

Analysis of Arsenic Levels

Thurston High School Well Water Testing Program



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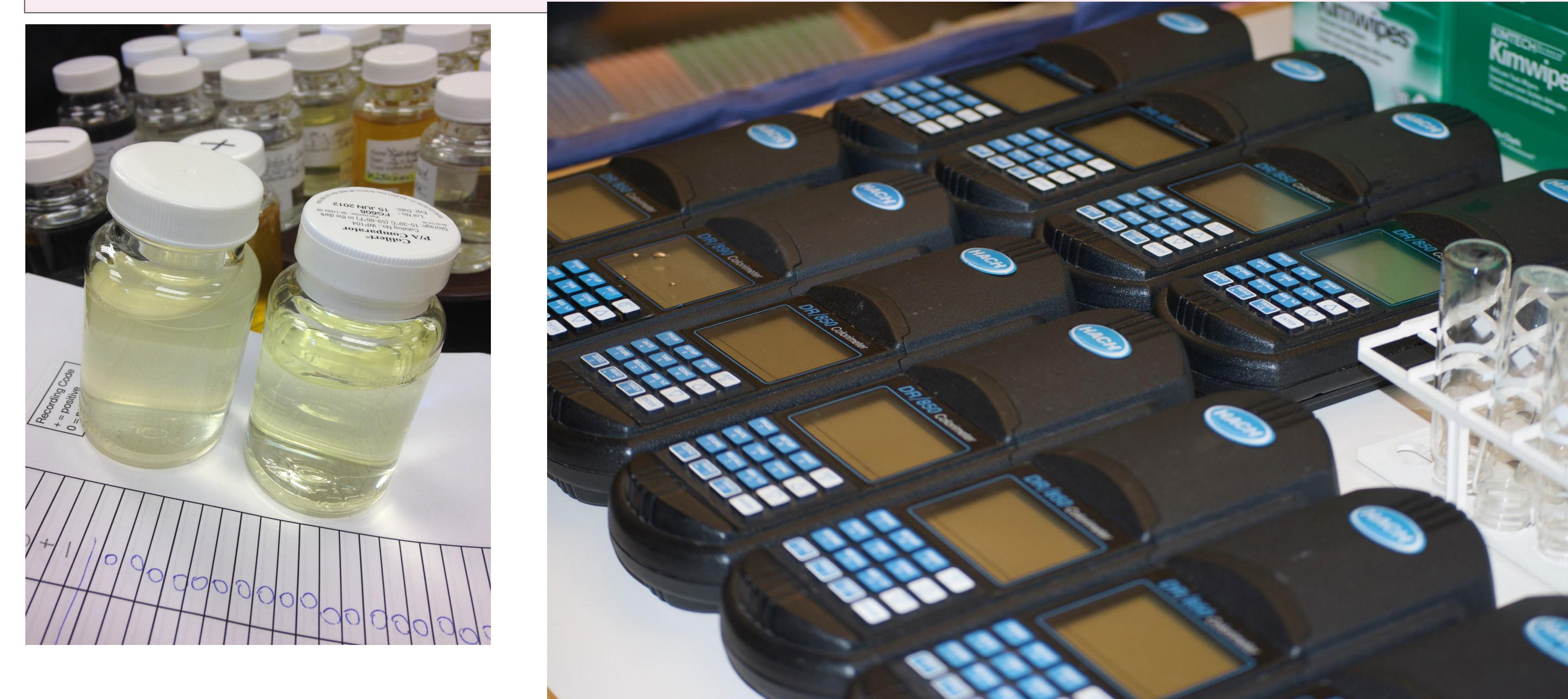
The Well Water Testing Program Background

- The Well Water testing team was founded in 2001.
- Students apply through a selective process to become a part of the team, one year prior to joining.
- Students volunteer six times over the course of the school year to test the quality of our communities' well water



What We Test For

- Arsenic
- Coliform Bacteria
- E.coli Bacteria
- Conductivity
- Copper
- Hardness
- Iron
- Nitrates
- Turbidity
- pH



