 9 years	
Radium 226	1 sample per 9 years	
Radium 228	1 sample per 9 years	
Regulated IOC	1 sample per 9 years	

Source Water Quality

Source water quality meets all regulatory standards. Nitrate levels (1995-present) range consistently between minimum detection limits to 0.2 mg/L from the historical manifold sampling location. The maximum contaminant level (MCL) for nitrate in drinking water is 10 mg/L. Arsenic levels (2001-2017) consistently range below minimum detection limits to 0.004 mg/L from samples drawn from the manifold sampling location. The MCL for arsenic in drinking water is 0.010 mg/L.

Distribution Water Quality

Disinfection by product results drawn from the Cape Horn Estates Tower in September 2018 were below minimum laboratory detection limits for haloacetic acid group 5. Total trihalomethane results were 4.35 ug/L; the MCL for total trihalomethanes in drinking water is 80.0 ug/L. Results are indicative of low organic compounds in the source supplies.

Lead and copper monitoring results from the most recent round of ten samples collected in August 2016 indicate levels of lead in the drinking water supply range between 0.0013 to 0.0026

mg/L. The action level for lead in drinking water is 0.015 mg/L. Copper levels ranged from 0.0159 mg/L to 0.0473 mg/L. The action level for copper in drinking water is 1.3 mg/L.

The District is required to collect two coliform samples per month from rotating locations throughout the distribution system. Please provide a copy of the system's total coliform sampling plan.

Operator Certification

The Bayview Water and Sewer District is classified as a distribution one water system and is under designated oversight of Responsible Charge Operator Robert Kuchenski. Mr. Kuchenski holds a Distribution Level 2 (DWD2-14719) and Treatment Level 2 (DWT1-10956) license, renewal due February 2020. Ian Kuchenski serves as the back-up operator and holds a Distribution Level 1 (DWD1-21471) license, renewal due July 2019. As per Idaho Statute, the licensed operator is responsible for all decisions impacting water quality or quantity.

Administration

The District is administered by a five member Board meeting at the District Office. Sharon Meyer serves as Chairwoman, Robyn Edwards as Vice-Chair, Jan Jones, Rich Doney, and Steve May serve as Directors.

Rate Structure

All District service connections are metered. System rate structure was last updated in February 2018 and included as an addendum to the survey report.

Conclusion

The system was found to be operating in partial compliance with the Idaho Rules for Public Drinking Water Systems and will be considered to be operating in full compliance with the Rules upon correction of significant deficiencies and deficiencies noted below.

Significant Deficiencies – A corrective action plan, which includes a schedule for implementation of corrections, is required to be submitted within 30 days of receipt of this report.

1. Recent studies reported in the 2018 Facility Plan indicate a high probability of significant leakage within aging 10-inch transmission main between wells and Farragut tank and is evaluated as significant deficiency as per IDAPA 58.01.08.542.10.
2. The location of the Farragut tank overflow outlet is not known and is evaluated as a significant deficiency. The overflow is required to be located and if necessary modified to allow for the outlet to discharge to day light and be equipped with a 4-mesh expandable mesh screen with weighted flapper or 24-mesh screen as per IDAPA 58.01.08.546.03.
3. The Farragut tank access hatch is not equipped with a water tight gasket as per IDAPA 58.01.08.544.03.

Deficiencies - Please provide a description and timeline for addressing deficiencies in the written plan of correction.

1. Flow meters installed on well 7 and 8 discharge are past due for calibration.
2. Wells are not equipped with flow to waste and require correction at the time of next material modification.
3. Pressure relief valves are not installed on well discharge.
4. Inadequate pressure (static pressure less than 20 psi) within the Dromore distribution zone is evaluated as a deficiency requiring correction.
5. A lack of routine servicing of PRVs presents a concern for unreliable operation and requires corrective action.
6. The lack of adequate fire flow to the Dromore distribution zone requires corrective action.
7. Failure of Farragut tank coating and internal supports as well as numerous cracks and leaks requires corrective actions.
8. A pressure relief valve is required to be installed on Limekiln, Cape Horn, and Dromore boosted discharge.
9. A pressure relief valve is required on Pend Oreille Pines boosted discharge tee not already equipped with a PRV.
10. The District has established a Cross Connection Control Ordinance; however a cross connection control program is not fully implemented. This is evaluated as a deficiency of the Rules requiring correction.

Additional Requirements

1. Please provide photo-documentation of Farragut tank vent condition and seals on roof control junction box prior to May 31, 2019.
2. Dromore tank Photo-documentation of the adequately protected overflow outlet, screened vent and access hatches equipped with internal seals must be provided to DEQ prior to May 31, 2019.
3. Photo-documentation of Cape Horn tank and Pend Oreille Pines tank internal access hatches must be provided by May 31, 2019.
4. A follow up meeting will be scheduled with Jessie Roe prior to May 31, 2019 to evaluate current implementation of the cross connection control program. A timeline for implementation of the program will be updated based on information presented.
5. Please confirm that all booster pumps are equipped with low flow cut off mechanisms.
6. Upon discovery, AVR outlets are required to be raised above the ground water table, down turned and equipped with 24-mesh screen.
7. Please provide an updated copy of the system's total coliform sampling plan with the plan of correction.

Recommendations

1. Wells discharge via 10-inch transmission main to the Farragut tank. At the time of well construction, torpedo casings were likely installed to tamper pressure transients and alleviate entrained air during well cycles. It is strongly recommended the efficacy of this configuration be further evaluated to determine if additional measures are required to minimize future impacts to transmission main between wells and Farragut tank.
2. It is strongly recommended service meters are repaired or replaced in order to maintain

financial resiliency of the system.

3. It is strongly recommended that meters are installed at US Naval Detachment facility to measure water usage and ensure the facility is appropriately changed for usage.
4. It is recommended the potential for stagnant water be considered when determining operational level set points of the Farragut tank.
5. It is recommended the Dromore booster station be equipped with auto transfer back-up power.