



State of Washington

DEPARTMENT OF HEALTH

NORTHWEST DRINKING WATER REGIONAL OPERATIONS

20425 72nd Avenue South, Suite 310 • Kent Washington 98032-2388

Livingston Bay Community Association President John Gablehouse 26910 92 nd Ave NW C-5 Pmb 412 Stanwood WA 98292	Livingston Bay Community ID #47628	
	County:	Island
	System Type:	A-Comm
	Operating Permit Color:	Green
	Surveyor:	Laura McLaughlin
	Inspection Date:	December 10, 2019

Thank you for having your operator, Fernando from King Water, meet with me and show me around your water system. Sanitary surveys are the Office of Drinking Water’s (ODW) way to inspect public water systems through a field visit. ODW is also able to offer technical assistance to help utilities improve their system operations and ensure that public health is protected.

First, I’d like to acknowledge the system’s recent work to address the tank leakage with a liner. The operator says the liner is working as expected and leaks have decreased substantially. Great work!

This report documents the findings of this survey. Deficiencies that need your attention are summarized below. **Please respond to all the identified observations within 30 days from the date of this letter and provide documentation demonstrating the improvements completed or your plan for addressing them.**

Significant Deficiencies: *Potential significant public health risks. My office enforces correction of these items.*

Significant findings: *Defects in your facilities or operations that need immediate attention. My office enforces correction of these items.*

1. We weren’t able to climb the tank during the survey. **Please send photos to Laura.McLaughlin@doh.wa.gov of:**
 - the screened vent
 - intact gasket on the hatch (both opened and closed),
 - repaired crack in the tank lid
 - condition of moss/debris on the roof
 - any other openings in the top of the tank

I would appreciate a response (photos, schedule, or proposed alternative) to the following action items.

Observations and Recommendations: *to notify you of other drinking water rule violations or improve your technical, managerial or financial capacity. I would appreciate hearing about your progress on these items and may ask about them at your next survey.*



2. **Please develop and implement a cross connection control plan**, or let me know the status of the existing plan. Start by hiring a Cross Connection Control Specialist, having them carry out an initial hazards survey, and make recommendations for which connections need backflow devices at the meter. In addition, the board needs to establish bylaws that give them the authority to implement the plan. See the attached template.
3. We've seen systems with good planning programs be able to respond to their system's needs in alignment with what the community expects and avoid preventable emergencies. **Please develop a Small Water System Management Plan. DOH has a template here:**
<https://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/WaterSystemDesignandPlanning/SmallWaterSystemMgmt>. Adapt the template to meet the needs of your water system. If the system is planning to apply for State SRF loans, the SWSMP must be approved by DOH to be eligible for funding. In addition to Coliform Management Program and a CCCP, some areas of planning focus that we discussed at the survey include:
 - a. Financial management
 - b. Capital improvement and replacement. Include the tank and the iron/manganese treatment, which are both nearing the end of their design lives.
 - c. Emergency response
4. While the liner and sealant repair to the crack in the tank roof seem to have improved the performance of the tank, liners and sealants run a risk of leaking/failing. Now that the tank seems to be working properly, it's a good time to **plan and budget for tank replacement**. Also, **examine the tank for structural stability and develop an inspection schedule to routinely inspect for tank and roof** for new cracks or leaks.
5. We discussed some technical issues with the Fe/Mn treatment. Two of the five Greensand filters were not functioning during the survey, and one control valve was not functioning during the last survey as well. I understand that the system eventually plans to upgrade the treatment system. With two of the filters offline, the treatment may not be working as expected. Pre and post treatment iron and manganese monthly sample results were not available at the time of the survey to assess whether the treatment is working as expected. I recommend **reviewing iron and manganese data collection plan and reviewing data to find out if treatment is working**. **Please contact Denis Mehinagic, the regional engineer for Island County, regarding any changes to treatment**. Note that the system must submit a project report for changes or upgrades to the system.
6. Your source is rated high for risk of seawater intrusion. **Consider drilling a second well**, which would likely provide both supply redundancy and a way to manage the seawater intrusion.
7. Standard Operating Procedures (SOPs) are short, easy to follow directions to carry out routine operations. They are written in everyday language that is accessible to all potential operators and staff. I recommend **developing SOPs to complement O&M manuals that are stored in the pump house**. It's good practice to have a record of these routine tasks for consistency between operators and through time. Some SOPs that we discussed a need for during the survey were:
 - Tank inspection for leaks, screens, seals, etc.
 - Wellhead inspection
 - Backwashing protocol
 - Chemical feed tank dilution/filling
 - Permanganate residual measurement protocol
8. It appears that you have committed to serve water to more connections than you are currently approved for. The system is approved for 68 connections and potentially as many as 71 are available for full buildout. You should address this with the engineering submittal for the system improvements or through a plan submittal so that you are not subjecting yourself to legal litigation in the future. Since your source is at high risk for seawater intrusion, you need a letter from Doug Kelly at Island County Public Health supporting your request for additional connections.