Sample Customer Report

Customer Information			
Date	12/6/2016	Customer's number	1635
Last Name		First Name	Meggan
Street Address			filtered/sediment filtered only
City	Dexter	State	Oregon
Zip	97431		
Phone		email	
Preliminary Test Results Thurston High Community Water Testing Lab			
Your Water	EPA MCLG ¹	EPA MCL ²	Your Water Quality
Arsenic	10	PPB ³	Warning!
Total Coliform Bacteria	Present	P/A ⁵	Exceeds EPA Levels!
E.coli Bacteria	Present	P/A	Exceeds EPA Levels!
Conductivity	287	u/S	OK
Copper	0.02	mg/L	OK
Hardness	8.8	mg/L	Soft
Iron	0.02	mg/L	OK
Nitrates	0.01	mg/L	OK
Turbidity	4.76	NTU	OK
pH	8.44		

1. Maximum Contaminant Level Goal (MCLG) - The level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety and non-enforceable public health goals as set by the Environmental Protection Agency.
2. Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCL's are enforceable standards as set by the Environmental Protection Agency.
3. mg/L - milligrams per Liter unless otherwise stated. mg/L = 1 part per million.
4. PPB = parts per billion
5. P/A = present/absent

Disclaimer: These results are preliminary.
Please contact the local lab below for certified test results:

Analytical Laboratory Group
361 W. 5th Ave.
Eugene, OR 97401
541-485-8404

Quality is Key for Successful Data Collection

- Team uses EPA approved chemical procedures
- Students are trained to test with standard solutions
- Correction blanks on reagents
- Dedicated glassware
- Random replicates & split sampling for quality control/assurance
- Electronic data collection to reduce risk for errors

Arsenic Study in Greater Springfield Area

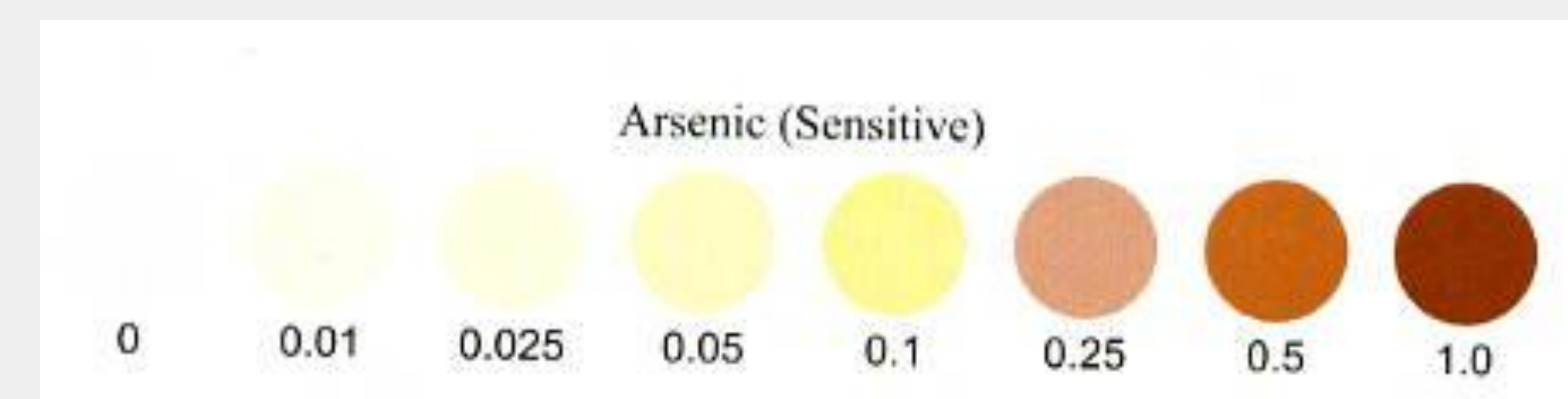
Arsenic is a naturally occurring element found in soils and minerals,, and can leach into private wells and groundwater.

Why treating your wells for arsenic is important:

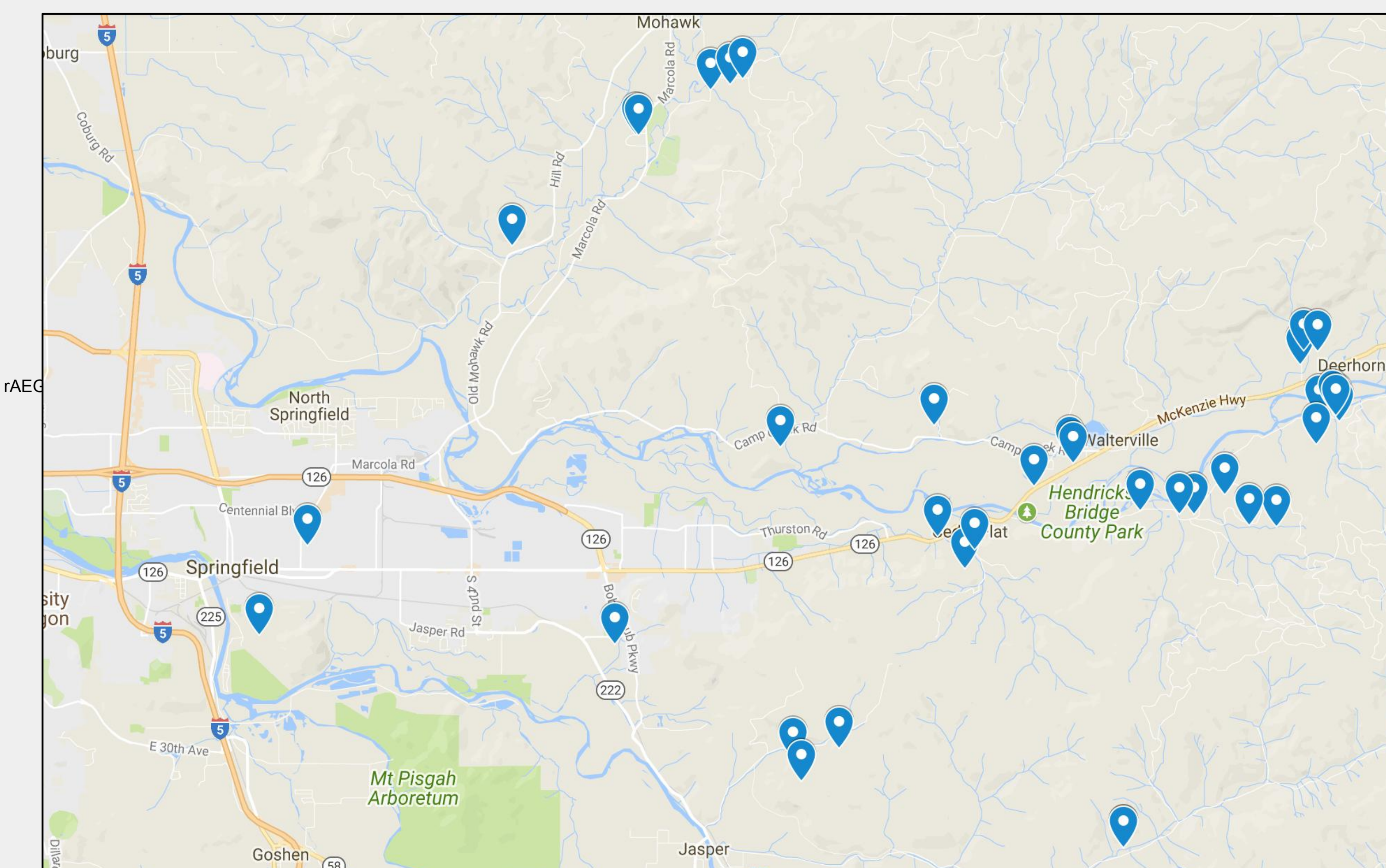
- long exposure to contaminated water can cause a plethora of health issues
- Type 2 diabetes, High blood pressure, Impaired nerve function
- It can not be boiled out

How We Test

We use Hach Reagents and color detection test to determine the range of arsenic levels (sample detection strip on right)



Map of Detected Arsenic (30ppb or more) Since 2001



Map Analysis

The EPA maximum safe limit for drinking water is 10ppb. Between Cedar Flats and the Deer Horn area there have been higher concentrations of 30 or more parts per billion of arsenic that the well water team has tested since 2001. It seems to be near the McKenzie river and the creeks that branch off from that river.

Conclusion

- People in Springfield with high concentrations should test for arsenic regularly for the benefits of health.
- Do not boil the water. Arsenic is a metal and cannot be removed by boiling the water.
- In fact, boiling the water will lead to evaporation which will increase the concentration of arsenic in the water.
- Re-test your water to confirm the results. In general, it is recommended that the water quality in private wells be tested at least once a year.
- Drinking and cooking with bottled water will reduce your exposure to arsenic. Be sure to keep a well log and note any water quality issues.
- Regular inspections of your drinking water well will also help identify potential problems

Source: Oregon State University Well Water Testing Program