



## Case Study - Coliform Bacteria in Well Water



- Address:** 36145 Bore Tide Dr., Kenai, AK 99611
- Contact Persons:** Dan and Sherry Dahlen - Home owners
- Phone Number:** 907-283-4485
- Test Performed By:** *HydroFLOW* Alaska - Mike Colton 907-398-4995
- Background:** This area on the Kenai Peninsula, rural Alaska, has well water contamination due to area flooding. Home owners had water tested by a local water testing Lab; **Tauriainen Engineering & Testing.**



**October 30, 2013** - Prior to the installation of a *HydroFLOW* water conditioner on the incoming well pipe, a water sample was taken at the kitchen faucet. The lab test results stated the water was **Yellow and positive for Total Coliform - Unsatisfactory**.

**TAURIAINEN  
ENGINEERING & TESTING**  
35186 Spur Hwy Soldotna, AK 99669 (907)262-4624  
FAX 262-5777 engineeringalaska@gci.net

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**TOTAL COLIFORM BACTERIA DRINKING WATER ANALYSIS**

Client Name: Sherrie Dahlen Lab Use Only Lab Number: 2013-1941  
Mailing Address: 31045 Base Tide Dr  
Kenai, AK Phone: 283-4485  
Fax/Email: 283-8450 sad@alaska.net

Sample Information:  Residential Water System  Public Water System ID No. \_\_\_\_\_

Legal Description: Lot 5 Bk 5 Mariners Watch Sub

Sample Location: (bathroom, kitchen, etc.) Kitchen (unable to remove aerator)

Sampled: Date: 10-30-13 Time: 10:41 am Sampler's Initials: S.D.

Sample Type:  Routine  Special Purpose flooding  
 Repeat Sample (For previous unsatisfactory sample with lab number \_\_\_\_\_)

Disinfection:  Untreated  Treated (chlorine, UV, etc.) \_\_\_\_\_

Relinquished: Date: 10-30-13 Time: 10:40 am By: Sherrie Dahlen

Received: Date: 30 Oct 13 Time: 10:40 By: HW Paid: CL# 5327 SD

Condition:  Satisfactory  Rejected Comments: \_\_\_\_\_

This report is for the exclusive use of the party to whom it is addressed.  
By submitting a sample for testing to Tauriainen Engineering & Testing, Inc. (TET), the Client agrees to the terms and conditions on reverse.

↓ To be filled out by Lab ↓

Date Test Started: 30 Oct 13 Time Test Started: 1545 Analyst: ST

**COLILERT TEST RESULTS (SM 9223B)**

Color:	Date	Time	Analyst
<input type="radio"/> Clear and Negative for Total Coliform - Satisfactory	<u>31 Oct 13</u>	<u>1545</u>	<u>ST</u>
<input checked="" type="radio"/> Yellow and Positive for Total Coliform - Unsatisfactory			
<input type="radio"/> Yellow w/ Fluorescence and Confirmed E. Coli.			

Comments: \_\_\_\_\_

DIRECTIONS: \_\_\_\_\_

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**January 28, 2014** - Prior to the installation of a *HydroFLOW* water conditioner on the incoming well pipe, the home owners treated the well with chlorine, a water sample was taken at the kitchen faucet. The lab test results stated the water was **Yellow and Positive for Total Coliform - Unsatisfactory**.

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**TOTAL COLIFORM BACTERIA DRINKING WATER ANALYSIS**

**Client Name:** Sherrrie Dahlen **Lab Use Only Lab Number:** 2014-0095

**Mailing Address:** 36145 Bone Tide Dr  
Kenai, AK 99611 **Phone:** 398-4596 / 283-4485  
**Fax/Email:** sac@alaska.net

**Sample Information:**  Residential Water System  Public Water System ID No. \_\_\_\_\_

**Legal Description:** Lot 5 Bk 5 Marinas Watch Subd

**Sample Location:** (bathroom, kitchen, etc) kitchen

**Sampled:** Date: 1/28/14 Time: 7:35am Sampler's Initials: SD

**Sample Type:**  Routine  Special Purpose \_\_\_\_\_  
 Repeat Sample (For previous unsatisfactory sample with lab number ( \_\_\_\_\_ ))

**Disinfection:**  Untreated  Treated (chlorine, UV, etc.) \_\_\_\_\_

**Relinquished:** Date: 1/28/14 Time: 4:15pm By: Sherrrie Dahlen

**Received:** Date: 28 JAN 14 Time: 4:15 By: HW Paid: CK# 5346

**Condition:**  Satisfactory  Rejected Comments: \_\_\_\_\_

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↓ To be filled out by Lab ↓

Date Test Started: 28 Jan 14 Time Test Started: 1620 Analyst: ST

Color:	Date	Time	Analyst
<input type="radio"/> Clear and Negative for Total Coliform - Satisfactory	<u>29 Jan 14</u>	<u>1620</u>	<u>ST</u>
<input checked="" type="radio"/> Yellow and Positive for Total Coliform - Unsatisfactory			
<input type="radio"/> Yellow w/ Fluorescence and Confirmed E. Coli.			

Comments: \_\_\_\_\_

DIRECTIONS: \_\_\_\_\_

T:W-LABWater Lab Form(Micro)COLIFORM Customer Form

REV5/13



**June 5, 2014** - The home owners installed a *HydroFLOW* S38 water conditioner on the incoming well pipe. Homeowners were left with four (4) BIOSAN Laboratories Bacteria & Fungi dip slides to perform home bacteria tests at weekly intervals.

