

BEFORE THE  
WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

UW-240151

CASCADIA WATER, LLC

September 26, 2024

**Direct Exhibit of Culley J. Lehman**

**W&B WATERWORKS SANITARY SURVEY 2024**

**Exh. CJL-7**



STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
**NORTHWEST DRINKING WATER REGIONAL OPERATIONS**  
PO BOX 47800 MS:47822 OLYMPIA, WA 98504-7800

April 12, 2024

W&B WATERWORKS 1  
CULLEY LEHMAN, GENERAL MANAGER  
[culley@cascadiawater.com](mailto:culley@cascadiawater.com)

Subject: W&B Waterworks 1, ID #46670  
Island County  
Routine Sanitary Survey

Dear Culley Lehman:

This letter is in follow-up to my routine sanitary survey of your water system on March 19, 2024. Thank you for meeting with me.

The purpose of the sanitary survey is to inspect water system facilities, review operations & maintenance, and discuss ideas to help ensure the drinking water system will continue to be safe and reliable for years to come. These inspections are required by the drinking water regulations (WAC 246-290) every 3-5 years. We covered the eight EPA elements of a survey described in 40 CFR 142.16.

General conclusions. W&B Waterworks is in the middle of constructing a new reservoir to replace the two existing reservoirs and build a treatment system to remove naturally occurring arsenic and manganese in the source water. Thank you for investing in the water system to best protect public health!

**2024 Sanitary Survey Issues**

Enclosed is a copy of my Sanitary Survey Notes. They, along with this letter, reflect my understanding of your water system and highlight the key issues and specific recommendations (bold type in notes) we discussed during my visit. Please, in the next 45 days, respond to this letter and recommendations. If you disagree with them and/or are unable to take action within 45 days, please explain your intentions and provide a schedule for addressing the applicable findings. Thanks.

**Significant Deficiencies – *Potential significant public health risks***

1. The overflow screen on the newer, 50,000-gal tank needs finer 24-size mesh. Please replace the screen and submit photos.

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**Significant Findings – *Defects in your facilities or operations that need immediate attention.***

**None**

Observations – *To notify you of other violations of drinking water rules.*

1. Iron and manganese are present in the water above the secondary maximum contaminant level (MCL). Manganese does have health effects associated with exposure at high levels. DOH recommends installing treatment to remove iron and manganese if present above the secondary MCL, and issuing PN if above 0.3 mg/L. Refer to the guidance on our website for more information.  
<https://doh.wa.gov/sites/default/files/2023-12/331-741.pdf>
2. Please note that water systems need to develop and submit a Lead Service Line Inventory (LSI) by October 16, 2024. Please visit our website for additional guidance. <https://doh.wa.gov/community-and-environment/drinking-water/contaminants/lead/lead-and-copper-rule-revisions>
3. Notify DOH when the consolidation of W&B Waterworks and Del Bay is completed.

Recommendations – *To improve your managerial, financial, or technical capacity.*

1. Improve the well enclosures for all 4 wells. The structures do not allow easy access to the wells and are not adequately protected to prevent rodent and bug entry.
2. Research different methods for cleaning manganese build-up in the mains once treatment is constructed and working to remove manganese and arsenic from the source water.

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). 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**. DOH now accepts online payment for sanitary surveys. Review DOH Pub #331-688 for guidance.

Your next sanitary survey is tentatively scheduled for 2029.

Helping you ensure a safe and reliable drinking water supply is our highest priority. Please contact me if you have any questions or concerns. **Send all responses to this survey to me and our NWRO Sanitary Survey email: [nwro.sanitarysurveys@doh.wa.gov](mailto:nwro.sanitarysurveys@doh.wa.gov).**

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Sincerely,

A handwritten signature in cursive script that reads "Alexis Medina".