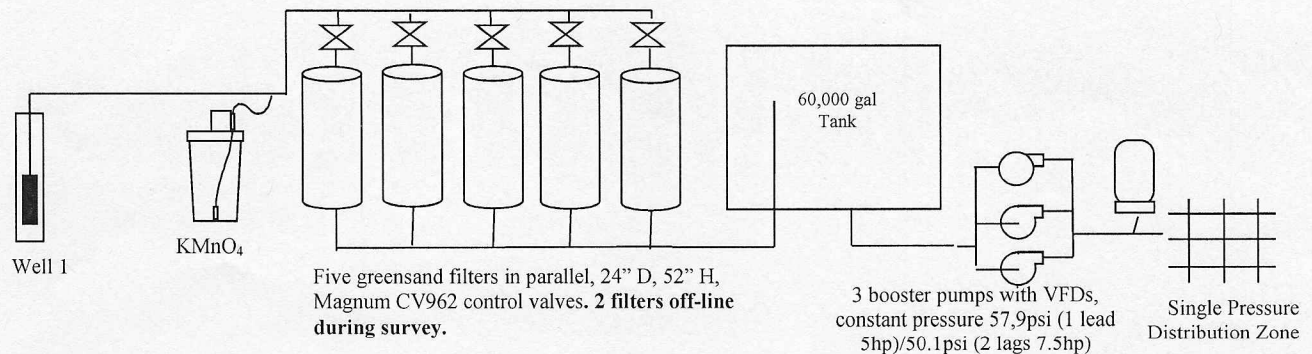
SYSTEM INFORMATION

Livingston Bay Community Association water system serves and is approved for 68 single-family homes in a residential community on North Camano Island. Based on our discussion, you have more empty lots to serve than you are currently approved to serve, maybe up to 71 lots. The system relies on a single source that is located in an area classified as HIGH risk of seawater intrusion. The source pumps through manganese removal treatment to a 60,000 gallon octagonal concrete reservoir. The treatment consists of potassium permanganate oxidation followed by greensand filtration. Distribution is served by booster pumps from the reservoir and consist of 2- and 4-inch PVC mains. There is one hydrant toward SR-532 that provides fire protection to the boat marina.

This system is fully metered as of 2015. Based on the production numbers from previous years, water demand in the system is high. The average day demand has been close to 300gpd/connection. The maximum month average daily demand has been around 600gpd/connection indicating a maximum day demand of 1020gpd/connection. The operator expects demand to decrease in 2019 as a result of the new tank liner.

This water source appears to show a general trend of chloride and conductivity increases with seasonal fluctuation.

