

# STATE OF CALIFORNIA

## ANNUAL COMPLIANCE REPORT

# 2018



COVER PHOTO:

**Chino Creek West – 2016 Sanitary Survey of Desert Water Agency**

Chino Creek West is a surface water source that serves the Palm Springs Aerial Tramway at both the Valley and Mountain Tram Stations, owned and maintained by the San Jacinto Winter Park Authority. The source of the system is chlorinated surface water provided by Desert Water Agency under the surface water filtration avoidance requirements pursuant to the California Code of Regulations, Title 22, Section 64652.5.

*Photo Courtesy of Ms. Chun Huang, Associate Sanitary Engineer with the Riverside District Field Office Branch of the Division of Drinking Water*

# Message from the Drinking Water Program Manager

The Division of Drinking Water (DDW) is pleased to present the 2018 Annual Compliance Report, which summarizes the state of compliance of California's public water systems with the federal Safe Drinking Water Act (SDWA) as well as California's SDWA, for calendar year 2018.

How to get information on the compliance status of California public water systems:

*2018 Annual Compliance Report:* A copy of this report and the associated data tables will be available to the public by contacting Betsy Lichti at (916) 449-5577, or through the State Water Board website at:

[http://www.waterboards.ca.gov/drinking\\_water/programs/index.shtml](http://www.waterboards.ca.gov/drinking_water/programs/index.shtml)

*Human Right to Water Portal:* DDW maintains a public webpage on the compliance status of public water systems, as part of its implementation of the State Water Board's resolution on the human right to water.

[http://waterboards.ca.gov/water\\_issues/programs/hr2w/index.shtml](http://waterboards.ca.gov/water_issues/programs/hr2w/index.shtml)

*Drinking Water Watch:* DDW maintains a public webpage on the inventory of public water systems, including violations and enforcement actions, at:

<https://sdwis.waterboards.ca.gov/PDWW/>



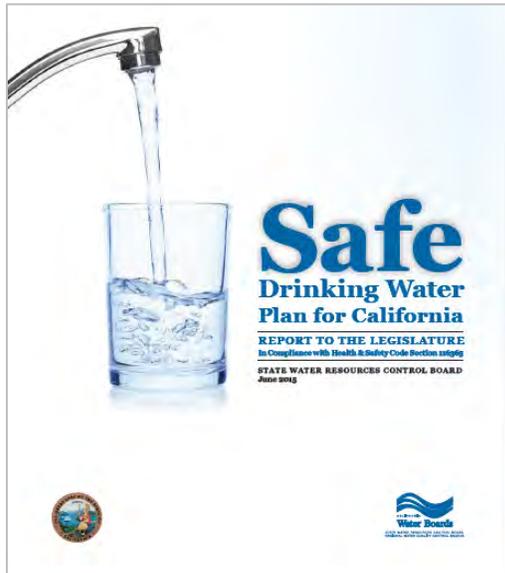
**Darrin Polhemus**

*Deputy Director, Division of Drinking Water  
State Water Resources Control Board*

The violations data for 2018 shows that 95% of public water systems, serving more than 88% of Californians, complied with maximum contaminant levels (MCLs) and treatment techniques (TT) contained in federal rules established under the SDWA.

Our records show that 366 public water systems (PWS), out of a total of 7,410 active public water systems, had one or more violations of an MCL or TT in 2018. Of these, 90% are smaller public water systems, such as community water systems having less than 500 service connections and noncommunity water systems. DDW takes appropriate progressive enforcement to ensure that

these public water systems are on a path to compliance with the SDWA.



The State Water Board, through programs such as the Drinking Water State Revolving Fund and funding from state bonds, helps to provide financing through loans or grants for planning or construction projects to address water quality problems. In July 2019, California established a Safe and Affordable Drinking Water Fund to help water systems, including PWS, provide an adequate and affordable supply of safe drinking water.

In 2016, DDW gained authority to mandate water system consolidation as a strategy to reduce the number of PWS that are unsustainable and are unable to provide safe drinking water. Sixteen PWS are currently in the process of mandatory consolidation, with five of these electing to voluntarily

consolidate. For more information about the status of consolidation projects, please visit our website [https://www.waterboards.ca.gov/drinking\\_water/programs/compliance/index.html](https://www.waterboards.ca.gov/drinking_water/programs/compliance/index.html)

DDW provides assistance and resources to PWS to help ensure that they maintain long-term sustainability and capacity to maintain compliance with drinking water laws and regulations. Information about DDW's technical, managerial, and financial capacity development program, including the FY 2020-2022 Capacity Development Strategy, is available at our website

[https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/TMF.html](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/TMF.html).

DDW is working on updating the Safe Drinking Water Plan for California, which provides the State Water Board's strategy for ensuring that all Californians have access to safe affordable drinking water. For more information about the Safe Drinking Water Plan as well as a copy of the 2015 Plan, please visit our website [https://www.waterboards.ca.gov/drinking\\_water/safedrinkingwaterplan/](https://www.waterboards.ca.gov/drinking_water/safedrinkingwaterplan/).

DDW continues to work with all public water systems to ensure that they achieve compliance with the SDWA and provide water that is pure, wholesome and potable to their customers.

## Executive Summary

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The State Water Resources Control Board (State Water Board) Division of Drinking Water (DDW) is the primacy agency responsible for the administration and enforcement of the federal Safe Drinking Water Act (SDWA) requirements in California. The State Water Board has adopted statutes and regulations to implement the requirements of the SDWA. The State Water Boards' regulatory responsibility over public water systems includes (1) issuance of operating permits, (2) conducting inspections and sanitary surveys, (3) monitoring for compliance with regulations, and (4) taking enforcement action to compel compliance when violations are identified.

Throughout the year and as part of DDW's regulatory oversight responsibilities, Drinking Water Program staff from DDW's 24 District offices and 30 County health departments (delegated by the State Water Board to undertake regulatory oversight on behalf of DDW) document and record violations incurred by public water systems. Enforcement actions are issued by the Drinking Water Program to address these violations. The data is compiled and submitted to the United States Environmental Protection Agency (USEPA) on a quarterly basis.

This report presents an accounting of the violations record for the calendar year 2018. USEPA requires states to issue this Annual Compliance Report by July 1<sup>st</sup> of each year and make the report available to the public. USEPA requires that the Annual Compliance Report summarize the compliance status for the following rules from the National Primary Drinking Water Regulations:

- Chemical (Phase II/V) Rule:
  - Inorganic contaminants (IOC)
  - Synthetic organics (SOC)
  - Volatile organics (VOC)
- Radionuclide Rule (RAD)
- Total Coliform Rules (TCR)
  - Total Coliform Rule (TCR)
  - Revised TCR (rTCR)
- Disinfectants and Disinfection By-Products Rule (DBPR)
  - Stage 1 DBPR
  - Stage 2 DBPR
- Surface Water Treatment Rules (SWTR)
  - Surface Water Treatment Rule
  - Filter Backwash Rule (FBR)
  - Interim Enhanced SWTR (IESWTR)
  - Long Term 1 Enhanced SWTR (LT1)
  - Long Term 2 Enhanced SWTR (LT2)
- Groundwater Rule (GWR)
- Lead and Copper Rule (LCR)
- Public Notification Rule (PN)
- Consumer Confidence Report Rule (CCR)
- Variances and exemptions (V/E)

The following types of violations are included in this report:

- ✓ Maximum contaminant level (MCL) violations
- ✓ Maximum residual disinfectant level (MRDL) violations
- ✓ Treatment technique requirement (TT) violations
- ✓ Significant monitoring and/or reporting requirements (M/R) violations
- ✓ Variances and exemption violations
- ✓ Recordkeeping violations
- ✓ Significant public notification requirement violations
- ✓ Significant consumer confidence report (CCR) notification violations

This report also presents an accounting of violations of state-regulated chemicals and other state SDWA requirements that are recorded by DDW; these are summarized separately in the report as required by USEPA guidelines. The discussion, figures and summaries provided herein refer to the National Primary Drinking Water Regulations unless stated otherwise.

In 2018, a total of 2,752 violations of the National Primary Drinking Water Regulations were incurred by public water systems. Of these violations, 1,300 were MCL/TT violations and 1,452 were M/R violations. Figure ES-1 summarizes the number of violations recorded in 2018 per rule.

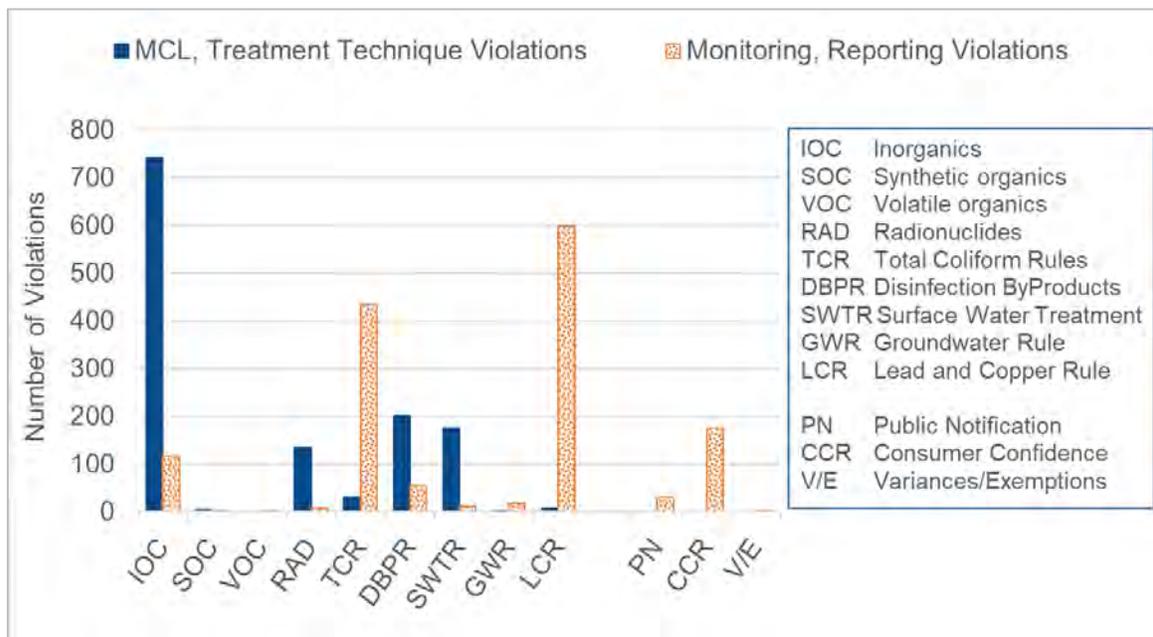
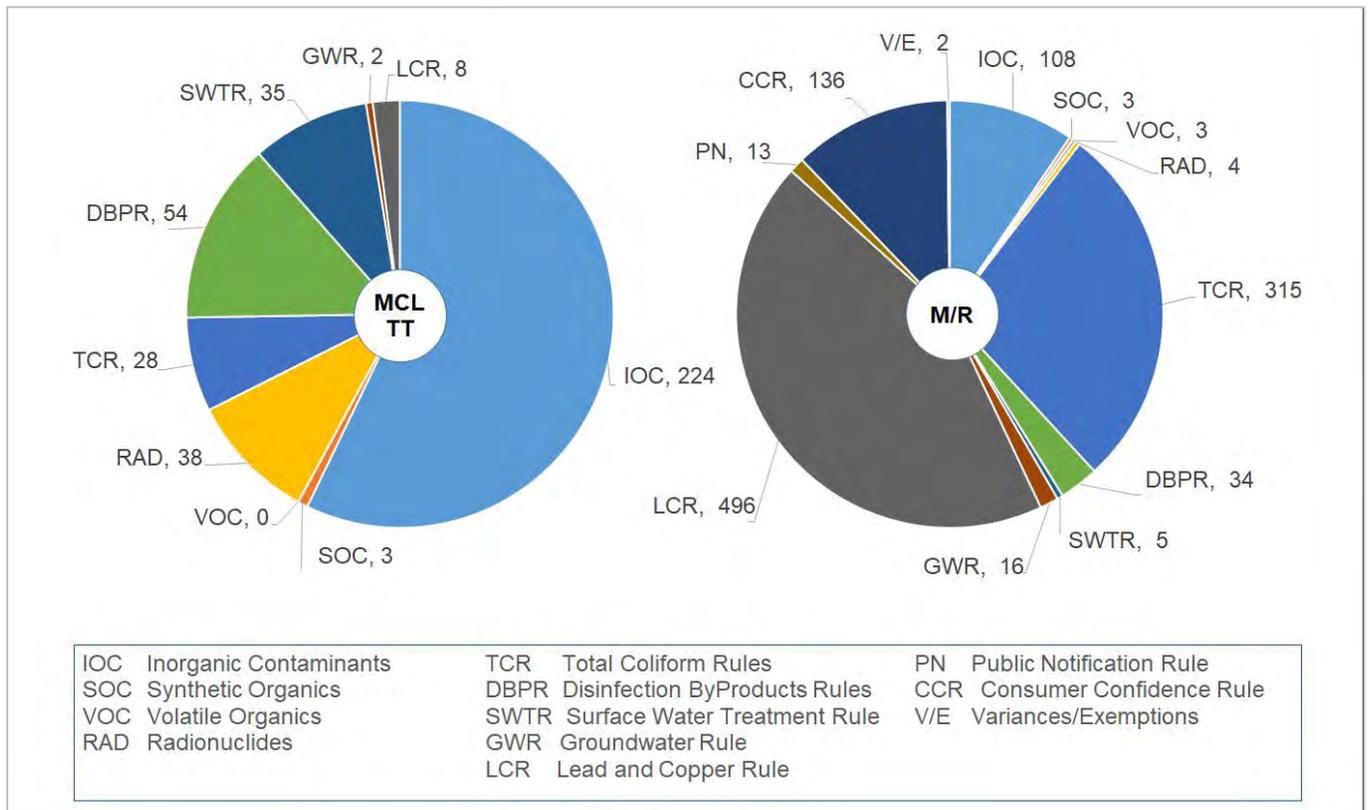


