Soquel Creek Water District is proud to report that in 2016 the District’s water met all established drinking water health standards set by the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board).
In 2016, **DISTRICT CUSTOMERS** received water from 13 wells pumping from the Santa Cruz Mid-County groundwater basin—specifically the Purisima Formation and the Aromas Red Sands. Aquifers are comprised of layers of rock, sand, sandstone, fractured rock, or other permeable layers that allow for water to be collected and stored in the pore spaces (voids) between the soil and rocks. Groundwater wells are designed to pump water from the most permeable layers of the aquifer—areas where water can flow easily from pore spaces into the constructed well pipe—and eventually to the surface. The groundwater is then treated and served to customers through distribution system pipes, ultimately reaching customers’ taps. Delivered water from both sources meets all current drinking water health standards. The Purisima Formation is naturally high in iron and manganese, and the water supplied from these aquifers is treated using oxidation and filtration to reduce these elements. The Aromas Red Sands aquifer contains naturally-occurring hexavalent chromium (Chromium 6), which is reduced through a resin-based ion exchange process. To learn more about aquifers, watch the following video [https://vimeo.com/180918902](https://vimeo.com/180918902).

For approximately two days in January 2016, the District received a small volume of treated drinking water from the City of Santa Cruz (City) through a shared intertie connection at the top of 41st Avenue and Soquel Drive, which allows for water to be transferred between the District and the City. The water transferred from the City supplied District customers in the Capitola and Soquel neighborhoods nearest Soquel Drive. The City’s water sources are a mix of surface and groundwater, depending on the availability of source water in the City’s portfolio of supply options. Specific water quality information for the City can be found at [http://www.cityofsantacruz.com/departments/water/online-reports/consumer-confidence-report](http://www.cityofsantacruz.com/departments/water/online-reports/consumer-confidence-report).
WATER QUALITY

SOURCE WATER ASSESSMENTS

In 2015, the District updated its 2002 source water assessments of 13 of its wells. Initial source water assessments for two additional wells were completed in 2011. These assessments identify activities that could potentially contaminate a drinking water well.

**Aromas Red Sands**

The Aromas Red Sands aquifer supplies are considered to be the most vulnerable to on-site residential septic systems and potential leakage from sewer lines. Some of these wells are also vulnerable to contamination from nearby parks, a nearby golf course, irrigated crops, fertilizer/pesticide/herbicide applications, high density housing, transportation corridors, other supply wells, and/or chemicals used at the drinking water treatment plants.

**Purisima Formation**

The Purisima Formation supplies are considered to be the most vulnerable to contamination from dry cleaners, historic and active automobile gas stations and repair shops, sewer collection systems, photo processing/printing establishments, high density housing, transportation corridors, parking lots, other supply wells, and utility stations/maintenance areas.

Copies of the Vulnerability Summaries are available on the District’s website at: http://www.soquelcreekwater.org/documents/reports?field_report_type_value=Water+Quality&keys=source+water&=Search and the full reports are available by contacting the District’s office.
CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER INCLUDE:

**Microbial contaminants**, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

**Inorganic contaminants**, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

**Pesticides and herbicides**, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.

**Organic chemical contaminants**, including synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.

**Radioactive contaminants**, that can be naturally-occurring or be the result of oil or gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration (USFDA) regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

**WATER QUALITY TESTING**

During the past year, the District tested for over 130 constituents in order to ensure your water meets State and Federal drinking water standards. Also in 2016, the District completed triennial lead and copper monitoring at 31 homes which were constructed using copper pipes with lead solder prior to the 1986 federal ban on lead solder.

All test samples are collected and reported in accordance with standards and requirements established by the USEPA and the State Board. These test results reflect all of our groundwater. Only those regulated constituents that had detected levels are shown.

**WHAT ARE WATER QUALITY GOALS?**

In addition to mandatory water quality standards, USEPA and DDW have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. The Water Quality Analysis Table includes three types of water quality goals:

**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 are set by the USEPA.

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

**Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Office of Environmental Health Hazard Assessment (OEHHA).
WHAT ARE WATER QUALITY STANDARDS?

Drinking Water Standards established by USEPA and the State Board set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The Water Quality Analysis Table in this report shows the following types of water quality standards:

**Maximum Contaminant Level (MCL):**
The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible.

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

**Secondary MCLs:** Are set to protect the odor, taste and appearance of drinking water.

**Primary Drinking Water Standards:**
MCLs and MRDLs (see definitions above) for contaminants that affect health, along with their monitoring and reporting requirements and water treatment requirements.

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

HOW ARE CONTAMINANTS MEASURED?