SCHEMATIC



SECTION 1: SOURCE

Source ID #	Name:	Description:
01	Well 1 AGA 771	6" drilled well, 80ft deep with first open interval at 70ft, finished 53ft below sea level; classified as high risk for seawater intrusion; parcel S7380-00-0000C-0 on Fox Trot Way; well enclosed with a wooden enclosure with some pea gravel at the base. 56gpm

WELLHEAD	Source #01	
	Yes	No
System has well log	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Wellcap sealed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Openings sealed	<input checked="" type="checkbox"/>	<input type="checkbox"/>

WELLHEAD	Source #01	
	Yes	No
*Vent screened	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Terminates 6" above grade	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Protected from flooding	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Source meter	<input checked="" type="checkbox"/>	<input type="checkbox"/>
**Raw water sample tap	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Check valve	<input checked="" type="checkbox"/>	<input type="checkbox"/>
**Protected from unauthorized access	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Structure in good condition	<input type="checkbox"/>	<input checked="" type="checkbox"/>
*Sanitary control area has no unmitigated contaminants	<input checked="" type="checkbox"/>	<input type="checkbox"/>
**Protected from physical damage	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Frequency of routine site visit	2x/week	
Frequency of source meter reading	2x/week	

WELL PUMP EQUIPMENT	Source #01	
	Yes	No
*Functional and reliable pump and pump controls	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Pump control valve or vacuum relief valve with a protected air gap at discharge	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Generator available	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Generator has automatic startup	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Generator fuel source	propane	

The well is located in a dog house next to the treatment building. The insulation has been replaced since the last survey, a good temporary fix. Consider replacing the enclosure and ensure it is isolated from the outside.

EMERGENCY SOURCES -NONE

The community served by this system should consider their expected level of service and evaluate the role that a sustainable water supply plays in delivering this expected level of service. The community should develop a backup supply plan. You are currently relying on a single source that is experiencing seawater intrusion. Drilling a second well would not only increase the supply reliability but also help you manage seawater intrusion. Lowering the pumping rate and spreading it over more than one withdrawal point are common measures to mitigate seawater intrusion.

SECTION 2: DISINFECTION

This system does not provide disinfection treatment.

SECTION 3: OTHER TREATMENT

The well water is high in manganese. The treatment is designed to remove it through oxidation and filtration. Potassium permanganate is used for oxidation and greensand for filtration. This treatment dates back to 1998 and may be nearing the end of its design life. Two of the five filters were not functioning during the survey, and the main control valve was not working during the last survey. During the past two surveys the filters were

backwashed manually because of the control valve malfunction. Typically, the backwash is triggered at 20,000 gallons of total water treated which means that the backwash happens about every day during winter and more frequently in summer. Backwash water discharges to a swale a few hundred feet to the west from the treatment site.

Note that while manganese is currently a secondary contaminant, there are discussions on health effects that result from drinking of higher manganese concentrations. It is possible that manganese will become a primary contaminant at some point in the future.

The treated water manganese was less than 0.01 mg/L in the latest sample submitted to DOH.

#	Treatment Process	Chemical Added	Purpose	On WFI		Location in system
				Yes	No*	
1	Oxidation and filtration	KMnO ₄	Mn removal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Pump house

TREATMENT	1	
	Yes	No
*Operated & maintained properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*RPBA or air gap at water fill line to chemical tank	<input checked="" type="checkbox"/>	<input type="checkbox"/>
**Post treatment sample tap	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Redundant equipment available	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schematic of treatment facilities available	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Adequate testing equipment available and used	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Test kit calibrated and maintained properly	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Chemical feed proportional to flow	<input checked="" type="checkbox"/>	<input type="checkbox"/>
**Approved chemicals used	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SECTION 4: DISTRIBUTION SYSTEM

The distribution system consists of two mains, one on Fox Trot Way and another on Livingston Bay Shore Drive and are 2 and 4" PVC. The system is planning whole distribution replacement in addition to upgrading treatment. Distribution system leakage is well above the allowable 10%. The system expects this to improve due to the new tank liner.

