

Providing Earth's Most Critical Resource

A brief history and current status of SUEZ (Boise Operation), an investor owned public water supply





- **1881**
- The first piped water system in Boise was installed. H.B. and B.M. Eastman installed the water line to supply water for the Overland Hotel.

- **1889**
- The City of Boise granted a franchise to the Eastman brothers to lay pipes in the city streets and supply domestic water to the city.



- **1913**
- The Public Utilities Commission was formed to regulate domestic water supply rates.



SHOP, 13TH AND FRONT STREETS, EAST VIEW

1928

- What was called the Boise Artesian Water Company was reorganized as the Boise Water Corporation and in July became affiliated with General Water Works Corporation.

1946

- Boise Water Corporation was purchased by General Water Works of Pine Bluff, Arkansas.

1995

- The Boise Water Corporation became affiliated with United Water Resources when the General Water Works Corporation and United Water Resources merged. At the time, approximately 30 percent of United Water Resources stock was owned by Suez Lyonnaise des Eaux.



**BOISE WATER
CORPORATION**

A General Waterworks Company



1995

- Boise Water Corporation changed the name to United Water Idaho.

2000

- Suez acquired the outstanding stock of United Water Resources.

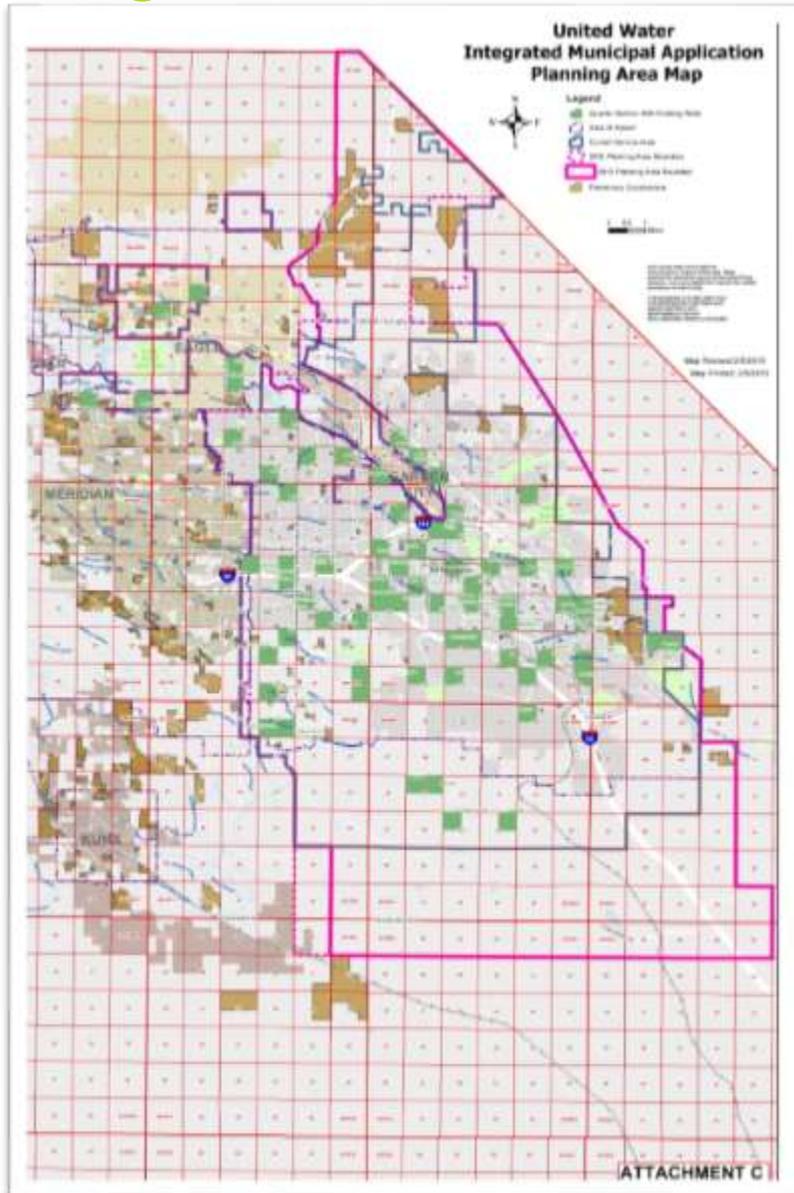
2009

- Suez Environment formed as a result of a merger between GDF and Suez.