Figure ES-1 Violations Incurred by Public Water Systems in 2018

Inorganic contaminant MCL exceedances accounted for the largest number of violations. Nitrate and arsenic MCL violations were the major contributors to the high number of IOC MCL violations. Of the monitoring and reporting violations, more than 75% were due to noncompliance with the Lead and Copper Rule or the Revised Total Coliform Rule monitoring requirements.

PWS incurred the largest number of MCL/TT violations for inorganic contaminants, followed by violations of standards for DBPR, radionuclides, and SWTR. They incurred the largest number of monitoring/reporting violations for Lead and Copper Rule and the Total Coliform Rule.

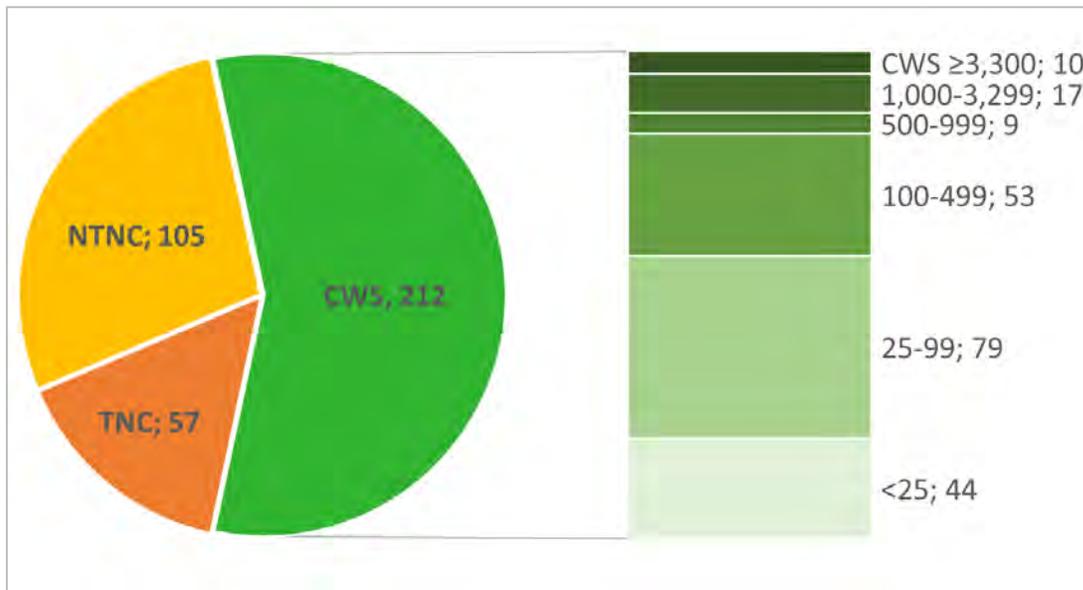
Figure ES-2 below summarizes the number of PWS that incurred violations of each rule in 2018. Please note that a PWS may have incurred violations of more than one rule.



**Figure ES-2** Number of public water systems with violations in 2018 of the MCL or treatment technique (left), and of the monitoring or reporting requirements (right)

Figure ES-3 shows the classification and sizes of PWS (as represented by the number of service connections) that incurred one or more MCL or TT violations in 2018. More than 90% of the MCL or TT violations were incurred by community water systems (CWS) that serve fewer than 500 service connections, nontransient noncommunity water systems (NTNC) such as schools, or transient noncommunity water systems (TNC) such as campgrounds. Of the MCL and TT violations incurred by CWS, 83% were CWS that serve less than 500 service connections.

CWS and NTNC that incurred at least one MCL or TT violation in 2018 each represented about 7% of the total number of active CWS and NTNC in the state, respectively. TNC that incurred at least one MCL or TT violation in 2018 represented about 2% of the active TNC in the state.



**Figure ES-3** Classification and size of public water systems with MCL or TT violations in 2018. CWS = Community Water System; TNC = Transient Noncommunity Water System; NTNC = Nontransient Noncommunity Water System. See Section 1.3 for definitions of these different types of public water systems.

Table ES-1 summarizes the number of MCL and TT violations of the federal SDWA that have been documented and reported for calendar year 2018 and compares the 2018 numbers with the previous year's numbers. An estimate of the

population served by PWS that failed an MCL or TT standard in 2018 is provided, based on the total estimated population-served reported by PWS. Please note that the population estimates of water systems is not intended to represent the number of people impacted by the violation since some violations may impact only a portion of a very large system.

**Table ES-1** Violations of Maximum Contaminant Levels (MCLs) or Treatment Techniques (TT), Comparison between 2017 and 2018

<b>Category</b>	<b>Year 2017 MCL/TT Violations</b>	<b>Year 2017 Estimated Population</b>	<b>Year 2018 MCL/TT Violations</b>	<b>Year 2018 Estimated Population</b>	<b>Change in Number of Violations</b>
Inorganic Contaminants	837	247,823	742	147,446	-95
Synthetic Organic Contaminants	0	0	5	3,613	+5
Volatile Organic Contaminants	1	500	0	0	-1
Radionuclide Rule	95	13,953	134	16,517	+39
Revised Total Coliform Rule	72	22,937	30	126,206	-42
Disinfection By-Products Rule	192	333,336	202	294,748	+10
Surface Water Treatment Rules	230	19,567	176	4,089,627(a)	-54
Groundwater Rule	2	10,455	3	257,561	+1
Lead and Copper Rule	12	12,744	8	10,331	-4
<b>Totals (b)</b>	<b>1,441</b>	<b>592,403</b>	<b>1,300</b>	<b>4,936,750</b>	

(a) The large increase in population is due to a single violation at a PWS which serves more than 4 million people. See the sidebar on page v for more details.

(b) The total estimated population is less than the sum of the populations for each violation category, since a PWS may have one or more violations in one or more violation category

The Los Angeles Department of Water and Power (LADWP) serves drinking water to more than 4 million people. On January 22, 2018, LADWP brought their surface water treatment plant back into service after the annual maintenance shutdown period. During startup, some of the partially treated water from the plant was inadvertently sent to the water distribution system over a 9-hour period. The surface water was provided ozone treatment, coagulation/flocculation, direct filtration and UV disinfection during this time, but unfortunately the water was not consistently and reliably provided chlorination treatment designed to provide 99.99% reduction of viruses as required by the SWTR. The failure to provide adequate disinfection resulted in a violation, and LADWP received a citation (enforcement action). LADWP provided public notification to customers affected, generally in the area of north and northwest San Fernando Valley in the City of Los Angeles. LADWP also reported the violation in its [2017 Drinking Water Quality Report](#).

Table ES-2 below summarizes the number of violations of the federal SDWA rules for other violation reporting categories for calendar year 2018, including violations of public notification and Consumer Confidence Report (CCR) requirements, the number of public water systems that incurred the violation, as well as a comparison to the previous year's numbers.

**Table ES-2 Other Violation Reporting Categories**

<b>Violation Category</b>	<b><u>Year 2017</u> Number of Violations</b>	<b><u>Year 2017</u> Number of PWS</b>	<b><u>Year 2018</u> Number of Violations</b>	<b><u>Year 2018</u> Number of PWS</b>	<b>Change in Number of Violations</b>
Public Notification Rule	33	14	30	13	-3
Consumer Confidence Report Notification	179	135	175	136	-4
Variances and Exemptions	6	5	2	2	-4

Table ES-3 below summarizes the number of MCL violations of California-specific regulated chemicals, and the estimated population served by the PWS incurring the violations. California initiated implementation of the MCL for 1,2,3-trichloropropane (123TCP) in 2018, and PWS began to conduct initial quarterly monitoring. The large increase in SOC MCL violations shown in Table ES-3 was due to implementation of the 123TCP state drinking water standard.

California’s Total Coliform Rule (TCR) regulations have not yet been updated to reflect the federal Revised Total Coliform Rule (rTCR), so the Drinking Water Program staff are tracking violations for both the rTCR and TCR. The summary of violations of the rTCR is presented in Table ES-1, and the violations of California’s TCR Total Coliform MCL (non-acute) is presented in Table ES-3 below. The number of TCR Total Coliform MCL violations for 2018 is similar to those incurred by PWS in previous years.

**Table ES-3** Violations of California-specific Maximum Contaminant Levels (MCL) and Treatment Techniques (TT)

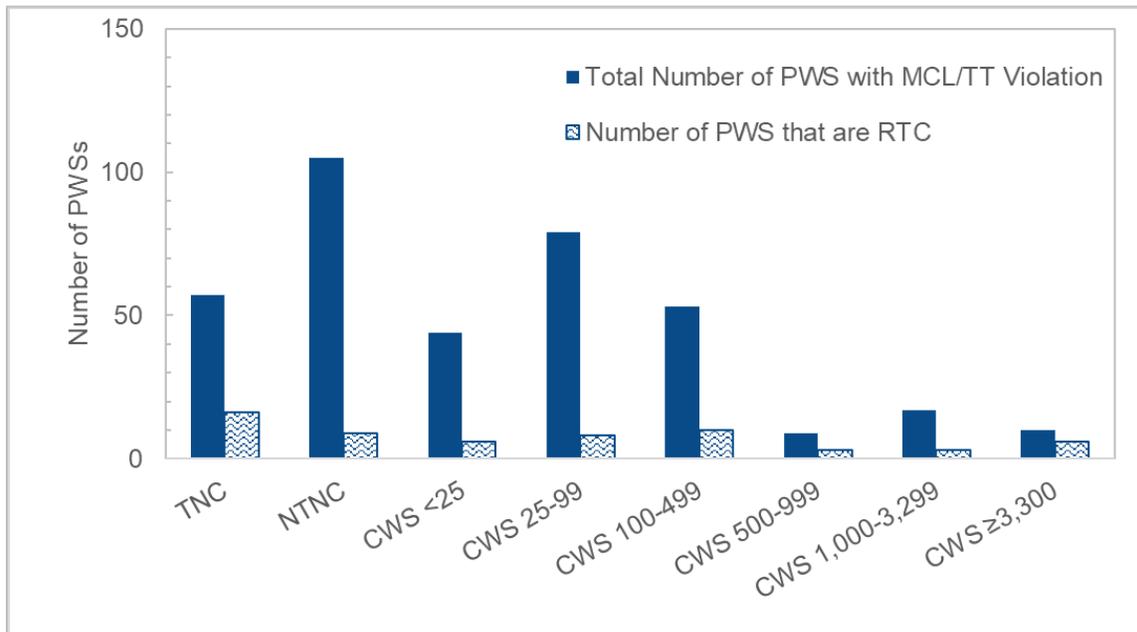
<b>MCL Violation Category</b>	<b>Year 2017 MCL &amp; TT Violations</b>	<b>Year 2017 Estimated Population</b>	<b>Year 2018 MCL &amp; TT Violations</b>	<b>Year 2018 Estimated Population</b>	<b>Change in Number of Violations</b>
Primary Inorganic Contaminants	83	69,899	10	231	-73
Synthetic Organic Contaminants (SOCs)	0	0	345 (b)	636,707	+345
Volatile Organic Contaminants (VOCs)	0	0	0	0	0
Secondary Standards	21	4,915	20	3,433	-1
CA Total Coliform Rule (TCR) – Total Coliform MCL	352	214,352	388	625,803	+36
<b>Totals (a)</b>	<b>457</b>	<b>284,112</b>	<b>763</b>	<b>1,108,029</b>	

(a) The total estimated population is less than the sum of the populations of each violation category, since a PWS may have violations in more than one category.