**Alexis Medina, EIT**  
Northwest Regional Engineering Staff  
Office of Drinking Water  
Washington State Department of Health  
[Alexis.Medina@doh.wa.gov](mailto:Alexis.Medina@doh.wa.gov)  
Cell: 564-200-2706

Enclosures – Invoice, Survey Report

ecc: Aneta Hupfauer – Island County Health Department  
NWRO Sanitary Survey Program



STATE OF WASHINGTON  
DEPARTMENT OF HEALTH  
**NORTHWEST DRINKING WATER REGIONAL OPERATIONS**  
PO BOX 47800 MS:47822 OLYMPIA, WA 98504-7800

**SANITARY SURVEY SUMMARY**

March 19, 2024

**System:** W&B Waterworks 1  
Island County  
ID #46670

**Persons Attending:** Culley Lehman, Cascadia Water LLC  
Alexis Medina, DOH

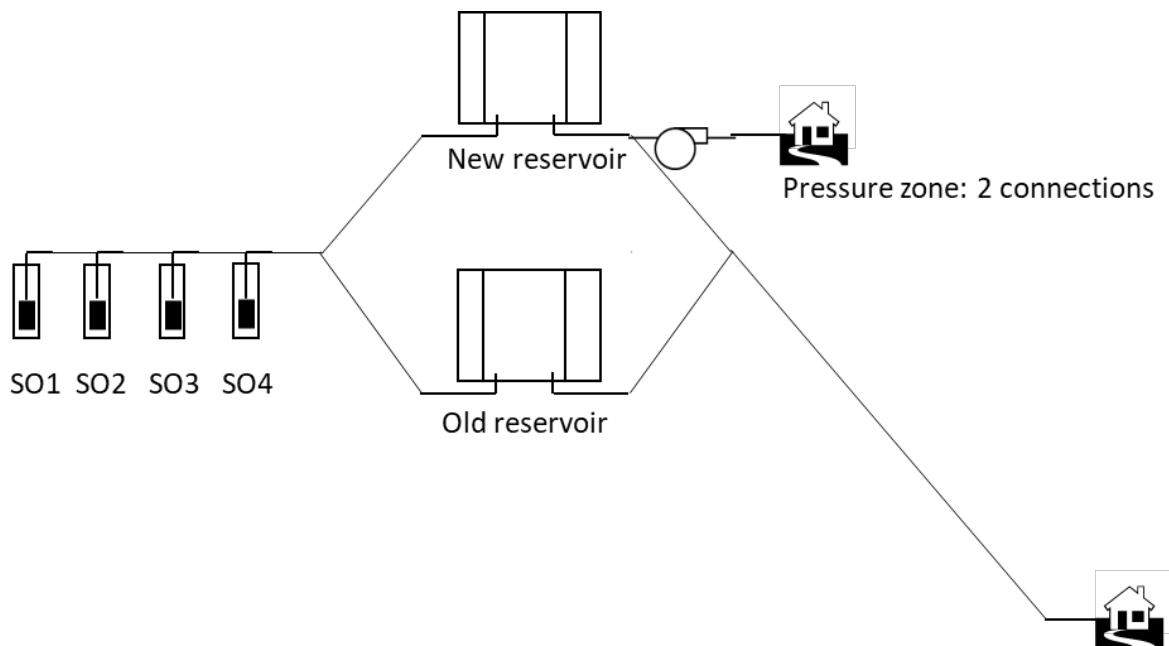
**Purpose:** Routine Sanitary Survey

**General:**

W&B Waterworks 1 located just outside of Freeland on Whidbey Island serves 456 single-family residential connections. The system is approved for 500 connections. W&B Waterworks 1 is owned and operated by Cascadia Water, LLC.

Your water system was last surveyed in September 2019 by Aneta Hupfauer, ICHD. No complaints on file. Your water system has a green operating permit. DOH approved a Water System Plan for Cascadia-owned systems, which included W&B Waterworks in August 2022.

**SYSTEM DESCRIPTION:**



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Wells 1, 2, 3, and 4 form a wellfield (S05) and are the sole sources of the water system. No treatment is currently provided. Water is pumped into 2 reservoirs. There are two pressure zones, one gravity and one pressurized. The pressure zone is pressurized by one booster pump that serves 2 connections. The wells are in an area currently classified as medium risk of seawater intrusion (SWI).