FEATURES	Yes No	
	Yes	No
Service area and facility map	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Minimum pressure requirements met	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Service meters (reading frequency quarterly)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Leak detection program	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Water system leakage (%)	28.3%, 14.1% 3 year	
Number of breaks within last year	1-2	

FEATURES	Yes No	
	Main break response protocol	<input checked="" type="checkbox"/>
Adequate valving for flushing and pipe repair	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Blow-offs on dead ends	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Routine flushing (frequency: every 4 months)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Routine valve exercise (frequency every 4 months)	<input checked="" type="checkbox"/>	<input type="checkbox"/>

CROSS CONNECTION CONTROL (Community Systems)	Yes	No
System has enabling authority	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Ongoing hazard inspections	<input type="checkbox"/>	<input checked="" type="checkbox"/>
High hazards identified	<input checked="" type="checkbox"/>	<input type="checkbox"/>
High hazards protected	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Annual testing	<input type="checkbox"/>	<input checked="" type="checkbox"/>
System has installation standards	<input type="checkbox"/>	<input checked="" type="checkbox"/>
CCS on staff or under contract	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cross connections observed have been eliminated	<input checked="" type="checkbox"/>	<input type="checkbox"/>

This system does not have a cross connection control program. The system is aware of at least 5 in-ground irrigation systems and knows that some of them have backflow assemblies installed. There is no list or testing records of these devices.

All Group A – Community Water systems are required to have a Cross Connection Control Program in accordance with WAC 246-290-490. It is the Board’s responsibility to develop and implement a Cross Connection Control Program. Please check out our website for a copy of the Cross Connection Control Handbook for Small Systems. Inside you will find detailed instructions and examples. Our website can be found at:

<http://www.doh.wa.gov/CommunityandEnvironment/DrinkingWater/WaterSystemDesignandPlanning/CrossConnectionControlBackflowPrevention/CrossConnectionControlforSmallWaterSystems.aspx>

You need to start by making sure your bylaws give you the authority to implement this program. Then you can survey your customers to find out if there is a need for any backflow prevention devices. Follow up to ensure customers know the level of preventer they need to have installed at the service connection. All installed devices must be tested at the time of installation and annually thereafter.

SECTION 5: FINISHED WATER STORAGE

RESERVOIR	DESCRIPTION	TOTAL VOLUME (GAL)
1	60,000 gallon above ground octagonal concrete tank; several corners were leaking and the top has a crack. A new liner was installed in the tank since the last survey.	60,000

TOP OF RESERVOIR	Res #1	
	Yes	No
Hatch: Locked	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Hatch: Watertight seal or gasket	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Hatch: Over-lapping cover	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Screened air vent	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Openings sealed/protected	<input checked="" type="checkbox"/>	<input type="checkbox"/>

FEATURES	Res #1	
	Yes	No
Separate inlet/outlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Protected drain outlet	<input type="checkbox"/>	<input type="checkbox"/>
*Protected overflow outlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Overflow line discharges into a sanitary sewer with an air gap	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Operational water level gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bypass piping or isolation possibility	<input checked="" type="checkbox"/>	<input type="checkbox"/>
**Protected from unauthorized entry	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Low level alarms (light and buzzer)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample tap at outlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>

MAINTENANCE	Res #1	
	Yes	No
Frequency of structural and coating inspection	Once/year	
Frequency of cleaning	Last cleaned 2-3 years ago	
Frequency of appurtenance inspection	annually	
Frequency of routine site visit	2x/week	
**Structure in good condition	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Clear of excessive vegetation	<input checked="" type="checkbox"/>	<input type="checkbox"/>

I have not yet received photos of the reservoir's hatch and vent, the repaired crack on the roof (see comments). While I understand the crack was repaired with a sealant, if it re-opens this crack could allow surface water runoff to enter into the reservoir. Develop a routine inspection schedule to ensure that a good seal is maintained and start planning for reservoir replacement now.