(b) Due to violations of 1,2,3-trichloropropane (123TCP) MCL. See Section 3.13.

In 2018, the Drinking Water Program issued approximately 2,800 enforcement actions to public water systems for failing to comply with either federal or state drinking water regulations. An enforcement action addresses one or more violations, and prescribes public notification requirements as necessary, corrective actions, and deadlines that the public water system must meet in order to be considered “returned to compliance” (RTC). Figure ES-4 shows the number of

public water systems that have returned to compliance for a federal rule for each water system category/size, compared with the number of public water systems that had incurred one or more MCL and TT violations in 2018. The systems that had an RTC during 2018 may have had the initial violation in 2018 or in prior years. Public water systems are required to provide routine (typically quarterly) public notification of MCL or TT violations that are on-going and are not resolved.



**Figure ES-4 Number of public water systems that have returned to compliance for an MCL/TT violation incurred in 2018. PWS are categorized by type and CWS size (number of service connections)**

Overall, 16% (down from 24% last year) of public water systems have returned to compliance for an MCL or TT violation incurred in 2018 or in prior years. DDW continues to monitor the compliance status of public water systems, working to identify and track public water systems that do not meet drinking water standards and provide technical assistance as well as take appropriate and effective enforcement measures and other addressing actions, to ensure that these public water systems are working towards a path of compliance with the SDWA.

This report also includes data on violations of the California SDWA for calendar year 2018, which includes the regulation of several chemicals such as perchlorate and 1,2,3-trichloropropane, as well as other state requirements such as certification of distribution system operators, which are not included in federal regulations. Violations of state drinking water standards are discussed and accounted for separately in Section 3.13.

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## Chapter 1. Overview of the Drinking Water Program

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### 1.1. Federal Program

The USEPA established the Public Water System Supervision (PWSS) Program under the authority of the 1974 Safe Drinking Water Act (SDWA). Under the SDWA and the 1986 Amendments, USEPA sets national limits on contaminant levels in drinking water to ensure that the water is safe for human consumption. These limits are known as Maximum Contaminant Levels (MCLs) and Maximum Residual Disinfectant Levels (MRDLs). For some regulations, USEPA establishes Treatment Techniques (TT) in lieu of an MCL to control unacceptable levels of contaminants in water. The USEPA also regulates how often public water systems (PWS) monitor their water for contaminants and report the monitoring results to the states or USEPA. Generally, the larger the population served by a water system, the more extensive and frequent are the monitoring and reporting (M/R) requirements. In addition, USEPA requires community water systems to monitor for unregulated contaminants to provide data for future regulatory development. Finally, USEPA requires PWS to notify their consumers when they have violated these regulations. The 1996 Amendments to the SDWA among other things require consumer notification to include a clear and understandable explanation of the nature of the violation, its potential adverse health effects, steps that the PWS is undertaking to correct the violation and the possibility of alternative water supplies during the violation.



The SDWA allows states, tribes and territories to seek USEPA approval to administer their own PWSS Programs. The authority to run a PWSS Program is called **primacy**. For a state to receive primacy, USEPA must determine that the state meets certain requirements laid out in the SDWA and the federal regulations, including the adoption of drinking water regulations that are at least as stringent as the federal regulations and a demonstration that they can enforce the program requirements.

## 1.2. California Program

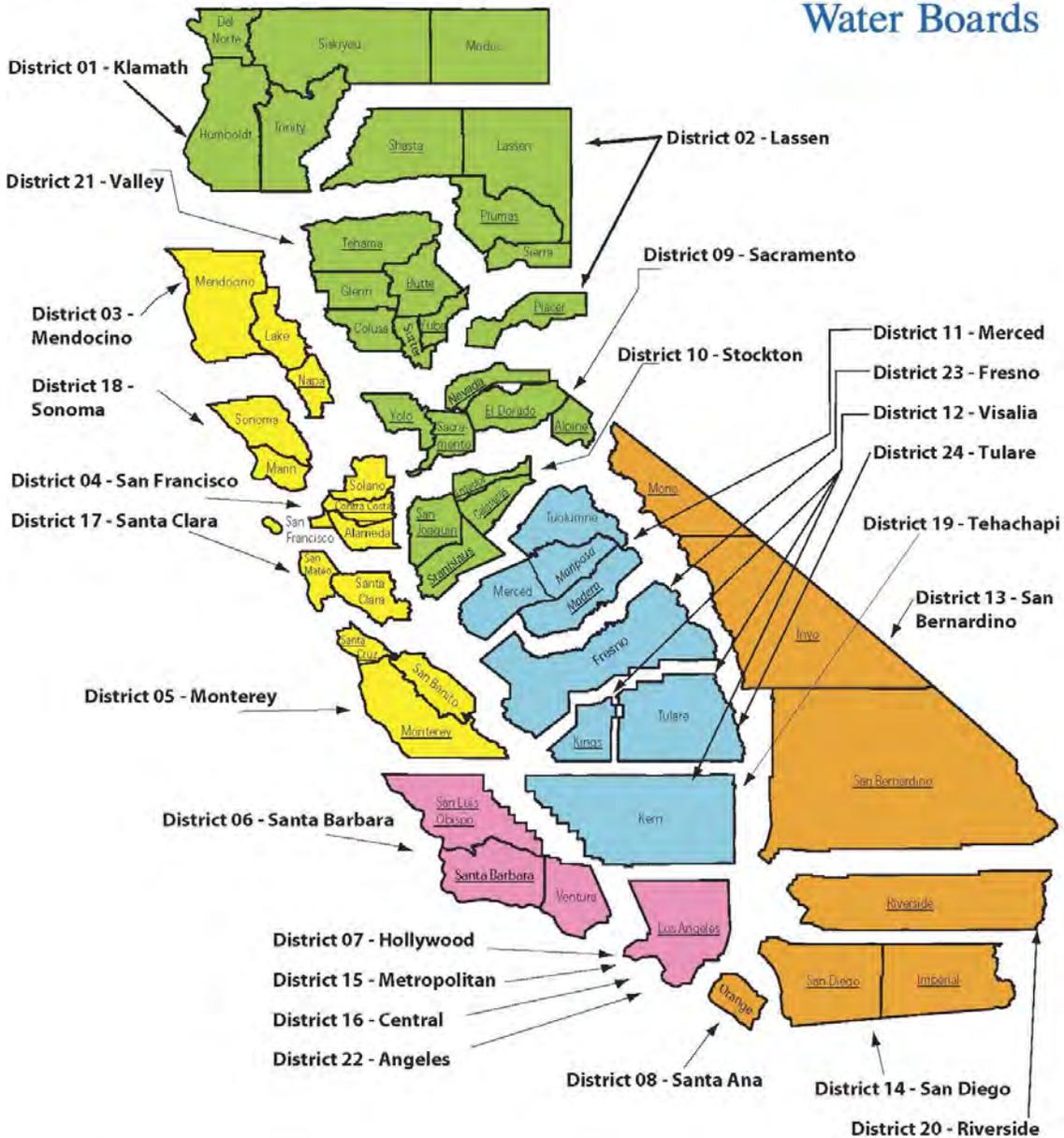
California's Drinking Water Program was created in 1915, when the California Bureau of Sanitary Engineering was established by the California State Board of Health. The bureau's primary duty at that time was to prevent and eliminate water-borne diseases.

Two years after the 1974 federal SDWA was passed, California adopted its own Safe Drinking Water Act. The state's SDWA has two main goals: to continue the state's Drinking Water Program, and to be delegated primacy by USEPA with authority for enforcement of the federal SDWA. California was first granted primacy for implementation of the federal SDWA on June 2, 1978, by USEPA.

The Drinking Water Program was transferred in its entirety from the California Department of Public Health to the State Water Resources Control Board (State Water Board) on July 1, 2014. The State Water Board Division of Drinking Water (DDW) oversees implementation of the SDWA over public water systems within California. The State Water Board has further delegated regulatory authority through a delegation agreement with County Environmental Health Departments. Currently, 30 counties in California have retained primacy as a Local Primacy Agency (LPA) under delegation agreements issued and signed in 2014 and amended in 2017. These 30 LPAs oversee SDWA compliance of small PWS that serve fewer than 200 service connections within their counties.

As shown in Figure 1, DDW has 24 District Offices under the Field Operations Branch that cover specific areas for enforcement of public water systems.

**State Water Resources Control Board**  
Division of Drinking Water



**Figure 1** Division of Drinking Water (DDW) Field Operations Branch District Offices. Counties that are Local Primacy Agencies are underlined

### 1.3. Public Water Systems

A public water system (PWS) is defined as a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections, or regularly serves at least 25 individuals daily for at least 60 days out of the year.

PWS are divided into three principle classifications: community water systems (CWS), nontransient noncommunity water systems (NTNC), and transient noncommunity water systems (TNC). Wholesale water systems are also regulated as public water systems although they may not serve water directly to individual customers or service connections.

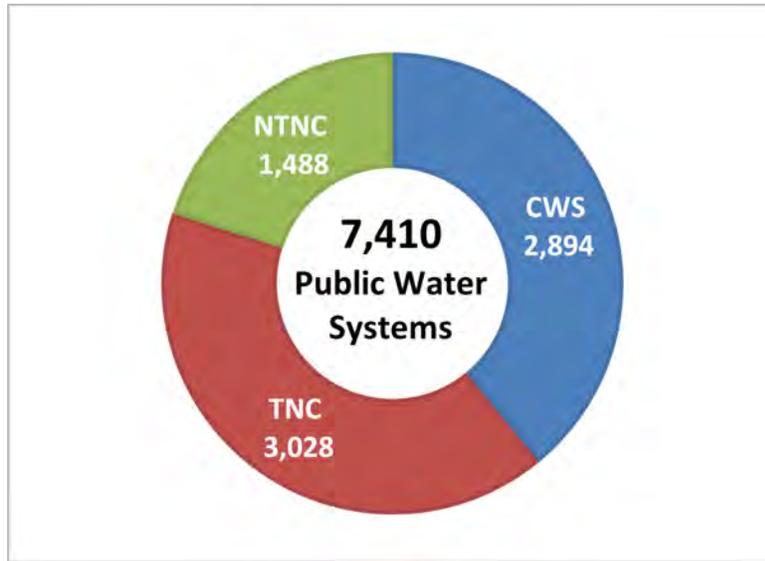
**Community water systems** serve cities, towns and other areas with at least 15 service connections or 25 yearlong residents. Examples include water districts, cities, mutual water companies, mobile home parks and farm labor housing.

**Nontransient noncommunity systems** are systems that provide water to the same non-residential users daily for at least 180 days out of the year but not to at least 25 year-long residents. Examples include day cares, schools, and places of employment.

**Transient noncommunity water systems** are systems that provide water for a population that is transient in nature, serving 25 or more people per day for at least 60 days per year. Examples include campgrounds, parks, ski resorts, roadside rest areas, churches, gas stations and motels.

