



## Case Study - Coliform Bacteria in Well Water



**Address:**

**Contact Persons:**

**Phone Number:**

**Test Performed By:**

*HydroFLOW Alaska - Mike Colton 907-260-5995*

**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

Please Read Instructions On Back  
Print All Information

**TOTAL COLIFORM BACTERIA DRINKING WATER ANALYSIS**

Client Name: [Redacted] Lab Use Only Lab Number: 2013-1941  
Mailing Address: [Redacted] Phone: 283-4485  
Fax/Email: 283-8450 | sad@alaska.net

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

Legal Description: Lot 5 Bks 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: Shuni Dehen

Received: Date: 30 Oct 13 Time: 10:40 By: HW Paid: \$527.50

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	31 Oct 13	1545	ST
<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: [Redacted] Lab Use Only Lab Number: 2014-0095  
Mailing Address: [Redacted] 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 Marine 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: Shuni Dahn  
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

COLILERT TEST RESULTS (SM 9223B)	Date	Time	Analyst
Color: <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-LAB Water Lab Form MicroCOLIFORM 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: [Redacted] Lab Use Only Lab Number: 2014 0943  
Mailing Address: [Redacted] Phone: 283-4485  
Address: [Redacted] Fax/Email: sac@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: JLD

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: Shami Dablu

Received: Date: 6/23/14 Time: 9:05AM By: KJ 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: m6

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

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

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

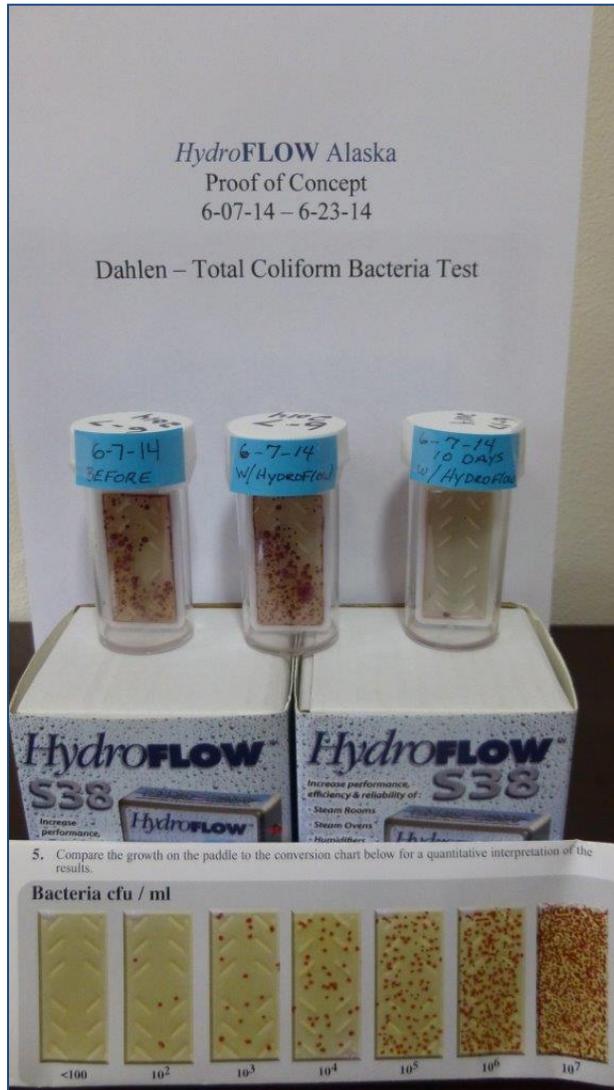
DIRECTIONS: \_\_\_\_\_

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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.