SECTION 6: PRESSURE TANKS

Site	Location	# and size of Hydropneumatic Tanks	# and size of Bladder Tanks
1	With conversion to a variable-frequency-drive pumping system the hydropneumatic pressure tanks have been replaced by a single 44-gallon bladder tank Well-X-Trol model 250.		1-44gallon WX250

BLADDER	Site: 1	
	Yes	No
Isolation valve	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure relief valve	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure gauge	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BUILDINGS/ENCLOSURE	Site: 1	
	Yes	No
Facility secure	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Structure in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>

SECTION 7: BOOSTER PUMPS AND FACILITIES

Facility	Name	Description	Total Capacity (gpm)
1		The booster pump station is a constant pressure variable-frequency drive consisting of one 5HP and two 7.5 HP. The 5hp is in lead all the time. The larger pumps come on only if the smaller pump cannot keep up with the demand	Unknown

BOOSTER PUMPS	Facility 1	
	Yes	No
Number of pumps	3	
Frequency of routine site visit	2x/week	
Isolation valves	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure gauge(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pressure relief valve	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Pump failure alarm (red light on VFD)	<input checked="" type="checkbox"/>	<input type="checkbox"/>
*Functional pump and pump controls	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Protected from flooding	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Redundant pumps	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Equipment in good condition	<input checked="" type="checkbox"/>	<input type="checkbox"/>

BOOSTER PUMPS	Facility 1	
	Yes	No
Generator available	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Generator has automatic startup	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Generator fuel source	propane	

SECTION 8: WATER QUALITY MONITORING AND REPORTING

All water quality monitoring and results are currently satisfactory. However please note that your system does not have a monitoring waiver for manganese or arsenic and therefore, these must be sampled once every 3 years. IOC waivers are granted to individual analytes instead of the whole test panel. Additionally, monthly manganese sampling is required for treatment performance monitoring, but since manganese is a secondary MCL, a field test kit can be used for this instead of a certified laboratory test. The once every 3-year sample must be taken to a certified lab. The operator says he takes samples according to a regular monthly schedule, though most results were unavailable at the time of the survey, which made it impossible to assess whether treatment was working as expected.

Refer to the Water Quality Monitoring Schedule for your monitoring requirements and status. If you have any questions on source monitoring, please contact Steve Hulsman at (253) 395-6777.

CHEMICAL	
Sample Point	Description
1	At the pump station

CHEMICAL	Sample Point 1	
	Yes	No
Monitoring adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ODW WQ data reviewed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sample collection sites correct	<input checked="" type="checkbox"/>	<input type="checkbox"/>
System has prior:		
<input type="checkbox"/> Nitrate results above 5 mg/L		
<input type="checkbox"/> Nitrite results above 0.5 mg/L		
<input type="checkbox"/> Primary MCL		
<input type="checkbox"/> Secondary MCL exceedance(s)		
<input type="checkbox"/> Organic detections		
<input type="checkbox"/> Other _____		

COLIFORM	Yes	No
Monitoring adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Monitoring plan adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Monitoring plan followed	<input checked="" type="checkbox"/>	<input type="checkbox"/>
# of violations since last survey	0	

The system has shown improvement in eliminating coliform. There haven't been any hits since the last survey! Continue to carefully inspect all your facilities and look for openings. If you made changes to your operations to reduce the risk of unfavorable coliform results, keep them up! This is good improvement!

With the revised total coliform rule (effective April, 2016), any confirmed detection of coliform bacteria will trigger an assessment of the system, in addition to a source sample and the typical repeat samples. You are required to prepare a report for each assessment and submit it with your plan to fix any identified sanitary defects within 30 days from the incident.

LEAD & COPPER	Yes	No
Monitoring adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Results below action level	<input checked="" type="checkbox"/>	<input type="checkbox"/>

This system is not required to monitor for disinfection byproducts.

SECTION 9: SYSTEM MANAGEMENT AND OPERATIONS

This system does not have a planning document but the board is well aware of the aging infrastructure and has been planning improvements for long time. You should schedule a preplan with us. An approved planning document is required before you can qualify for an SRF loan. Even if you don't have support to get a planning document approved, you should develop a small water system management program for your system. This is a binder that contains the most important documents of your water system and will help you to tell you story and share it with your community. A template is available on our website.