A **wholesale water system** means an entity that supplies water to one or more public water systems for resale. These wholesale water systems are regulated as community water systems.

DDW and LPAs together regulate a total of 7,410 PWS in California. LPAs are responsible for regulatory oversight of approximately 3,448 small PWS in 30 Counties. This regulatory responsibility includes tasks such as issuance of operating permits, conducting sanitary surveys, monitoring for compliance with regulations, and taking enforcement actions to compel compliance when violations are identified, and reporting on those actions taken.



**Figure 2** Number of public water systems by system classification (as of June 2019)

Figure 2 shows the number of public water systems in each of the classifications described. Community water systems are further classified by size. Regulations sometimes specify different requirements, such as monitoring requirements, for different sizes and types of water systems.

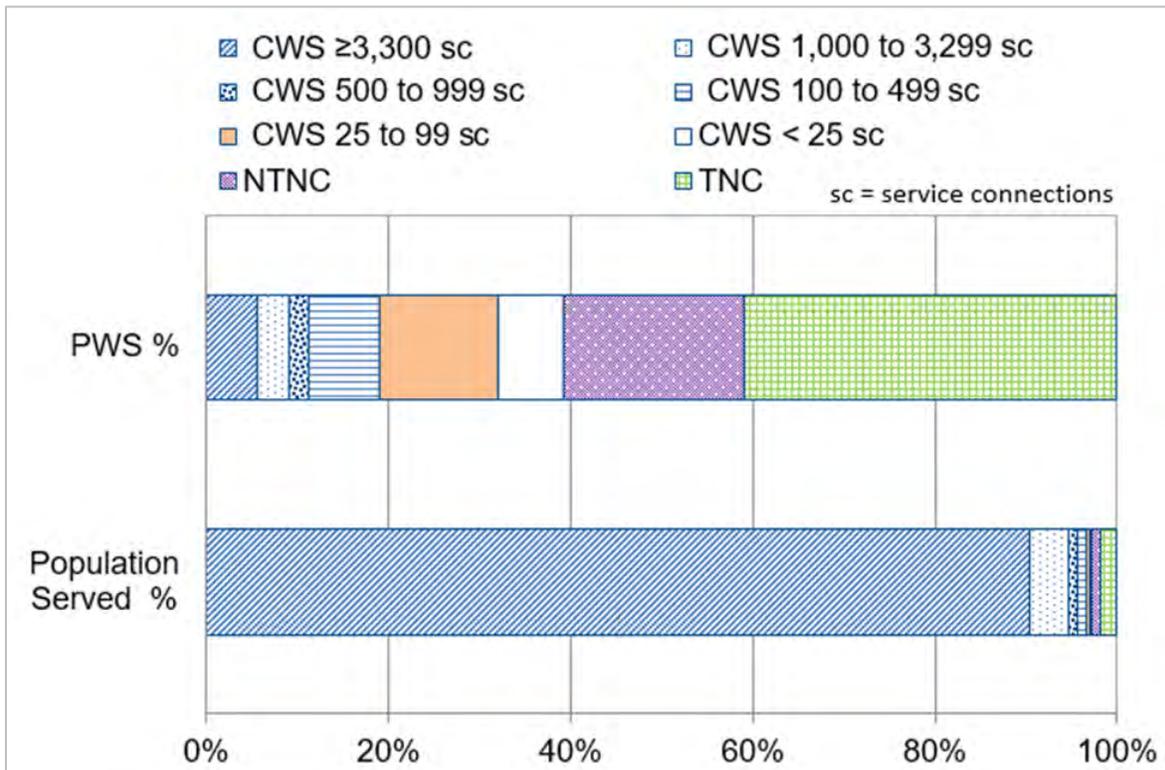
Table 1 below shows how many water systems are in each size range listed, categorized by the number of connections served by the water system, and the total population that is served by water systems of that size range. Population figures are based on information submitted by public water systems. Public water systems use a variety of methods to estimate the population served that are typically not derived from census counts.

		
<p><b>Community Water Systems (CWS)</b></p> <p>Provide water to the same population year-round. Most people—more than 300 million—in the US get their water from a CWS.</p>	<p><b>Non-transient Non-community Water Systems (NTNC)</b></p> <p>Provide water to the same people at least six months a year, but not all year. For example, NTNCs may serve schools or businesses that have their own water systems.</p>	<p><b>Transient Non-community Water Systems (TNC)</b></p> <p>Provide water to areas where people don't stay for very long—for example, campgrounds.</p>

**Table 1** Number of Community Water Systems Statewide (as of June 2019)

Number of Service Connections	Typical Population Served	Number of Water Systems	Total of Population Served
3,300 or more	10,000 or more	409	38,275,735
1,000 to 3,299	3,000 to 10,000	264	1,755,467
500 to 999	1,500 to 3,000	145	425,059
100 to 499	300 to 1,500	594	461,832
25 to 99	75 to 300	946	179,950
Fewer than 25	25 to 75	486	39,639
Wholesale Water Systems		50	
<b>Total number of systems</b>		<b>2,894</b>	

Figure 3 below shows that while community water systems serving 3,300 or more service connections make up about 5% of the total number of PWS, they provide water to 90% of the population served by PWS.

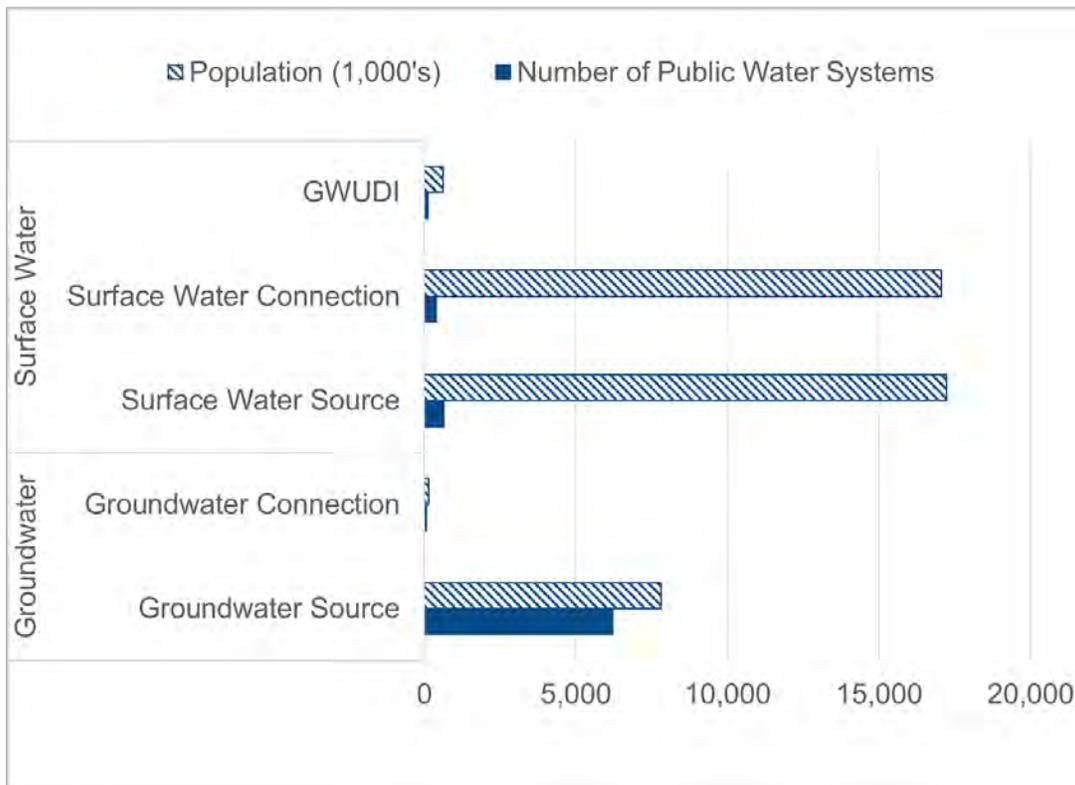


**Figure 3** Categories of public water systems by size (number of service connections) and population served

Community water systems with less than 500 service connections make up 28% of the total number of PWS and provide water to 1.6% of the population served by PWS. Noncommunity water systems (transient and nontransient combined) account for 61% of the total number of PWS as shown but serve less than 3% of the population served by PWS.

### 1.4. Sources of Drinking Water

Figure 4 shows the primary types of water sources that public water systems use to supply drinking water to their customers. Some regulations are applied differently for surface water and groundwater sources, and there are specific regulations in place that pertain to the treatment of surface water.



**Figure 4** Primary sources of drinking water used by public water systems

Most public water systems in California use groundwater as their primary source of supply, but those that use surface water serve most of the population. Public water systems that use both groundwater sources and surface water sources are categorized as surface water systems by convention. GWUDI sources are groundwater under the direct influence of surface water and are categorized as

surface water per regulations. Many public water systems do not operate their own sources and rely on interconnections with neighboring public water systems to supply potable drinking water to their customers and are classified as consecutive systems with a source type matching the wholesale provider. Although about 85% of public water systems use only groundwater as their primary source of water, these water systems serve less than 20% of the population. Fifteen percent of public water systems use surface water sources, and these sources supply 80% of the population.

### 1.5. Safe Drinking Water Act

Under the 1974 federal SDWA and subsequent reauthorizations in 1986 and 1996, USEPA sets national limits on contaminant levels in drinking water for human consumption to protect the health of consumers. These limits are known as maximum contaminant levels (MCL) and maximum residual disinfectant levels (MRDL). For some regulations, treatment techniques (TT) or action levels (AL) have been established in lieu of an MCL as a means to control levels of specific contaminants in drinking water. Water systems are also regulated as to the frequency of monitoring and the reporting (M/R) of water quality or rule compliance. Systems can incur a violation for failure to collect required samples during a monitoring period (monitoring violations) or failure to report sample results or rule compliance in the required manner (reporting violations).

The SDWA requires PWS to notify their consumers when a drinking water standard has been violated, including MCL, TT, AL and M/R requirements. This notification is required to include:

- A clear and understandable explanation of the nature of the violation
- The potential adverse health effects from the violation
- The steps that the water system is undertaking to correct the violation
- The possible use of alternative water supplies available during the violation

There are three basic types of violations that a water system can incur:

- Violation of a Maximum Contaminant Level (MCL): Primary drinking water standards have been adopted by the State Water Board for contaminants that may be found in drinking water supplies in California. These limits are known as MCLs and are necessary to protect the public from acute and chronic health risks associated with consuming water containing these contaminants.

- Violation of a Treatment Technique (TT): Treatment techniques and performance standards have been adopted as a means to provide safe drinking water in instances where adoption of a specific MCL may be impractical or impossible. Treatment techniques are a proven means to reduce the risk from various contaminants by closely controlling the treatment processes.
- Violation of a Monitoring and/or Reporting Requirement (M/R): A water system is required to monitor and verify that the levels of contaminants present in the drinking water supplies do not exceed an MCL. A monitoring violation occurs when a water system fails to have its water tested as required within a compliance period. A reporting violation also occurs when a water system fails to report test results in a timely fashion to the regulatory agency or fails to provide certification that mandated information was provided to the public, such as through the issuance of a public notice or the annual Consumer Confidence Report. A water system that fails to perform required monitoring for a group of chemicals (such as synthetic organic chemicals or volatile organic chemicals) would incur a violation of Monitoring and Reporting Requirements for each of the individual chemicals within this group.

## 1.6. Annual Compliance Report

Section 1414(c)(3) of the federal Safe Drinking Water Act requires states to provide USEPA and the public with an annual report of violations of the federally adopted primary drinking water standards. This report provides the numbers of violations in each of six categories: MCLs, MRDLs, treatment techniques, variances and exemptions, significant monitoring and/or reporting violations, and significant public or consumer notification violations. Significant monitoring and/or reporting violations occur when no samples are taken, or no results are reported during a compliance period. A significant public notification or CCR notification violation occurs when a public water system completely fails to provide the required notification to its customers or to the public.

California adopted more stringent MCLs than the federally adopted primary drinking water standards for several contaminants, summarized in Table 2. Reported MCL violations for contaminants listed in this table are violations of the more stringent California standards.