2015

- Suex Environnement changed the name to SUEZ

Serving the Boise Area



Serving 240,000+ people (89,000+ connections)

1,200 miles of mains (2"-30")

84 wells

2 surface treatment plants

97 employees



Part of the Community



Partner in Education

Summer Internship Program

Water Efficient Landscaping
classes

i-STEM education

“Incredible Aquifer” activity



Drew Powell - CS Intern

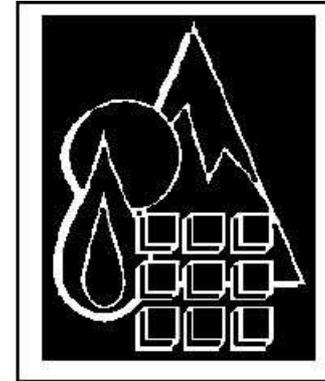


Kevin O'Neill – IT Intern

Regulatory Environment

SUEZ is regulated by:

- Idaho Public Utilities Commission
(Rates, operations, customer issues)
- Idaho Department of Water Resources
(Water rights, supply)
- Idaho Department of Environmental Quality
(State Drinking Water Rules)
- U.S. Environmental Protection Agency
(Federal regulations, including Safe Drinking Water Act)



Source of Supply – Surface Water



Surface Water Rights

Priority dates range from 1889 to 2001

Storage contracts with the Bureau of Reclamation for space in Lucky Peak and Anderson Ranch Dam

Natural flow rights

Snake River “Exchange” rights

Shares held in canal companies

Basin 63 Rental Pool as needed

Surface Water Treatment – Columbia WTP



Surface Water Treatment – Marden WTP



Source of Supply – Groundwater



Groundwater Rights

Diverted from multiple locations throughout SUEZ' service territory

Priority dates range from 1895 to 2002



SUEZ (Boise Operation) Problem Contaminants

THREE MOST PROBLEMATIC
CONTAMINANTS IN BOISE:

Arsenic

Uranium

Tetrachloroethylene



2 of the above contaminants are naturally occurring
and one is the result of improper disposal.

ARSENIC



Arsenic (MCL = 10 ppb)

- Naturally occurring trace element found in rocks & soils.
- Enters drinking water supplies from water's contact with the natural deposits in the earth.
- Recognized as a toxic element and is also considered a human health concern because it can contribute to skin, bladder, lungs, kidney, nasal passages, liver, and prostate.

UWID Results

- In the 70 sources of supply used during 2013, UWID sources had the following ranges:
Minimum – 0 (non-detect)
Maximum – 7 ppb
Average – 2 ppb

We no longer use 3 sources due to high arsenic levels.

Testing frequency – quarterly, annually or every 3 years. (At DEQ discretion)

URANIUM



URANIUM (MCL = 30 ppb)

- Naturally occurring radioactive metal that occurs in low concentrations in certain types of soils and rocks, especially granites.
- Uranium in groundwater is a result of the dissolution of uranium bearing minerals that have been in contact with groundwater for long periods of time.

UWID URANIUM LEVELS

- Minimum = 0 (ND)
- Maximum = 24 ppb
- Average = 6.3 ppb

Health Effects of Uranium

- Intakes of uranium exceeding EPA standards can lead to increased cancer risk, liver damage, or both.

Testing Frequency - quarterly, annually, or every 3, 6, or 9 years.(DEQ discretion)

TETRACHLOROETHYLENE (aka Perc)



TETRACHLOROETHYLENE (MCL = 5 ppb)

- A nonflammable, liquid solvent used in dry cleaning, wood processing, fabric manufacturing, and metal degreasing.