**June 17, 2014** - Weekly bacteria test shows zero bacteria in the well water.

**June 23, 2014** - Homeowners took a water sample from the kitchen faucet to be tested in a lab. The lab test results stated the water was ***Clear and Negative for Total Coliform - Satisfactory.***

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**TOTAL COLIFORM BACTERIA DRINKING WATER ANALYSIS**

Client Name: Shernie Dahlen Lab Use Only Lab Number: 20140943  
Mailing Address: 36145 Bore Tide Dr Phone: 283-4485  
Kenai, AK 99611 Fax/Email: sad@alaska.net

Sample Information:  Residential Water System  Public Water System ID No. \_\_\_\_\_

Legal Description: Lot 5 Blk 5 Mariners Sub

Sample Location: (bathroom, kitchen, etc.) Kitchen

Sampled: Date: 6/23/14 Time: 7:18am Sampler's Initials: SD

Sample Type:  Routine  Special Purpose \_\_\_\_\_  
 Repeat Sample (For previous unsatisfactory sample with lab number ( \_\_\_\_\_ ))

Disinfection:  Untreated  Treated (chlorine, UV, etc.) HydroFlow

Relinquished: Date: 6/23/14 Time: 9:05am By: Shernie Dahlen

Received: Date: 6/23/14 Time: 9:05AM By: KV Paid: CK#5380

Condition:  Satisfactory  Rejected Comments: \_\_\_\_\_

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↓ To be filled out by Lab ↓

Date Test Started: 6/23/14 Time Test Started: 15:20 Analyst: mg

Color:	Date	Time	Analyst
<input checked="" type="radio"/> Clear and Negative for Total Coliform - Satisfactory	<u>24 Jun 14</u>	<u>16:20</u>	<u>ST</u>
<input type="radio"/> Yellow and Positive for Total Coliform - Unsatisfactory			
<input type="radio"/> Yellow w/ Fluorescence and Confirmed E. Coli.			

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

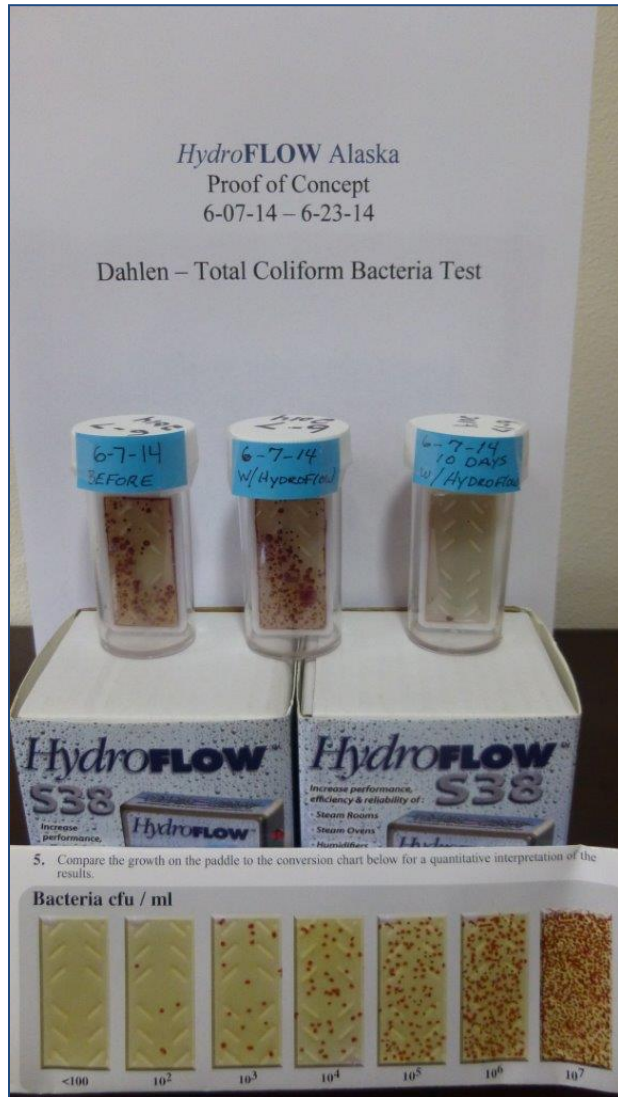
DIRECTIONS: \_\_\_\_\_

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**Customer comment:** "We had the water tested and it came back clear. Yippee!"



### Additional information:



### The Very Unpleasant Facts about Total Coliforms:

The most basic test for bacterial contamination of a water supply is the test for **Total Coliform Bacteria**. Total Coliform counts give a general indication of the sanitary condition of a water supply.

**Total Coliforms** include bacteria that are found in the soil, in water that has been influenced by surface water, and in human or animal waste.

**Fecal Coliforms** are the group of the total Coliforms that are considered to be present specifically in the gut and feces of warm-blooded animals. Because the origins of fecal Coliforms are more specific than the origins of the more general Total Coliform group of bacteria, Fecal Coliforms are considered a more accurate indication of animal or human waste than the Total Coliforms.

**Escherichia coli (E. coli)** is the major species in the Fecal Coliform group. Of the five general groups of bacteria that comprise the Total Coliforms, only E. coli is generally not found growing and reproducing in the environment. Consequently, E. coli is considered to be the species of Coliform bacteria that is the best indicator of fecal pollution and the possible presence of pathogens.