PROJECT/PLANNING	Yes	No
System approved	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Current WSP/SWSMP	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Year WSP/SWSMP approved		
Emergency response plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Financial plan	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This system should be budgeting and looking for financing options for the improvements that are needed at this system, as well as building their financial reserves.

REPORTING	Yes	No	N/A
WFI reviewed and updated with purveyor	<input checked="" type="checkbox"/>	<input type="checkbox"/>	---
Consumer confidence report (Community only)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water use efficiency report (Municipal Water Suppliers)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cross connection control annual report (> 1000 conn)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

OPERATOR CERTIFICATION

This system is required to have a WDS and WTPO1-level certified operators. This system has maintained a contract with King Water Management Company to operate the water system.

Name of Operator	Certification Number	Certifications	Mandatory Operator
Sandra Bodamer	013082	WDM2, WTPO2, CCS	<input checked="" type="checkbox"/>

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. If you have any questions or this information is inaccurate, please contact Operator Certification at (800) 525-2536.

OPERATIONS	Yes	No
Operational records maintained	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Complaints followed up	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Complaints documented	<input checked="" type="checkbox"/>	<input type="checkbox"/>
# of complaints recorded at ODW (since last survey)	none	
Operation and maintenance program	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Previous survey deficiencies/findings corrected, if no list below.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Observations and Recommendations from the Last Survey in 2014:

- Please complete a Water System Plan (SWSMP). This SWSMP must be approved if you plan to apply for SRF funding. Please set up a preplan meeting with Jennifer Kropack and Denis Mehinagic to discuss the expectations for this submittal. 2019 UPDATE: UNKNOWN.
- The roof of the reservoir has a significant crack that may let surface water runoff into the tank. **Please investigate and repair as soon as possible to avoid significant contamination of your water supply.**
- The loose insulation at the wellhead attracts rodents. **You should replace the enclosure with a type that is well isolated from the outside and only use rigid foam board insulation or cover the wool with boards.** 2019 UPDATE: COMPLETE: reinsulated dog house.
- Please develop and implement a Cross Connection Control Program.
- It appears that you have committed to serve water to more connections than you are currently approved for. You should address this with the engineering submittal for the system improvements or through the plan submittal so that you are not subjecting yourself to legal litigation in the future. Since your source is at high risk for seawater intrusion, you need a letter from Doug Kelly at Island County Public Health supporting your request for additional connections. 2019 UPDATE: unknown
- Consider your supply reliability and strategies to minimize seawater intrusion. A second supply well would likely provide both - supply redundancy and a way to manage the seawater intrusion. 2019 UPDATE: STILL NEEDED
- Consider installing a liner or a new reservoir is needed for your community. 2019 UPDATE: COMPLETE/ONGOING, INSTALLED LINER. NEED TO PLAN FOR REPLACEMENT.

CLOSING

The Drinking Water Regulations require that all Group A public water systems have a sanitary survey every 3-5 years. Regulations establishing a schedule of fees for sanitary surveys have been adopted (WAC 246-290-990). In order to receive credit for the survey, a sanitary survey fee must be paid. The total cost is \$408.00. An itemized invoice for this survey has been sent to the DOH primary contact on file for your water system. Please remit complete payment in the form of a check or money order within thirty days of the date of this letter in the enclosed envelope or mail payment to: **WSDOH, Revenue Section, PO Box 1099, Olympia, WA 98507-1099.**

Please note that satisfying the conditions of this sanitary survey does not necessarily mean that your water system is fully compliant with other applicable requirements that may be found under other federal, state, or local statutes, ordinances, or regulations. These and other departmental requirements should be addressed separately from the sanitary survey process.