Water is sampled and tested throughout the year. Detected constituents are measured in:

- **Parts per million (ppm) or milligrams per liter (mg/L)** – equivalent to 1 drop in 14 gallons
- **Parts per billion (ppb) or micrograms per liter (μg/L)** – equivalent to 1 drop in 14,000 gallons
- **Parts per trillion (ppt) or nanograms per liter (ng/L)** – equivalent to 1 drop in 14,000,000 gallons
## PRIMARY HEALTH STANDARDS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>MCL or [MRDL]</th>
<th>PHG, (MCLG) or [MRDLG]</th>
<th>Year Tested</th>
<th>Range of Detections</th>
<th>Average Amount</th>
<th>Typical Sources of Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Disinfection Byproducts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Trihalomethanes - TTHM (ppb)</td>
<td>80</td>
<td>N/A</td>
<td>2016</td>
<td>3.6 – 56</td>
<td>43</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Haloacetic Acids - HAAS (ppb)</td>
<td>60</td>
<td>N/A</td>
<td>2016</td>
<td>ND – 74</td>
<td>5.5</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td><strong>Disinfectant Residual</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlorine Residual (ppm)</td>
<td>[4.0]</td>
<td>[4.0]</td>
<td>2016</td>
<td>0.18 – 18</td>
<td>0.75</td>
<td>Drinking water disinfectant added for treatment</td>
</tr>
</tbody>
</table>

## PRIMARY HEALTH STANDARDS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>MCL</th>
<th>PHG or (MCLG)</th>
<th>Year Tested</th>
<th>Range of Detections</th>
<th>Average Amount</th>
<th>Typical Sources of Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inorganic Constituents</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arsenic (ppb)</td>
<td>10</td>
<td>0.004</td>
<td>2016</td>
<td>ND – 2.5</td>
<td>N/A</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Chromium, hexavalent (Cr6) (ppb)</td>
<td>10</td>
<td>0.02</td>
<td>2016</td>
<td>ND – 7.5</td>
<td>N/A</td>
<td>Naturally occurring chromium-bearing minerals</td>
</tr>
<tr>
<td>Fluoride (ppb)</td>
<td>2.0</td>
<td>1</td>
<td>2016</td>
<td>0.11 – 0.48</td>
<td>0.23</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Nitrate (as N) (ppm)</td>
<td>10</td>
<td>10</td>
<td>2016</td>
<td>ND – 4.6</td>
<td>0.68</td>
<td>Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits</td>
</tr>
</tbody>
</table>

## Radioactive Constituents

<table>
<thead>
<tr>
<th>Constituent</th>
<th>MCL</th>
<th>PHG or (MCLG)</th>
<th>Year Tested</th>
<th>Range of Detections</th>
<th>Average Amount</th>
<th>Typical Sources of Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Naturally occurring materials</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ND – 7.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## OTHER MONITORING RESULTS

<table>
<thead>
<tr>
<th>Constituent</th>
<th>MCL</th>
<th>PHG or (MCLG)</th>
<th>Year Tested</th>
<th>Range of Detections</th>
<th>Average Amount</th>
<th>Typical Sources of Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hardness (as CaCO₃) (ppm)</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>2016</td>
<td>146 – 375</td>
<td>217</td>
<td>Sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.</td>
</tr>
<tr>
<td>Sodium (ppm)</td>
<td>N/A</td>
<td>HA = 20</td>
<td>2016</td>
<td>18 – 86</td>
<td>43</td>
<td>Salt present in water; generally naturally occurring.</td>
</tr>
</tbody>
</table>

## RESIDENTIAL TAP MONITORING FOR LEAD AND COPPER

<table>
<thead>
<tr>
<th>Constituent</th>
<th>MCL</th>
<th>PHG or (MCLG)</th>
<th>Year Tested</th>
<th>90th Percentile Value</th>
<th>Sites Exceeding AL/Number of Sites</th>
<th>Typical Sources of Constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lead (ppb)</strong></td>
<td>15</td>
<td>0.2</td>
<td>2016</td>
<td>0</td>
<td>0/31</td>
<td>Internal corrosion of household plumbing systems; erosion of natural deposits</td>
</tr>
<tr>
<td><strong>Copper (ppm)</strong></td>
<td>1.3</td>
<td>0.3</td>
<td>2016</td>
<td>0.37</td>
<td>0/31</td>
<td>Internal corrosion of household plumbing systems; erosion of natural deposits</td>
</tr>
</tbody>
</table>