Source:



*(L) Well #1 with sample tap and source meter (R) Screened vent on Well #1*



*(L) Well #2 (Center) Screened vent on Well #2 (R) Source meter and sample tap*

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*(L) Well #3 (Center) Secondary vent on Well #3 (R) Source meter and sample tap*



*(L) & (R) Screened vents on Well #3*



*(L) Well #4 (R) Screened vent on Well #4 – screen bubbled but fully intact*

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| Well             | Description   |
|------------------|---|
| Well #1 (AGA932) | Permanent, lead source. 6-inch diameter well drilled to 310 feet. A screened vent, source meter, and sample tap are present. The transducer in the reservoir that is tied into SCADA calls the well on. |
| Well #2 (AGA931) | Seasonal source. Drilled to 291 feet. Only used in periods of high demand (typically only in the summer or a fire event).   |
| Well #3 (AGA930) | Permanent lag source. 6-inch diameter well drilled to 280 feet. A screened vent, source meter, and sample tap are present.  |
| Well #4 (AGA929) | Seasonal source. Drilled to 307 feet. Only used in periods of high demand (typically only in the summer or a fire event).   |

Well #1 is the lead well, well #3 is called on next, followed by well #2 and #4 which will come on simultaneously. All the wells are located near the two existing reservoirs and are in an area classified as medium risk for SWI. The operator performs site visits 3-5x a week. The generator on site can only supply power to well #1.

The structures over all 4 wells need improvement. They are hard to open and access the well and do not provide adequate protection from rodents and bugs.

Treatment:

W&B Waterworks 1 does not currently provide any type of treatment. However, treatment to remove naturally occurring manganese and arsenic was designed and approved by DOH in June 2023. Construction of the treatment plant will begin after the new reservoir construction is completed.

Reservoir:



*(L) & (R) Existing reservoirs – soon to be demolished once the new tank is finished and online*



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*(L) Existing reservoirs with wells nearby (Center) Overflow for reservoir (R) Finer mesh needed for overflow screen*



*(Above) Construction is underway for the new reservoir*

W&B Waterworks 1 has two 50,000-gal octagonal concrete reservoirs. The reservoirs are filled from the bottom. Both reservoirs are filled in parallel from the sources. Both reservoirs were cleaned in January 2023 and are scheduled to be cleaned every 3-4 years. The design for a 185,000-gal reinforced circular concrete reservoir was approved by DOH in August 2022. Construction was underway during the time of the survey and the expected completion date was the end of May 2024. The 185,000-gal reservoir will replace both the 50,000-gal reservoirs. The older of the two 50,000-gal reservoirs was leaking significantly at the corners. Thank you for planning and replacing the aging infrastructure!

The reservoirs have high and low-level alarms that are tied into the SCADA system and able to be viewed by the operator at any time. The alarms will call out to the operator.

Photos were received on 4/12/2024 of the reservoir appurtenances for both reservoirs. Thank you. **The overflow screen on the newer, 50,000-gal tank needs finer 24-size mesh. Please replace the screen and submit photos.**

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Booster Pumps and Pressure Tank:



*(L) Booster pump housing near reservoir (R) 1-HP Booster pump for 2 connections*

This system has two pressure zones, gravity and pressurized. The pressurized zone is supplied by one 1-hp booster pump that supplies 2 residential connections. This booster pump will be eliminated with the completion of the reservoir and treatment system upgrades.

W&B Waterworks does not have any pressure tanks.

Distribution:



*(L) Generator for backup power (R) Newly rebuilt PRV in distribution*

The water mains are 8- and 6-inch PVC throughout with a few 4-inch lateral lines. Three pressure-reducing valves reduce pressure to the lower elevation connections. Fire flow is provided to 34 fire hydrants in the distribution system. The system is flushed 1x a year due to iron and manganese buildup. Valves are exercised at the time of the flush.

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Individual meters are installed on all connections. Individual meters are read every other month. Distribution system leakage in 2022 was reported as 1.7% with the 3-year average DSL at 9.6%. Due to large leaks in 2021, the 3-year average DSL increased, however a downward trend is expected.