**Table 2** Regulated Contaminants Where California MCLs Are More Stringent Than Federal MCLs

	<i>CA MCL</i>	<i>Federal MCL</i>	<i>Units</i>
<i>Inorganic Contaminants:</i>			
• Barium	1	2	mg/L
• Chromium	50	100	ug/L
• Cyanide	150	200	ug/L
• Fluoride	2	4	mg/L
<i>Synthetic Organic Contaminants</i>			
• Atrazine	1	3	ug/L
• Carbofuran	18	40	ug/L
• Chlordane	0.1	2	ug/L
• Di (2-ethylhexyl) phthalate	4	6	ug/L
• Heptachlor	0.01	0.4	ug/L
• Heptachlor Epoxide	0.01	0.2	ug/L
• Methoxychlor	30	40	ug/L
• Oxamyl	50	200	ug/L
<i>Volatile Organic Contaminants</i>			
• Benzene	1	5	ug/L
• Carbon Tetrachloride	0.5	5	ug/L
• 1,4-Dichlorobenzene	5	75	ug/L
• 1,2-Dichloroethane	0.5	5	ug/L
• 1,1-Dichloroethylene	6	7	ug/L
• cis-1,2-Dichloroethylene	6	70	ug/L
• trans-1,2-Dichloroethylene	10	100	ug/L
• Ethylbenzene	300	700	ug/L
• Monochlorobenzene	70	100	ug/L
• Toluene	150	1000	ug/L
• 1,1,2,2-Tetrachloroethane	1	100	ug/L
• 1,2,4 Trichlorobenzene	5	70	ug/L
• Vinyl Chloride	0.5	2	ug/L
• Xylenes	1,750	10,000	ug/L

This report does not address private domestic wells serving individual homes and facilities that are not public water systems, including state small water systems (water systems having between 5 and 14 service connections) that are regulated under the California SDWA.

## 1.7. Data Presented in This Report

This year, DDW is pulling the data presented in this Annual Compliance Report directly from the State's database of record, the Safe Drinking Water Information System (SDWIS-State), which manages the inventory and compliance data required to support California's Drinking Water Program and reporting to USEPA. In past years, DDW used data downloaded from USEPA (SDWIS/FED) that in turn was previously uploaded by DDW to USEPA. Because of the complex data handling process between DDW and USEPA, DDW has found inaccuracies in the information retrieved from SDWIS/FED. Additionally, recent increases in staffing of DDW's Data Management Unit allowed for improved technical support for reporting and data cleanup activities. While DDW continues efforts to improve the quality of the data reported to USEPA to ensure data extractions from USEPA provide accurate and useful information, DDW has determined that data retrieved from SDWIS-State is the most accurate data set to use as the basis of this and future Annual Compliance Reports.

DDW will continue to upload data each quarter from SDWIS-State to USEPA. The data submitted include, but are not limited to, PWS inventory information; information on MCL, MRDL, monitoring and reporting, and treatment technique violations for regulated contaminants; violations concerning public and consumer notification; information on enforcement activities related to these violations; and data associated with the Lead and Copper Rule. The USEPA Regional offices also report federal enforcement actions taken against state-regulated public water systems.

The 2018 Annual Compliance Report lists violations by the following categories:

1. Inorganic Contaminants (IOC)
2. Synthetic Organic Contaminants (SOC)
3. Volatile Organic Contaminants (VOC)
4. Radionuclide Contaminants (RAD)
5. Revised Total Coliform Rule (rTCR)
6. Disinfectants and Disinfection By-Products Rule (DBPR), including Stage 1 DBPR and Stage 2 DBPR
7. Surface Water Treatment Rule (SWTR), including the Filter Backwash Rule, Interim Enhanced SWTR, Long Term 1 Enhanced SWTR, and Long Term 2 Enhanced SWTR
8. Groundwater Rule (GWR)

- 9. Lead and Copper Rule (LCR)
- 10. Public Notification Rule (PN)
- 11. Consumer Confidence Report Rule (CCR)
- 12. Variances and exemptions (V/E)

### 1.8. California-Specific Drinking Water Standards

This report provides a separate summary and accounting of violations of state-regulated contaminants that are not federally regulated. A list of these California-specific regulated contaminants is presented in Table 3. Discussion of California-specific violations is provided in Section 3.13.

**Table 3** Contaminants Additionally Regulated Under the California SDWA

- *Inorganic Contaminants:*
  - Perchlorate
  - Aluminum
  - Nickel
- *Synthetic Organic Contaminants*
  - Bentazon
  - Molinate
  - Thiobencarb
  - 1,2,3-Trichloropropane
- *Volatile Organic Contaminants*
  - Methyl tert-butyl ether (MTBE)
  - 1,1-Dichloroethane
  - 1,3-Dichloropropene
  - 1,1,2,2-Tetrachloroethane
  - Trichlorofluoromethane
  - 1,1,2-Trichloro-1,2,2-trifluoroethane

Additionally, DDW maintains violation records of California-specific drinking water standards, including the following:

1. CA TCR - California's TCR regulations are slightly different than the federal TCR regulations, such as requirements for weekly coliform monitoring. Additionally, the state TCR regulations have not yet been updated to reflect the federal Revised Total Coliform Rule (rTCR), so the Drinking Water Program staff is tracking violations for both the rTCR and state TCR.

2. Secondary Standards - California regulates the contaminants or water quality constituents in the following table for aesthetic effects, including taste, odor, and appearance. All CWS must monitor for these contaminants on a regular basis to determine compliance with Secondary MCLs, which are also called “consumer acceptance contaminant levels” (or “consumer acceptance contaminant level ranges” for certain constituents).

*Contaminants with Secondary MCLs:*

- |                                  |                          |
|----------------------------------|--------------------------|
| • Aluminum                       | • Silver                 |
| • Color                          | • Thiobencarb            |
| • Copper                         | • Turbidity              |
| • Foaming Agents (MBAS)          | • Zinc                   |
| • Iron                           | • Total Dissolved Solids |
| • Manganese                      | • Specific Conductance   |
| • Methyl-tert-butyl ether (MTBE) | • Chloride               |
| • Odor                           | • Sulfate                |

3. The Drinking Water Program collects violation information for the following state requirements:
  - Operator Certification – failure of a PWS to have an operator certified by the state at the appropriate certification level.
  - Waterworks Standards – failure to comply with the California Waterworks Standards
  - Permit – operating a water system without a permit, or violation of a permit provision
  - Annual Report – failure to submit an annual report to the Drinking Water Program
  - Cross-Connection Control – failure to comply with the Cross-Connection Control Regulations
  - Treatment Technique – failure to provide treatment as specified in the operating permit
  - Regulatory Reporting – failure to submit a compliance report to the Drinking Water Program
  - Lead Service Line Inventory – failure to comply with the requirements of California Health and Safety code, Section 116885

## Chapter 2. Review of 2018 Violation Data

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Public water systems must conduct monitoring on a routine basis for regulated contaminants and to satisfy treatment technique requirements to document that the water provided meets the drinking water standards. PWS must submit the data and compliance information to DDW and LPAs as the results are received and must summarize and report the compliance status on a regular basis as prescribed by the regulations. DDW and LPAs track the violations incurred by PWS in DDW's SDWIS-State database. A summary of the major violations described below are summarized in this section. Detailed tables of violations are included in the Appendix of the report.

- Maximum contaminant level (MCL) violations
- Maximum residual disinfectant level (MRDL) violations
- Treatment technique requirement (TT) violations
- Significant monitoring and/or reporting requirements (M/R) violations
- Variances and exemptions violations
- Recordkeeping violations
- Significant public notification requirement violations
- Significant consumer confidence report (CCR) notification requirement violations.

### 2.1. Overview of Violations for Calendar Year 2018

In 2018, 2,752 violations were incurred by public water systems, with 1,300 violations for failing to meet an MCL or TT and 1,452 violations for failing to meet a monitoring and/or reporting (M/R) requirement. Table 4 shows the number of violations by category for MCL/TT and M/R requirements. The highest number of MCL/TT violations incurred in 2018 is for violation of an inorganic contaminant MCL (712 violations), followed by violation of a DBPR requirement, closely tied with violation of a SWTR requirement. The high number of MCL violations for inorganic contaminants were primarily due to nitrate and arsenic. The highest number of M/R violations were for the Revised Total Coliform Rule and for the Lead and Copper Rule.

**Table 4** Number of Violations by Rule Category for Maximum Contaminant Levels / Treatment Techniques (MCL/TT) and Monitoring / Reporting Requirements (M/R)

No	Category	<u>2016</u> MCL/TT	<u>2016</u> M/R	<u>2017</u> MCL/TT	<u>2017</u> M/R	<u>2018</u> MCL/TT	<u>2018</u> M/R
1	Inorganic Contaminants	756	146	837	110	742	116
2	Synthetic Organic Contaminants	3	64	0	60	5	3 (b)
3	Volatile Organic Contaminants	3	47	1	21	0	3 (b)
4	Radionuclide Contaminants	77	10	95	10	134	7
5	Revised Total Coliform Rule (a)	522	568	72	432	30	434
6	Disinfection By-Products Rule	149	62	192	26	202	54
7	Surface Water Treatment Rules	253	16	230	8	176	11
8	Groundwater Rule	1	30	2	41	3	18
9	Lead and Copper Rule	19	541	12	432	8	599
10	Public Notification Rule	---	29	---	33	---	30
11	Consumer Confidence Report Rule	---	361	---	179	---	175
12	Variances and Exemptions	---	---	---	6	---	2

- (a) 2016 numbers report violations of the Total Coliform Rule. Effective in 2017, the federal Revised Total Coliform Rule changed what constituted an MCL violation, hence resulting in a reduction of MCL/TT violations starting in 2017.
- (b) Each M/R violation in this category can represent more than one chemical. There are 33 SOCs in the SOC category, and 27 VOCs in the VOC category

In 2018, about 1,545 violations of California-specific drinking water standards were incurred by public water systems, with 763 violations for failing to meet an MCL or TT, 587 violations for failing to meet a monitoring or reporting requirement, and 195

violations of other California SDWA requirements that are currently being tracked in SDWIS-State. Table 5 shows the number of violations by category for MCL/TT, M/R, and other requirements. The highest number of MCL/TT violations incurred in 2018 were for violations of the MCL for 1,2,3 trichloropropane (123TCP), followed by the TCR. The violations of rTCR is presented in Table 4, and the violations of California's TCR is presented in Table 5 below. The number of TCR violations for 2018 is similar to those incurred by public water systems in previous years.

