Clean Water

Healthy Families

Learn about how Cook Inletkeeper can help you ensure clean drinking water for you and your family.
Presentation Outline

Cook Inletkeeper
Mission & Programs

Water Quality Basics

Water Testing Options

Sampling Schedule and Instructions

Questions?

Wrap Up & Distribute Kits
Cook Inletkeeper
Mission and Programs

CLEAN WATER
- Safe Drinking Water
- Electronics Recycling
- Clean Boating & Harbors
- Citizen Monitoring

HEALTHY HABITAT
- Stream Temperature Data Collection
- Habitat Mapping
- Conservation Partnerships

CLEAN ENERGY
- Oil and Gas Drilling and Transportation Issues
- Mine Development
- Energy Efficiency
- Advocacy
## Safe Drinking Water Program Goals

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Educate Alaskans about the potential contaminants and health risks associated with some private drinking water sources.</td>
</tr>
<tr>
<td>Information</td>
<td>Provide information and resources regarding private drinking water testing.</td>
</tr>
<tr>
<td>Technical Assistance</td>
<td>Assist private well owners with taking samples and interpreting test results, including finding local and state resources for treatment of contaminated water.</td>
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<tr>
<td>Stewardship</td>
<td>Encourage Alaskans to take responsibility for long-term maintenance and testing of private drinking water sources, and protecting those sources through wise land use.</td>
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</tbody>
</table>
A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place.

The Cook Inlet watershed encompasses over 47,000 square miles of land!
Poor Water Quality

Fuel and Chemical Leaks

Naturally Occurring Minerals

Poorly Installed or Degraded Water Systems

Sewer and Septic Infiltration

Animal Waste
Common Water Contaminants & Health/Aesthetic Effects

- **Bacteria**: Fecal bacteria, such as *E. coli*, can cause severe gastrointestinal illnesses. This can be life threatening for infants and those with compromised immune systems.

- **Nitrates**: High nitrate concentrations can be fatal to infants, interfering with their blood’s ability to carry oxygen. Long term exposure to high nitrate levels can lead to hemorrhaging of the spleen.

- **Arsenic**: Skin damage, diabetes, increased cancer risk, and circulatory system problems are potential affects of chronic arsenic poisoning.

- **Copper**: Vomiting, diarrhea, cramps, and nausea can be the result of over consumption of copper. Long term exposure can also cause liver and kidney damage to infants.

- **Lead**: High levels for infants and children can lead to physical and mental developmental delays. Adults exposed to high levels of lead may experience kidney problems and high blood pressure.

- **Sodium**: High levels of sodium may contribute to the risk of high blood pressure, especially if you are overweight and/or have a family history of hypertension.
## Common Water Contaminants & Health/Aesthetic Effects (continued)

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>pH</strong></td>
<td>While not a health risk in itself, acidic water can cause corrosivity, leaching metals from pipes and fixtures. Alkali water can cause poor water taste and buildup in plumbing.</td>
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<tr>
<td><strong>Iron &amp; Manganese</strong></td>
<td>These chemicals can affect the flavor of food and water. Laundry and appliances can become stained red or black, and iron and manganese support the growth of bacteria that can clog pumps, pipes and valves.</td>
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<tr>
<td><strong>Hardness</strong></td>
<td>Mineral buildup on pipes and plumbing fixtures, bitter coffee, deposits on dishes, lower water pressure, lower appliance efficiency.</td>
</tr>
<tr>
<td><strong>Health Concern</strong></td>
<td>Caused by hydrogen sulfide gas, this can be produced by certain &quot;sulfur bacteria&quot; in the groundwater, well, or the water distribution system. It can also be produced by sulfur bacteria or chemical reactions inside water heaters.</td>
</tr>
<tr>
<td><strong>Aesthetic &amp; System Efficiency Concern</strong></td>
<td>Scale buildup in pipes, reduced efficiency of hot water heaters and water filters, and a bitter or salty taste are potential effects from high TDS.</td>
</tr>
<tr>
<td><strong>Rotten Egg Smell</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Total Dissolved Solids</strong></td>
<td></td>
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</tbody>
</table>
Good Water Quality

- Know Your Water Source
- Periodic Water Testing
- Well and Water System Inspection and Maintenance
- Treatment
- Land Stewardship
Water Testing
Water Testing Options

$279
Well Safe III: All of Well Safe I and II, plus:
- Sodium
- Lead
- Copper

$232
Well Safe II: All of Well Safe I, plus:
- Hardness
- pH
- Iron & Manganese
- Corrosivity

$140
Well Safe I
- Bacteria ($50)
- Nitrates
- Arsenic
Sampling Schedule

Take samples between 4:00am and 9:00 am. Keep samples COOL, but not frozen until transport.