CONTAMINATION

- When perc is improperly disposed or spilled, some of it will evaporate into the air. The rest will seep into the soil. It may mix with ground water and contaminate water supplies.
- Perc is shown to cause liver cancer, kidney cancer, and leukemia in laboratory animals.

UWID

- 5 wells have detectable Perc, but < 5 ppb
- 2 wells with Perc > 5 ppb.
- 2 GAC treatment facilities to remove it
- Testing Frequency – quarterly, annually, or every 3, 6, or 9 years. (DEQ discretion)

WATER INFORMATION



Drinking Water Quality

Primary Standards

Directly related to the safety of the water. We test for 82 substances.

Organic Chemicals

Arsenic (ppb)
Boron (ppm)
Chloroform (ppb)
Dieldrin (ppb)
Heptachlor Epoxide (ppb)
Heptachlor Epoxide (ppb)
Heptachlor Epoxide (ppb)

Copper (ppm)
Lead (ppb)
Silver (ppb)

Microbiological

Total Coliforms (n/100 ml)
Total Coliforms (n/100 ml)
Total Coliforms (n/100 ml)
Total Coliforms (n/100 ml)
Total Coliforms (n/100 ml)

Radionuclides

Radium-226 (pCi/L)
Radium-228 (pCi/L)
Total Alpha (pCi/L)
Total Beta (pCi/L)

Organic Chemicals

Arsenic (ppb)
Benzene (ppb)
Benzene (ppb)

Disinfection By-Products

Total Trihalomethanes (TTHM) (ppb)
Total Haloacetic Acids (THAA) (ppb)
Total Haloacetonitriles (THAN) (ppb)
Total Halomethanes (THM) (ppb)

Disinfection Residuals

Chlorine Residual (ppm)

Annual Water Quality Report

Definitions

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Locational Running Annual Average (LRAA): The yearly average of all the results at each specific sampling site in the distribution system.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety for control of microbial contaminants.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant allowed in drinking water. There is convincing evidence that addition of disinfectant is necessary for control of microbial contamination.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectant to control microbial contamination.

ND: Not detectable.
NDL: Not detected.

NTE: Nephelometric Turbidity Unit.

Parts Per Billion (ppb): The equivalent of one second in 32 days.

Parts Per Million (ppm): The equivalent of one second in 32 million years.

Primary Standards: Federal drinking water regulations for substances that are health related. Water suppliers must meet all primary drinking water standards.

Secondary Standards: Federal drinking water measurements for substances that do not have an impact on health. These reflect aesthetic qualities such as taste, odor and appearance. Secondary standards are recommendations, not mandates.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

➤ This means "greater than."
➤ This means "less than or equal to."

UNITED WATER IDAHO FACT

NUMBER OF WELLS: 81

Secondary Standards Related to the aesthetic quality of drinking water

Contaminant	Goal/Unit	Highest Result	Range of Results	System Average	Violation	Likely Source
Asbestos (ppb)	NA	ND	ND - ND	ND	No	Naturally occurring
Aluminum (ppm)	0.05	0.05	0.05 - 0.05	0.05	No	Naturally occurring
Calcium (ppm)	75	75	75 - 75	75	No	Naturally occurring
Chloride (ppm)	250	250	250 - 250	250	No	Naturally occurring
Copper (ppm)	1.3	1.3	1.3 - 1.3	1.3	No	Naturally occurring
Iron (ppm)	0.3	0.3	0.3 - 0.3	0.3	No	Naturally occurring
Manganese (ppm)	0.05	0.05	0.05 - 0.05	0.05	No	Naturally occurring
Nitrate (ppm)	10	10	10 - 10	10	No	Naturally occurring
Nitrite (ppm)	0.1	0.1	0.1 - 0.1	0.1	No	Naturally occurring
Sulfate (ppm)	250	250	250 - 250	250	No	Naturally occurring
Total Dissolved Solids (ppm)	500	500	500 - 500	500	No	Naturally occurring
Zinc (ppm)	0.05	0.05	0.05 - 0.05	0.05	No	Naturally occurring



Investing in the System



CAPITAL INVESTMENTS:

\$62.7 million from 2015 to 2019

Thank you.

Questions?