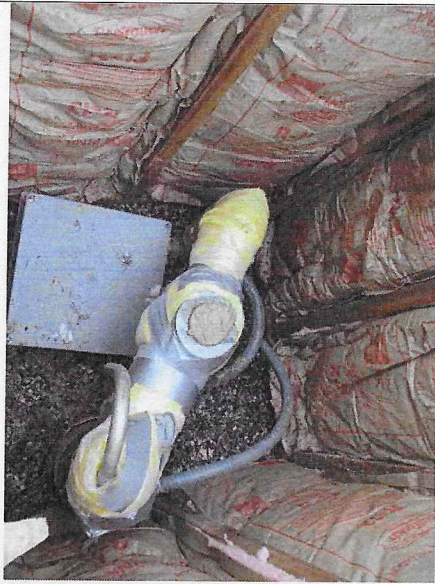
Please give me a call at (253) 395-6761 if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Laura McLaughlin", followed by a long horizontal line extending to the right.

Laura McLaughlin, PE
Regional Engineer
NW Drinking Water Operations
Regional Engineer

cc: Sandra Bodamer, King Water
Island County Public Health



S01, well 1, Improved insulation



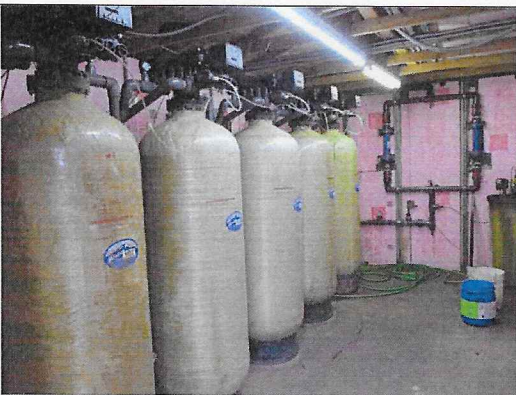
Screened well vent



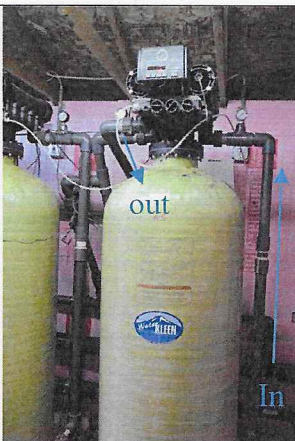
KMnO4 feed tank and injection pump



KMnO4 injection point, followed by 2 static mixers



5 Greensand filters, 2 were off-line.

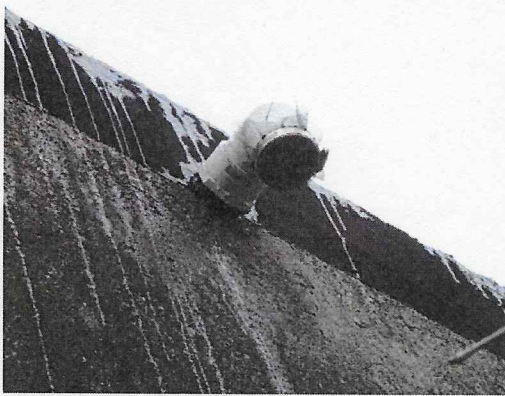




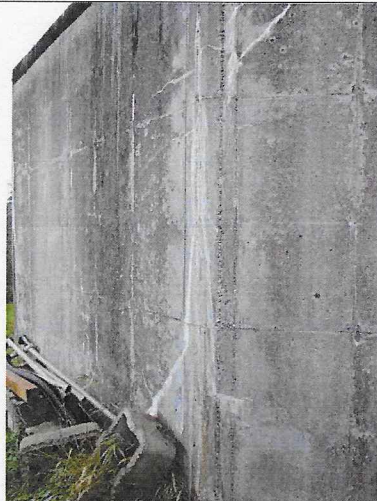
Octagonal, newly lined tank



Tank corner with cracks



Screened tank overflow



Tank wall with cracks



Source meter? (in pump house)



Booster pump station and VFDs.



Backup generator