# ADEQUACY REPORT

**Date:** July 4, 2024


**To:** Dan Volkert
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**From:** Tyler Johnson P.E.
Johnson Engineering LLC
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Soldotna, Alaska 99669
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**Location:** 65443 Lingonberry Ave Ninilchik, Alaska
T2S R14W SEC2 S.M.Evergreen Park Sub 1978 Addition Lot 13
Parcel ID: 1594802

**Subject:** Wastewater System Adequacy, Well Flow and Coliform Testing

On June 19 2024, I completed an adequacy of the existing onsite wastewater system, well flow test, and coliform sampling on the subject property. Two septic systems and a single private well serve the property. I will refer to the septic systems as the lower and upper for reference.

The upper septic leach field was replaced in 2008, as indicated by the records of the Alaska Department of Environmental Conservation (ADEC). A new deep trench type soil absorption system (SAS) was implemented as a replacement and sized for 3 bedrooms. The replacement system's documentation of construction has been filed with the State of Alaska.

The lower septic had no records available. No one occupied the property at the time of the test. Both upper and lower septic tanks were nearly full.

The 6" diameter steel cased well was likely installed about the same time as the original property. Johnson Engineering did not receive a well driller's well log. The well depth and drawdown were not measured by Johnson Engineering during the well flow test.

Lower Septic System

No records were available for this system. Based on the position and layout of the 4" monitoring tubes, I could determine the locations of the septic tank and SAS. The SAS inspection and monitoring tubes were above grade, capped, and in good condition. The lower septic system serves a common bathhouse for 3 dry cabins (2 per cabin). Based on the 2024 OWSIM 2.4.2 Wastewater Minimum Daily Flows values, the lower septic system would need to process a minimum of 6 persons @ 50 gpd/person or 300 gpd. The adequacy test was performed accordance with accepted practices by adding 1.5 times the expected daily wastewater flow into the system (which in this case 300 gallons per day x 1.5 = 450 gallons) and recording the rise and fall of the water level in the monitoring tube, as the test progresses. At the beginning of the test there was no measurable liquid level in the SAS monitoring tube. Water was continuously introduced into the soil absorption system through the monitoring tube at the end of the absorption trench. Water flow rate into the system was measured to be approximately 7.4 gallons per minute. The liquid level in the monitoring tube was measured 3 times during the test. After 65 minutes (481 gallons) the test was stopped and no visible water remained in the monitoring tube.

Upper Septic System

The SAS inspection and monitoring tubes were found above grade, capped and in good condition. The adequacy test was performed accordance with accepted practices by adding 1.5 times the expected daily wastewater flow into the system (which in this case 450 gallons per day x 1.5 = 675 gallons per day) and recording the rise and fall of the water level in the monitoring tube, as the test progresses. At the beginning of the test there was no measurable liquid level in the SAS monitoring tube. Water was continuously introduced into the soil absorption system through the monitoring tube at the end of the absorption trench. Water flow rate into the system was measured to be approximately 5.0 gallons per minute. The liquid level in the monitoring tube was measured 4 times during the test. After 130 minutes (650 gallons) the test was stopped and no visible water remained in the monitoring tube.

Well Flow Test

A well flow test was performed on the existing water supply system concurrent with the upper wastewater system adequacy test. Water flowed continuously through a 5/8" diameter hose (about 50' long) at a measured rate of 5.0 gallons per minute for the duration of the test. No variations in flow rate during the test were recorded.

A water sample was taken from a raw water hose bibb located inside the common bath house building on June 5, 2024 and delivered under chain of custody to Tauriainen Engineering and Testing (Soldotna) for coliform bacteria testing. The satisfactory test result is attached.

Based on the above information, the existing onsite systems appear to be functioning as required.

Contact me at 907-513-1011 or tjohnson@johnsonengineeringak.com if you have questions or need additional information.

Attachment: Coliform bacteria test result

TET
Tauriainen Environmental Testing LLC
35186 Kenai Spur Highway
Soldotna, AK 99669
907-262-4624 • office@tetesting.net

**PLEASE READ INSTRUCTIONS ON BACK**

Print All Information

Check the current **Monitoring Summary** sheet from ADEC Drinking Water Watch for proper information!

# TOTAL COLIFORM BACTERIA DRINKING WATER ANALYSIS

**Client Name:** Johnson Engineering

**Mailing Address:** PO Box 1033
Soldotna, AK 99669

**Preferred Method of Payment is by CASH or CHECK. Other forms of payment will incur additional fees.**

LAB USE ONLY
Lab Number: 2024-0885

Contact: Tyler Johnson
Phone #: 907-513-1011
Email: tjohnson@johnsonengineeringak.com
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**Sample Information:** ☒ **Residential Water System** or ☐ **Public Water System ID#:** _____

**Legal Des / Physical Address:** 65443 LINGONBERRY **Facility ID:** _____

**Water System Name:** NINILCHIK, AK **Sample point ID:** _____

**Sample Location** (e.g. Bathroom Sink, Kitchen Sink): LOWER BATHROOM / MECH. ROOM

**Sample Information:** Date: 6/20/24 Time: 9AM By: TYLER JOHNSON

**Sample Type:** ☐ Routine ☐ Special Purpose: _____
☐ Check Sample for previous unsatisfactory sample with Lab #: _____ )

**Disinfection:** ☒ Untreated ☐ Treated (Chlorine, UV, etc.)

**TO BE FILLED IN WHEN RELINQUISHING SAMPLE (Handing Sample over to Lab)**

**Relinquished:** Date: 6/20/24 Time: 11:26 By: T. JOHNSON

**Received:** Date: 6/20/24 Time: 11:26 By: DKC Paid: 912855

**Condition:** ☒ Satisfactory ☐ Rejected Comments: POD

This report is for the exclusive use of the party to whom it is addressed.
By submitting a sample for testing to TET - Tauriainen Environmental Testing LLC (TET), the client agrees to the terms and conditions on the reverse.

**TO BE FILLED IN BY THE LAB**

Date Test Started: 20JUN24 Test Start Time: 1740 Analyst: ST

| COLILERT TEST RESULTS (SM 9223B) | DATE | TIME | ANALYST |
|---|---|---|---|
| | 21JUN24 | 1740 | ST |

**Color:** ☒ Clear and Negative for Total Coliform & E. Coli. - Satisfactory
☐ Yellow and Positive for Total Coliform - Unsatisfactory
☐ Yellow w/ Fluorescence and Confirmed E. Coli.

Comments: _____