**Table 5** Number of California-specific violations by category for MCLs/TTs, M/R and other requirements

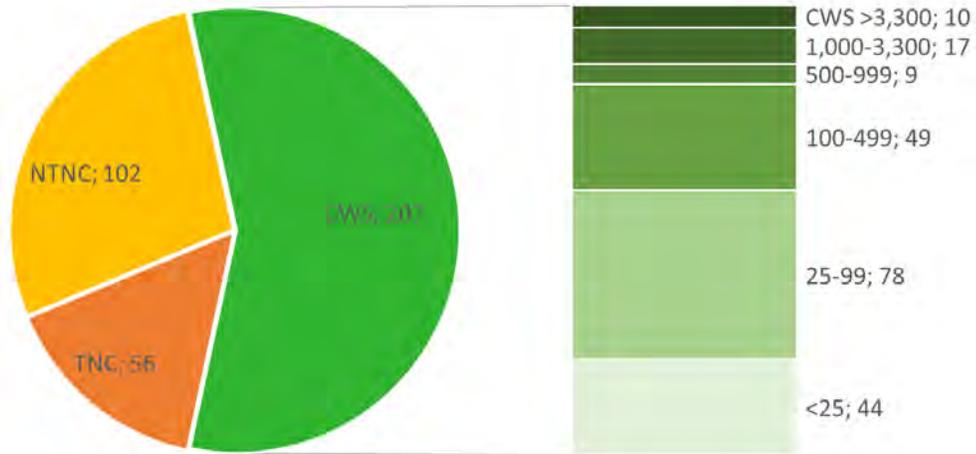
No	Category	MCL/TT	M/R	Other
1	Primary Inorganic Contaminants & TT	10	9	---
2	Synthetic Organic Contaminants (SOCs)	345	501	---
3	Volatile Organic Contaminants (VOCs)	0	0	---
4	Secondary Standards	20	7	---
5	CA Total Coliform Rule (TCR)	388	70	---
6	Operator Certification - Failure to have an operator at the appropriate certification level	---	---	23
7	Waterworks Standards - Failure to comply with a Waterworks Standard	---	---	27
8	Permits - Violation of a permit provision	---	---	69
9	Permits - Operating without a permit	---	---	10
10	Annual Report - Failure to submit an Annual Report to DDW	---	---	35
11	Cross-Connection Control	---	---	3
12	Treatment Technique	---	---	11
13	Regulatory Reporting	---	---	2
14	Lead Service Line Inventory	---	---	15

## 2.2. Overview of Public Water System Compliance for Calendar Year 2018

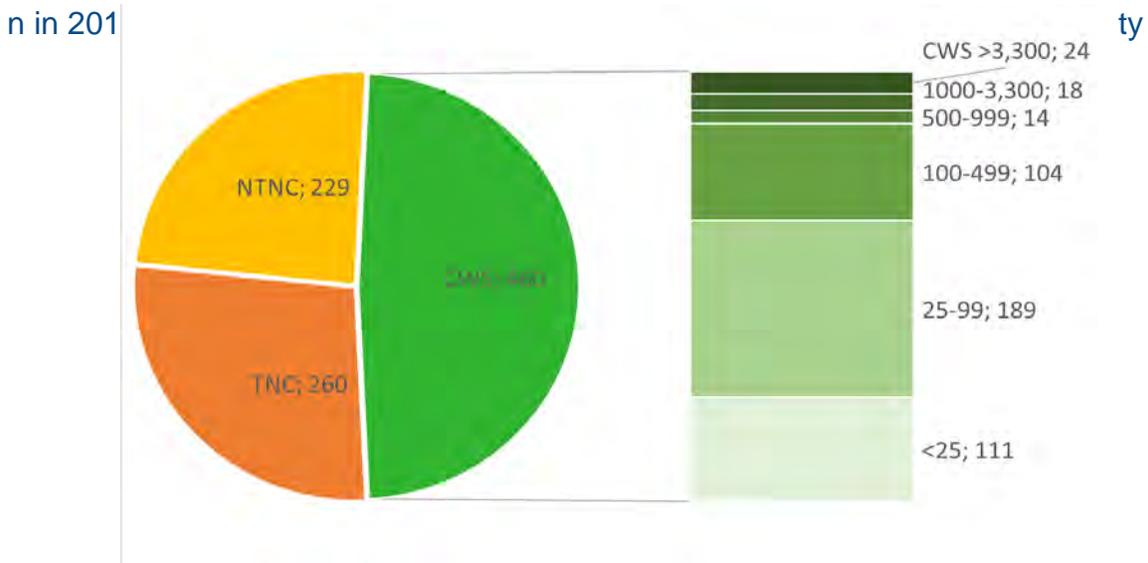
In 2018, 1,271 public water systems violated at least one drinking water standard described in Section 1.7, with 374 public water systems violating one or more MCL/TTs, 1003 public water systems violating one or more M/R requirements, and 106 public water systems violating both MCL/TTs and M/R requirements.

Figure 5 shows that more than 90% of the MCL or TT violations were incurred by NTNC, TNC, and CWS serving less than 500 service connections. More than half of the public water systems (207) that incurred an MCL or TT violation in 2018 were CWS. This represents about 7% of the total number of active CWS in the state. A breakdown by size of the CWS, categorized by the number of service connections served by the CWS (greater than 3,300 service connections, between 1000 and 3,300 service connections, etc.), is shown in the bar graph, along with the number of CWS in the size range with one or more violations. 102 NTNC and 56 TNC public water systems, representing about 3% and 4% of the total number of NTNC and TNC public water systems, respectively, also incurred one or more MCL and TT violations in 2018.

A similar trend is seen for the public water systems that incurred monitoring and reporting violations in 2018, as shown in Figure 6.



**Figure 5** Number of PWS with one or more MCL or TT Violations in 2018



**Figure 6** Number of PWS with one or more monitoring and reporting violations in 2018

Table 6 summarizes the number and population of water systems with violations of maximum contaminant levels, maximum residual disinfectant levels and treatment techniques for the past three years. For 2017, the large reduction in the number of PWS incurring MCL violations of the federal Total Coliform Rule (TCR) is due to the implementation of the federal Revised Total Coliform Rule (rTCR), which changed how violations are accounted for federal reporting. As noted previously, California is still tracking compliance with the TCR until it adopts state regulations for the rTCR.

Under the TCR, an exceedance of the Total Coliform MCL is a violation. Under rTCR, a “corrective action” process must be followed if a Total Coliform MCL is exceeded; and failure to complete the corrective action is a violation, not simply exceeding the Total Coliform MCL.

**Table 6** Number and Population of Water Systems with Violations of Maximum Contaminant Level (MCL), Maximum Residual Disinfection Level (MRDL), and Treatment Technique (TT)

No	Category	<u>2016</u> # PWS	<u>2016</u> Population	<u>2017</u> # PWS	<u>2017</u> Population	<u>2018</u> # PWS	<u>2018</u> Population
1	Inorganic Contaminants	264	138,830	275	247,823	224	147,446
2	Synthetic Organic Contaminants	2	120	0	0	3 (c)	3,613
3	Volatile Organic Contaminants	1	200	1	500	0	0
4	Radionuclide Contaminants	28	11,418	31	13,953	38	16,517
5	Total Coliform Rule	433	425,554	--	--	--	--
	Revised Total Coliform Rule	--	--	55	22,937	28	126,206
6	Disinfection By-Products Rule	59	221,309	59	333,336	54	294,748
7	Surface Water Treatment Rules	49	197,374	44	19,567	35	4,089,627 (a)
8	Groundwater Rule	1*	3,987,622 (b)	2	10,455	2	257,561
9	Lead and Copper Rule	18	12,250	12	12,744	8	10,331

(a) A Surface Water Treatment Rule treatment technique violation at Los Angeles Department of Water and Power (LADWP) in January 2018 – a 9-hour lapse in surface water disinfection where the 4-log virus inactivation requirement was not achieved.

(b) A Groundwater Rule treatment technique violation at LADWP in 2016 – a 6-hour lapse in groundwater disinfection treatment. The entire population of the PWS is listed, although the impact was to a smaller subset of the service area.

(c) For a summary of California-regulated contaminants, see Table 5 above

Table 7 summarizes the number and population of water systems with violations of monitoring and reporting requirements for the last three years.

**Table 7** Number and Population of Water Systems with Violations of Monitoring and Reporting Requirements (M/R)

No	Category	<u>2016</u> # of PWS	<u>2016</u> Pop	<u>2017</u> # of PWS	<u>2017</u> Pop	<u>2018</u> # of PWS	<u>2018</u> Pop
1	Inorganic Contaminants	115	41,087	58	17,287	108	118,525
2	Synthetic Organic Contaminants	4	1,990	2	3,000	3	89,489
3	Volatile Organic Contaminants	7	2,520	1	150	3	157,418
4	Radionuclide Contaminants	8	2,621	8	1,510	4	88,982
5	Total Coliform Rule	443	215,646	--	--	--	--
	Revised Total Coliform Rule	--	--	290	178,131	315	81,945
6	Disinfectant and Disinfection By-Products Rule	33	145,006	16	156,013	34	404,433
7	Surface Water Treatment Rules	10	100,356	8	21,280	5	703
8	Groundwater Rule	28	302,059	39	1,138,110	16	80,006
9	Lead and Copper Rule	476	511,127	348	707,094	496	803,835
10	Public Notification Rule	20	24,724	14	34,809	13	54,148
11	Consumer Confidence Report Rule	276	81,838	135	26,093	136	31,003
12	Variances and exemptions	N/A	N/A	5	2,287	2	400

In addition to the rules and violations required to be reported in the Annual Compliance Report, 1,002 public water systems violated at least one California-specific drinking water standard described in Section 1.8, with 453 public water systems violating one or more MCL/TTs, 482 public water systems violating one or more M/R requirements, and 47 public water systems violating both MCL/TTs and M/R requirements for state-regulated contaminants. 195 PWS violated other requirements specific to California's drinking water regulations, such as permit provision requirements. These are further discussed in Section 3.13.

The following additional data summary tables are included in the appendix to this report. These tables list public water system that have incurred violations of MCLs of three compounds of interest, sorted by county and water system number. The table also provides the population served by these water systems.

- Appendix A – exceedance of arsenic MCL.
- Appendix B – exceedance of the nitrate MCL and the combined nitrate-nitrite MCL.
- Appendix C – exceedance of the 1,2,3-trichloropropane MCL.

## Chapter 3. Discussion of Violations

This section contains summary information on violations of MCLs and TTs. More specific information on the quality of water provided by a public water system can be obtained by requesting a copy of the Consumer Confidence Report (CCR) that all CWS and NTNC are required to issue to their customers annually. To obtain a copy of a CCR, customers may contact the public water system serving the area. Many public water systems also post their CCR online. The State Water Board provides access to the CCRs received from PWS on the CA Drinking Water Watch webpage at <https://sdwis.waterboards.ca.gov/PDWWW/>. The CA Drinking Water Watch webpage also provides access to public water system contact information, water quality data, and violation and enforcement information. When a public water system has violated a drinking water standard, the public water system is required to provide a public notice to their consumers and make copies of the notice available upon request to others.

Sections 3.1 to 3.12 of this report discuss violations of federal primary MCLs, and Section 3.13 reports violations of California-specific drinking water standards.

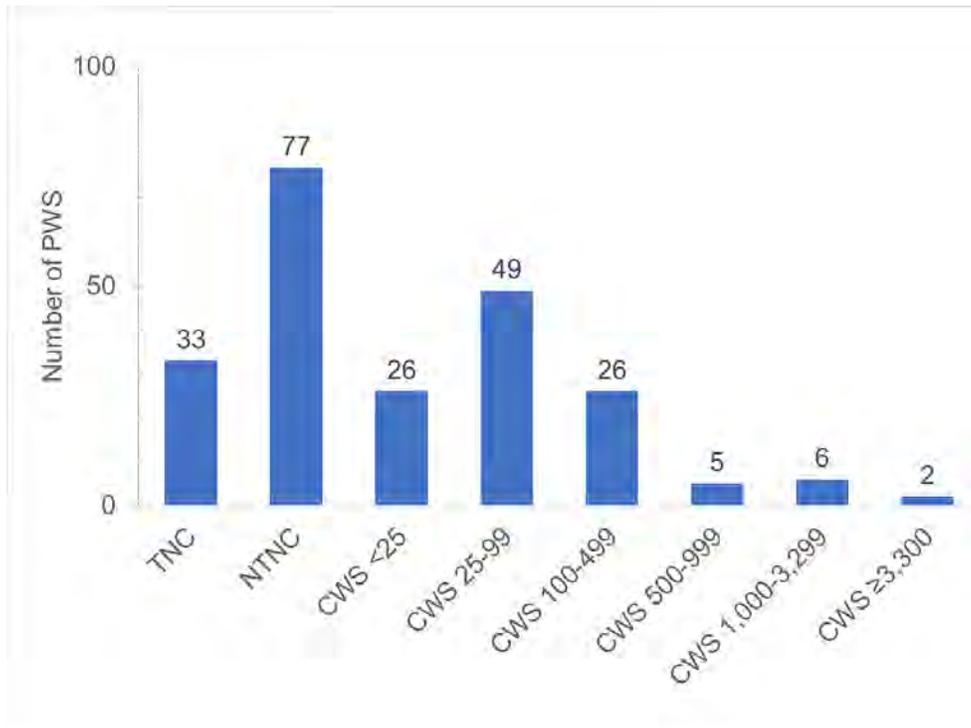
### 3.1. Inorganic Contaminants

All CWS and NTNC are required to meet primary drinking water standards for 18 inorganic contaminants. Additionally, TNC must monitor and comply with the MCLs for nitrate and nitrite. A total of 742 violations of inorganic contaminant MCLs were recorded for the year, as summarized below:

Contaminant/Rule	Violation Category	# of Violations	# of PWS
Antimony	MCL	3	1
Arsenic	MCL	333	99
Asbestos	MCL	1	1
Cadmium	MCL	6	2
Fluoride	MCL	52	16
Mercury	MCL	5	2
Nitrate	MCL	298	97
Nitrate-Nitrite	MCL	44	18
<b>Total</b>		<b>742</b>	<b>224 (a)</b>

(a) The total number of PWS is less than the sum of the PWS of each contaminant/rule listed, since a PWS may have violations of more than one contaminant/rule group.