W&B Waterworks 1 does have an active, written Cross Connection Control program. Surveys have been sent to and received from the residents. Cascadia Water is currently working on evaluating the risks and installing any required devices. Ensure the proper backflow prevention devices are installed and inspected annually. Keep up the good work!

### **Water Quality Monitoring and Reporting:**

#### Nitrate and Arsenic:

Nitrate concentrations reported are consistently less than 2.5 mg/L, which is below the MCL of 10 mg/L.

The arsenic concentrations for a blended sample were 7.9 ppb, which is 10 ppb. Well #4 (S04) has the highest concentration of the wells at 8.2 ppb. The treatment system has been designed to remove arsenic to as low as possible.

#### Iron and Manganese:

Iron concentrations were reported at 0.09 mg/L in 2019. Manganese exceeds the secondary MCL in the raw water. The sample results from a sample collected in 2022 from the wellfield had manganese concentrations at 0.474. The secondary MCL for iron and manganese are 0.3 mg/L and 0.05 mg/L, respectively.

Manganese is a naturally occurring mineral found in rocks, groundwater, and surface water. Small amounts of manganese are essential nutrients for humans. Our bodies need some manganese to stay healthy, but too much can be harmful, especially to infants. Manganese in water can also stain laundry and create a brownish-black or black stain on toilets, showers, bathtubs, or sinks. Manganese can make water look, smell, or taste bad. Manganese accumulates inside pipes in distribution systems and can be released at higher concentrations. Research worldwide has given us a more complete understanding of how manganese interacts with drinking water systems and its human health impacts. DOH recommends that any water system with manganese above the secondary MCL install treatment to limit the exposure and issue public notification to customers if manganese is present above 0.3 mg/L.

W&B Waterworks treatment system is designed to remove manganese below the SMCL and should be constructed and operational by the end of 2024.

#### Coliform Monitoring:

The system is required to collect two coliform samples every month. In the last 5 years, they have not had any confirmed, positive coliform samples. This system is in compliance with the coliform program.

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Disinfection By-Products (DBP):

W&B Waterworks does not disinfect and therefore does not collect DBP samples.

Lead and Copper:

W&B Waterwork's lead and copper results collected between 2021 and 2023 were below the action levels. The lead 90<sup>th</sup> % was 0.0013 mg/L and the copper 90<sup>th</sup> % was 0.16 mg/L. The action levels for lead and copper are 0.015 mg/L and 1.3 mg/L, respectively.

*Please note, that water systems need to develop and submit a Lead Service Line Inventory (LSI) by October 16, 2024. Please visit our website for additional guidance.*

<https://doh.wa.gov/community-and-environment/drinking-water/contaminants/lead/lead-and-copper-rule-revisions>

PFAS:

From the sample collected in August 2023, all PFAS components were below the detection limits.

**SYSTEM OPERATIONS AND MANAGEMENT:**

W&B Waterworks 1 water system is included in Cascadia Water LLC's company-wide Water System Plan that was approved by DOH in 2022.

W&B Waterworks and Del Bay Water System are working to consolidate. The consolidation of the two water systems is underway, however, not yet completed. Notify DOH when the consolidation is complete.

W&B Waterworks 1 last updated its Water Facilities Inventory (WFI) form on 08/03/2023. The WFI form needs to be updated annually. Thank you!

**OPERATOR CERTIFICATION:**

This system is required to have a WDM 1 certified operator.

| Name of Operator | Certification Number | Certifications          | Mandatory Operator                  |
|------------------|----------------------|-------------------------|-------------------------------------|
| Adam Lehman      | 010506               | WTPO 1, WDM 3, CCS, WDS | <input checked="" type="checkbox"/> |

WDS-Water Distribution Specialist; WDM-Water Distribution Manager; WTPO-Water Treatment Plant Operator, CCS-Cross Connection Specialist; If you have any questions or if this information is inaccurate, please contact Operator Certification at (800) 525-2536.