**Notes:**

- MCL or [MRDL] = Maximum Contaminant Limit (mg/L)
- PHG, (MCLG) or [MRDLG] = Provisional Health Goal (mg/L)
- N/A = Not Applicable
- ND = Not Detected at or above the DDW Detection Limit for Purposes of Reporting
- NL = Notification Level; a health-based advisory level established by DDW for constituents in drinking water that lack maximum contaminant levels (MCLs)
- HA = USEPA Drinking Water Health Advisory
- pH = 2.8 – 7.0
- ND – 0.11 = Not Detected at or above the DDW Detection Limit for Purposes of Reporting
- HA = 4,000
- HA = 400
- HA = 1
- HA = 1,000
- HA = 5
- HA = 50
- HA = 500
- HA = 300
- HA = 800
- HA = 10
- HA = 4,000
- HA = 600

**Units:**

- ppm = Parts per million or milligrams per liter (mg/L)
- µg/L = Micrograms per liter
- ng/L = Nanograms per liter
- ppt = Parts per trillion or nanograms per liter (ng/L)
- ppt = Parts per billion or micrograms per liter (µg/L)
- pCi/L = Picocuries per liter (a measure of radioactivity)
IMPORTANT HEALTH INFORMATION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791). Additional guidance is available from the Centers for Disease Control (CDC) at https://www.cdc.gov/healthywater/drinking/drinking-water-faq.html

LEAD TESTING IN SCHOOLS

The State Water Resources Control Board launched its effort to encourage K–12 schools in California to have their drinking water tested for lead. Community water systems are now required to test for lead in drinking water at the schools in their service areas if sampling is requested by school officials in writing. Schools covered by the requirement include public, private, charter, magnet, and non-public K–12 schools. Preschools and day-care centers are not included.

The District takes lead exposure seriously and will comply with this new requirement and respond within the regulatory timeframe to any K–12 schools in our service area that request lead sampling. Parents who wish to inquire about lead testing of the drinking water at their child’s school should contact their local school district officials. More information about lead sampling in schools is available at http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/leadsamplinginschools.shtml

LEAD

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at http://www.epa.gov/safewater/lead.

Footnotes for table on previous page

1a Sampled within the distribution system; Compliance is based on locational running annual average (LRAA); Average amount listed is the highest LRAA for 2016.
1b Sampled within the distribution system; Compliance is based on quarterly running annual average (RAA).
2 Sampled immediately after treatment where treated.
3 DDW allows monitoring for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, although representative, are more than one year old.
4 Unregulated contaminant monitoring helps the USEPA and DDW to determine where certain contaminants occur and whether the contaminants need to be regulated. This section incudes the Unregulated Contaminant Monitoring Rule 3 assessment and subsequent monitoring results.
5 Sampled at all entry points to the distribution system and points within the distribution system.
6 Chlorate is an “unregulated” compound. The sole detection above the NL was determined by DDW not to be an NL exceedence based upon followup testing.
7 Sampled at all entry points to the distribution system.
8 1,2,3-Trichloropropane (TCP) is currently listed as an “unregulated” compound. TCP is found only in the District’s Country Club Well. The listed average is the average concentration in all sources tested for TCP, not the average in Country Club Well. The average in Country Club Well was 8.9 ppt. Some people who use water containing TCP in excess of the notification level over many years may have an increased risk of getting cancer, based on studies in laboratory animals.
9 The 20 ppm USEPA Health Advisory is for individuals on a 500 mg/day restricted sodium diet.
Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA’s Safe Drinking Water Hotline (1-800-426-4791).

The presence and level of constituents varies throughout the District. If you have questions, suggestions, or comments regarding this report or questions regarding the specific water quality for your neighborhood, please contact Carla James, the District’s Water Program Coordinator, at 831-475-8501 ext. 138.

The District’s annual Water Quality Report is electronically delivered. If you wish to obtain a print copy, please call the District Office at 831-475-8500. Owners and operators of multi-residential units such as apartments and condominium complexes should ensure that tenants receive this important information.

There is also a wealth of information on the internet about drinking water quality and water issues in general. In addition to the District’s website, soquelcreekwater.org, other reliable and trustworthy sites include:

- California State Water Resources Control Board, Division of Drinking Water (DDW) http://www.waterboards.ca.gov/drinking_water/programs/index.shtml
- U.S. Environmental Protection Agency (USEPA) http://water.epa.gov/drink/index.ccfm

GET INVOLVED IN DECISIONS THAT AFFECT YOUR DRINKING WATER

The District encourages public participation in its decision-making processes. The District is governed by a five-person, publicly elected Board of Directors. The Board meets the first and third Tuesday of each month at 6:00 pm. Check the District’s website soquelcreekwater.org for meeting locations.