Figure 7 below shows that of the 224 PWS that incurred one or more inorganic contaminant MCL violations of in 2018, 77 (34%) were NTNC and 101 (45%) were CWS serving less than 500 service connections.

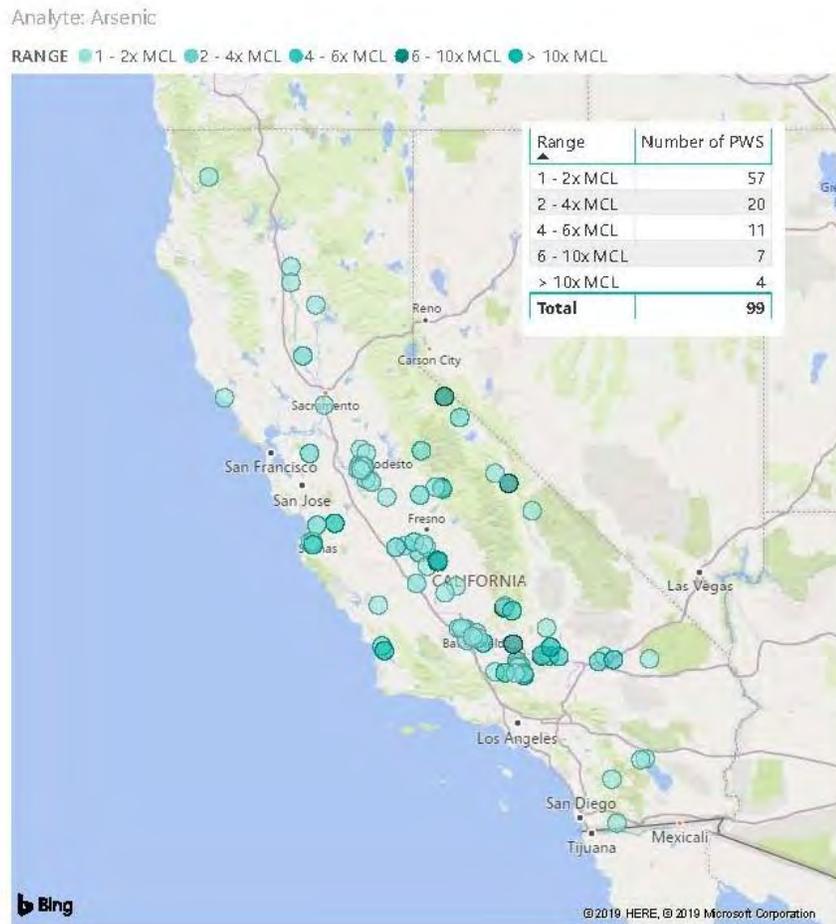


**Figure 7** Number of PWS with Inorganic Contaminant MCL Violations, by water system type and CWS Size (# of service connections)

**Antimony** MCL violations were incurred by one CWS in Kern County for a period of 9 months in 2018. The antimony level recorded was 11 ug/L, exceeding the antimony MCL of 6 ug/L. The major sources of antimony in drinking water is discharge from petroleum refineries, fire retardants, ceramics, electronics, and solder. Some people who drink water containing antimony in excess of the MCL over many years may experience increases in blood cholesterol and decreases in blood sugar.

**Arsenic** Over 300 arsenic MCL violations were incurred by about 100 PWS in 2018, accounting for about 45% of all inorganic chemical MCL violations in 2018. The arsenic MCL is 0.010 mg/L, and compliance with the arsenic MCL is determined based on a running annual average. More than half of PWS that incurred a violation exceeded the MCL at concentration levels less than twice the

arsenic MCL. Four PWS exceeded the arsenic MCL by more than 10 times the MCL. When a PWS exceeds the arsenic MCL and is unable to treat the water or switch to another source of drinking water that complies with drinking water standards, it must continue to provide public notification on a quarterly basis, among other things, until such time the PWS is able to comply with the MCL. Figure 8 below shows the areas in the state where PWS have incurred arsenic MCL violations in 2018.

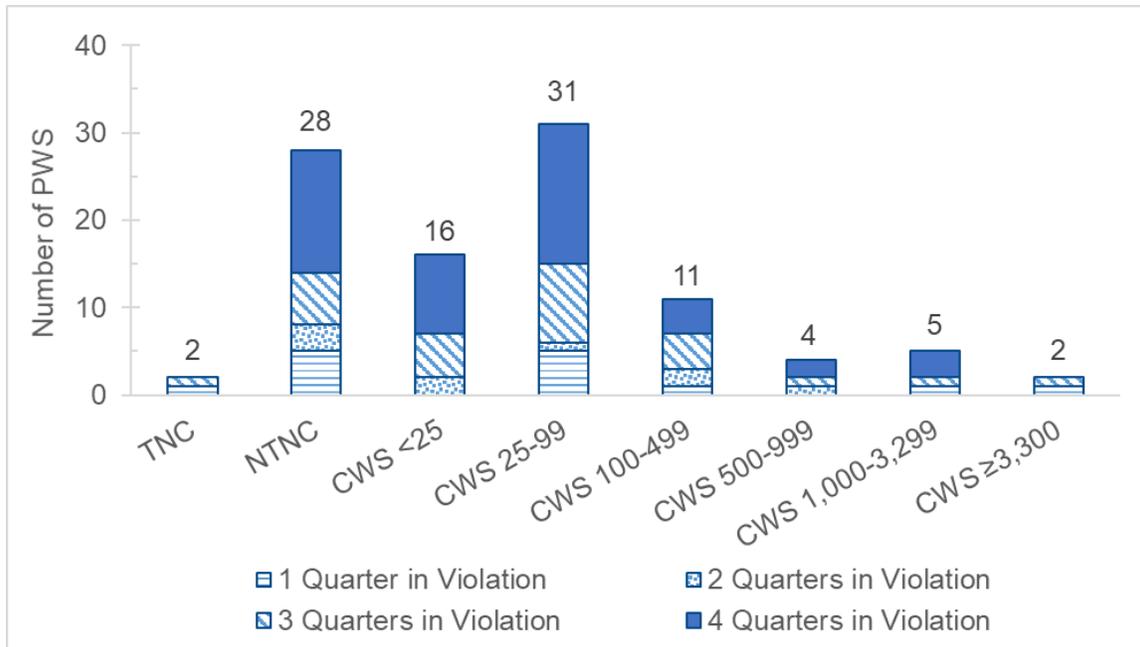


**Figure 8** Map showing the locations where arsenic MCL violations were incurred, and the maximum arsenic levels reported, categorized as multiples of the MCL (twice the MCL = 2x MCL).

The major sources of arsenic in drinking water are from erosion of natural deposits. Other sources of arsenic may include runoff from orchards, and wastes from glass and electronics production. Some people who drink water containing arsenic in excess of the MCL for many years could experience skin damage or

problems with their circulatory system and may have an increased risk for cancer.

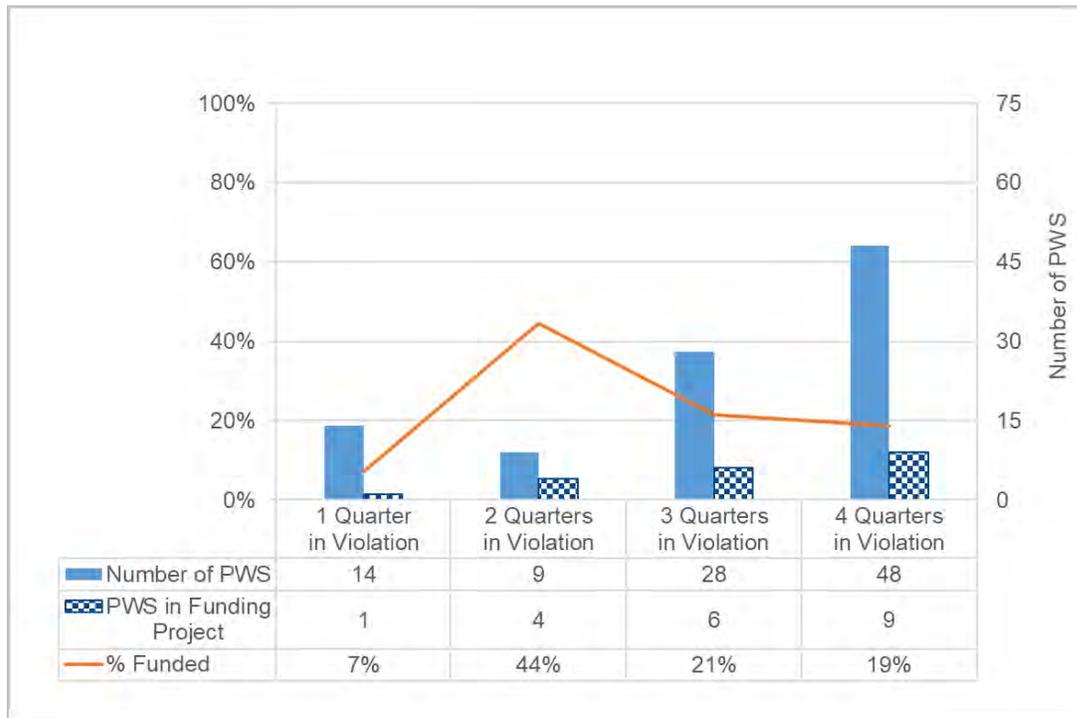
Figure 9 shows the types of PWS that incurred arsenic MCL violations in 2018. Noncommunity water systems and CWS serving less than 500 connections account for 76% of the total number of PWS that incurred an arsenic MCL violation in 2018.



**Figure 9** Number of PWS with arsenic MCL violations for each PWS type and CWS size

Figure 10 shows the duration of arsenic violations recorded in 2018. Thirteen PWS incurred a single quarterly arsenic violation in 2018, with the duration of the violation 3 months or less. Two of these PWS are large CWS (serving  $\geq 3,300$  connections) that already operate treatment facilities to treat for arsenic at other wells, but incurred violations because wells that had no treatment exceeded the MCL. Forty-eight (48) PWS incurred arsenic MCL violations in all four quarters of 2018, indicating persistent non-compliance with the arsenic MCL for these systems. A total of 20 PWS (~20% of the PWS with arsenic MCL violations) are

currently receiving funding through the State Water Board for projects to address the arsenic violations.



**Figure 10** Number of PWS with arsenic MCL violations and the duration of the violation.

**Asbestos** One CWS exceeded the asbestos MCL of 7 MFL (million fibers per liter) for one quarter in 2018. The system has asbestos cement pipe in the distribution system and had been making changes to the corrosion control treatment. The main source of asbestos is from internal corrosion of asbestos cement water mains or erosion of natural deposits. Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.

**Cadmium** MCL violations were incurred by 2 PWS in 2018. The PWS are both in Monterey County and both exceeded the MCL in 2017 as well. One is a CWS serving 29 connections, and the other is a NTNC. The reported cadmium levels were between 0.007 and 0.010 mg/L, which is 1-2 times the cadmium MCL of 0.005 mg/L. Both PWS have been working towards compliance. The CWS recently constructed a new well and is in the process of bringing the well online. The NTNC is providing bottled water in the interim while developing a point-of-use treatment system, with a goal of providing centralized treatment. The major

sources of cadmium in drinking water is internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating, industrial chemical factories, and metal refineries; runoff from waste batteries and paints. Some people who drink water containing cadmium in excess of the MCL over many years may experience kidney damage.