Bring samples, paperwork, and payment to Analytica’s lab in Anchorage or Wasilla, or send with a courier.

Receive results in in 10 business days. Report will come directly to you from the lab.

Forward results to Cook Inletkeeper (optional, see Data Use Agreement for more information).
Sampling Instructions: Collecting Samples

Lead and Copper:
- Run water for 3-4 minutes the night before taking the sample.
- DON’T USE THE WATER FOR 6-8 HOURS!
- Collect the ‘first draw’ of water in the morning. Don’t let the water run first.
- Fill bottle with cold water, cap bottle, fill out information on label.

Bacteria:
- Wash your hands! Bacteria is everywhere!
- Remove screen, disinfect faucet.
- Run water for 2 minutes.
- Fill bottle with cold water, cap bottle, fill out information on label.
- Take care not to contaminate sample by touching inside the lid or putting the lid on the counter or sink.

All other sample bottles:
- No special instructions, just fill ‘em up!
Sampling Instructions: Collecting Samples

Well Safe I and II:
- First, collect the bacteria sample.
- Fill the rest of the bottles.

Well Safe III:
- Let water sit in the pipes 6-8 hours before sampling.
- First, collect the Lead and Copper sample.
- Second, collect the bacteria sample.
- Fill the rest of the bottles.
Sampling Instructions: Forms & Payment

- **Chain of Custody** – MORE DETAIL NEXT!!
  - Use pen only.

- **Lead and Copper Sample Worksheet** – MORE DETAIL NEXT!!
  - Only for Well Safe III

- **Payment**
  - Check only, Payable to Analytica.

- **Private Water Source Information**
  - Optional

- **Data Use Agreement**
  - Optional

- **Program Evaluation**
  - Optional
Sampling Instructions: Chain of Custody

Your Contact Info

Your Name

Sign, date, & time when dropping off samples

Your Name

Your Name
Sampling Instructions: 
Lead and Copper Form

LEAD & COPPER WATER SAMPLING INSTRUCTIONS

1. TO TAKE THIS SAMPLE YOUR WATER MUST BE OFF FOR A PERIOD OF 6 HOURS, BUT NO LONGER THAN 8 HOURS.
2. IF YOU HAVE COLLECTED THIS SAMPLE BEFORE OR AFTER THIS TIME REQUIREMENT, ANALYTICA CANNOT ACCEPT YOUR SAMPLE. INCORRECT SAMPLING MAY CAUSE RE-SAMPLING AT CLIENTS EXPENSE.

1. A one (1) Liter Plastic sample bottle should be obtained from Analytica.
2. Select the location from which you are going to take your water sample. Kitchen Sink or Bathroom Sink is recommended.
3. Remove any screen from Faucet before taking the sample.
4. Place bottle directly under Tap, turn water on. Fill to shoulder of bottle and replace lid.
5. Complete all information in the box below and return to the laboratory immediately.

TO BE COMPLETED BY RESIDENT OR SAMPLER

First Name __________________________ Last Name __________________________

WATER WAS LAST USED ON: TIME ______ A.M OR P.M. DATE ______

Date and Time sample was taken: Time ______ A.M OR P.M. DATE ______

Sample was taken from:
Please Circle: Kitchen Sink, Other, Please List if Other __________________________

Water sat in pipes unused for: ______ Hours. WATER MUST BE OFF FOR 6 (SIX) HOURS BUT NO MORE THAN (EIGHT) HOURS. ANALYTICA WILL NOT ACCEPT YOUR WATER SAMPLE IF WATER WAS OFF LONGER THAN 8 (EIGHT) HOURS.

I have read the above directions and have taken a tap sample in accordance with these directions.

Signed: __________________________ DATE: __________________________

Please Print Name: __________________________
Sampling Instructions - Review

• Let household/family members know what is going on.

• Fill out paperwork and bottles completely.

• Pay attention to the order to take the samples.

• Don’t rinse bottles before filling. The white powder is a preservative.

• Don’t overfill the bottles, but fill them to the ‘neck’.

• Use caution to prevent contamination.

• Keep samples cool, but not frozen.
Water Systems Council

EPA

- Safe Drinking Water Hotline 1-800-426-4791
- http://water.epa.gov/drink/index.cfm
- http://www.epa.gov/privatewells/pdfs/household_wells.pdf

Alaska Department of Environmental Conservation

- http://www.dec.state.ak.us/EH/dw/index.htm

UAF Cooperative Extension Service

- http://www.uaf.edu/ces/nrcd/water/

National Sanitation Foundation

- www.nsf.org

Cook Inletkeeper

- http://inletkeeper.org/SAFEDRINKINGWATER
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Newsletters!

Events!

www.inletkeeper.org

Protecting Alaska’s Cook Inlet watershed and the life it sustains.

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