**Fluoride** – Fifty-two (52) violations of the California fluoride MCL were incurred by 16 PWS in 2018. Two of these systems also violated the federal fluoride MCL. The MCL for fluoride in California is 2 mg/L, which is lower than the 4 mg/L federal MCL. The major source of naturally occurring fluoride in drinking water is from erosion of natural deposits. Sources of fluoride associated with human activities include discharges from fertilizer and aluminum processing facilities. Some people who drink water containing fluoride in excess of the federal MCL of 4 mg/L over many years may get bone disease, including pain and tenderness of the bones. Children under nine years of age who drink water containing fluoride in excess of the California MCL may get mottled teeth (a brownish staining of the teeth called “dental fluorosis”).

Because fluoride also has a beneficial effect in preventing dental caries (tooth decay), some communities may add fluoride to their drinking water (fluoridation). Where fluoridation is practiced, fluoride concentrations are maintained at the optimal level for reduction of dental caries which is well below the state MCL.

**Mercury** MCL violations were incurred by two NTNC in 2018. One PWS exceeded the mercury MCL of 2 ug/L in all 4 quarters of 2018. In the United States, mercury compounds are manufactured in small amounts for specialty uses, such as chemical and pharmaceutical applications. Mercury may also be present from erosion of natural deposits or runoff from landfills and cropland. Mercury in groundwater may also be present due to leakage from some submersible pumps. Mercury exposure at levels above the MCL in drinking water over many years may result in mental disturbances, or impaired physical coordination, speech and hearing.

**Nitrate** (including nitrite and nitrate + nitrite combined) Over 300 (342) nitrate MCL violations were incurred by 115 PWS, accounting for about 46% of all inorganic chemical MCL violations in 2018. Nitrate and nitrite are commonly found in fertilizers used in farming and gardening. Nitrates are also found in sewage and waste from humans, animals, and some industrial processes, and may be a result of erosion of natural deposits. Contamination from nitrate and

nitrite is usually the result of these activities. There are few mineral deposits containing naturally occurring nitrate or nitrite in California.

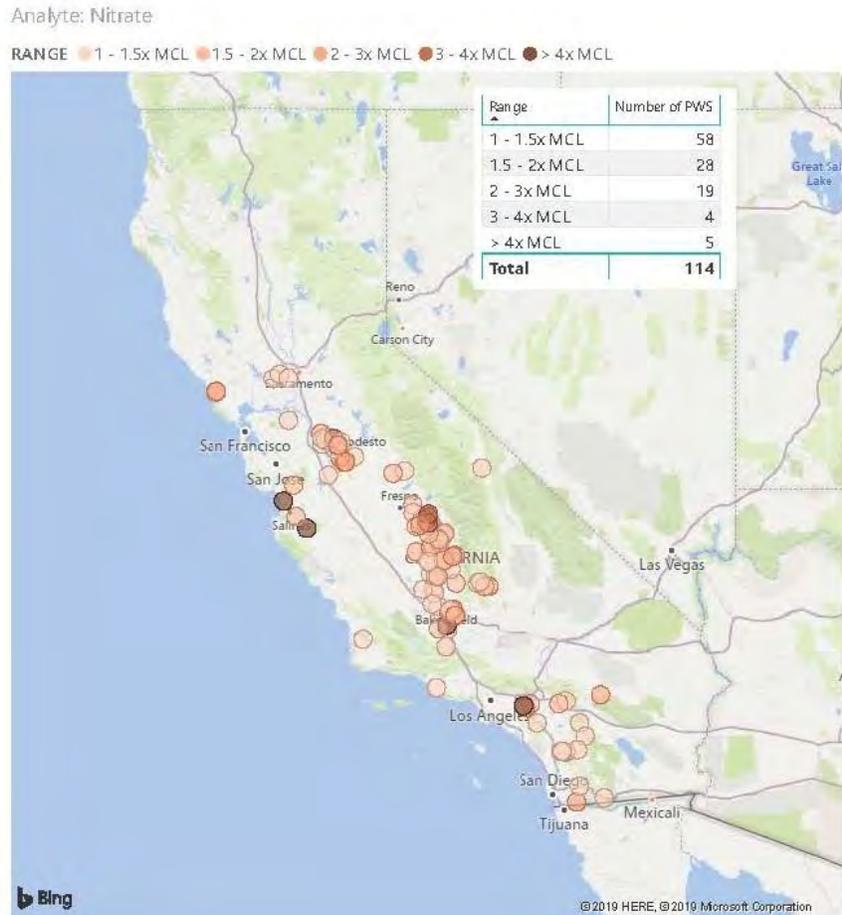
Excessive levels of nitrate and nitrite in drinking water can cause serious illness and, in rare cases, even death in infants less than six months of age. This is a result of interference with the oxygen carrying capacity of the infant's blood, called "blue baby syndrome" or "methemoglobinemia." This is an acute disease in that symptoms can develop rapidly. Symptoms of nitrate exposure in infants include shortness of breath and a marked blueness of the skin. As infants mature, changes in the digestive system naturally occur that stops the conversion of nitrates to nitrites, hence reducing the risk of health effects.

High nitrate levels may also affect the oxygen-carrying ability of the blood of pregnant women. Expert medical advice and an alternate source of drinking water are recommended if one suspects nitrate levels may be a cause for concern. Local and state health authorities are the best sources for information concerning alternate sources of drinking water. The State Water Board has set the drinking water standard at 10 mg/L nitrate (measured as nitrogen, or 'N') and 1 mg/L for nitrite (measured as N) to protect against the risk of these adverse effects. Drinking water that meets the drinking water standard is associated with little to no risk for nitrate or nitrite toxicity and is considered safe with respect to those compounds.

Due to the acute health effects of nitrate, a nitrate MCL violation is incurred if the average of a sample result and the confirmation sample result exceeds the MCL. The confirmation sample must be collected within 24 hours of notification by the laboratory that a sample exceeded the nitrate MCL. If a confirmation sample is not collected within 24 hours of notification, the PWS is immediately in violation of the nitrate MCL, and must therefore issue a public notice to its customers as soon as possible and within 24 hours, informing the public of the violation, including key information such as the potential health impacts, what the PWS is doing to correct the problem, and what the public can do to protect their health in the interim.

Figure 11 shows the areas in the state where PWS have incurred nitrate MCL violations in 2018. More than half (58) of PWS that incurred a nitrate violation exceeded the MCL at concentration levels of 1.5 times (or 15 mg/L) the MCL. Five PWS exceeded the nitrate MCL by more than 4 times the MCL. Of these five PWS, three are CWS serving less than 500 connections; two of the three are providing bottled water as an interim measure to protect public health, and the

other has installed point of use (POU) reverse osmosis treatment units. One of them was a NTNC that had installed a POU system but has since been inactivated as a PWS (it no longer met the definition of a PWS). The last one of the five was a larger CWS that incurred a nitrate MCL violation after a treatment plant failure. The CWS was directed to submit a corrective action plan to DDW in the citation (enforcement action) it received as a result of the violation.

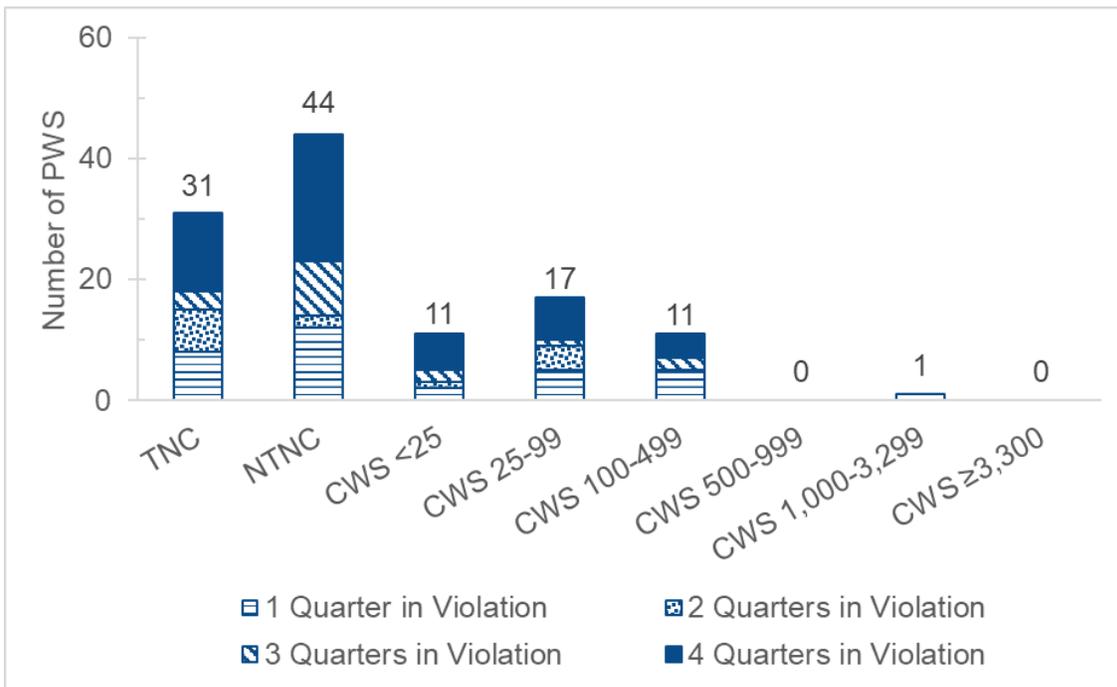


**Figure 11** The locations where nitrate MCL violations were incurred, and the maximum nitrate levels reported, categorized as multiples of the MCL (e.g., twice the MCL = 2x MCL)

PWS that incur nitrate MCL violations generally take measures to provide other sources of drinking water or treatment to address continuing nitrate MCL violations, if they have the capability to do so. PWS in these cases must at least provide regular (at least quarterly) public notification to its customers so that the

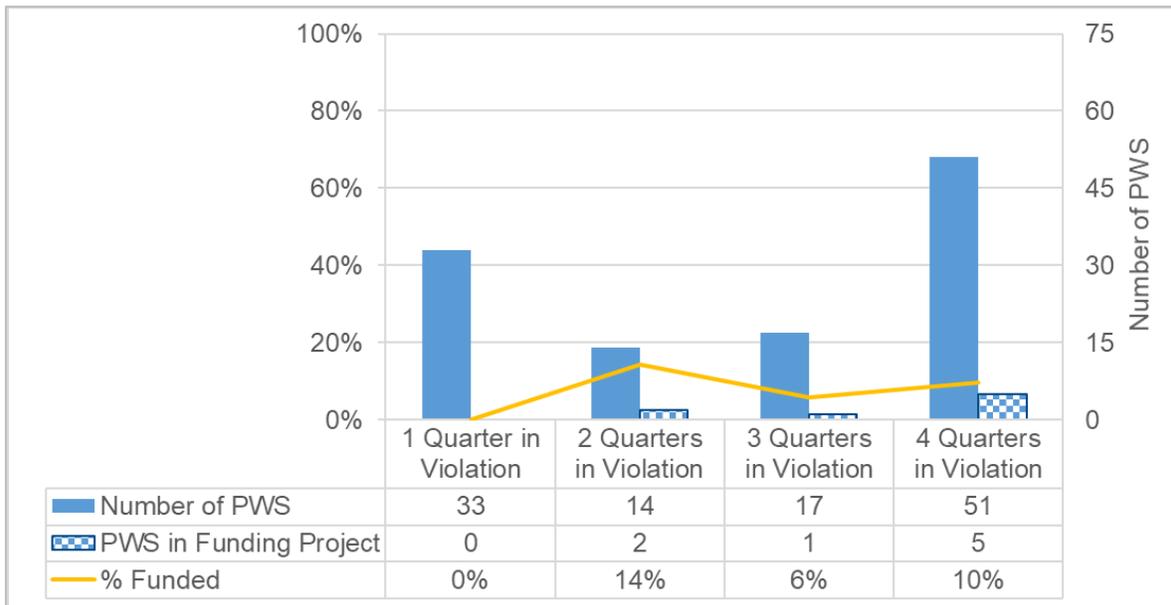
public can take action to protect their health. A list of PWS with nitrate MCL violations in 2018 is included in Attachment B.

Figure 12 shows the categories of PWS that incurred nitrate (including nitrate-nitrite) MCL violations in 2018. Noncommunity water systems and CWS serving less than 500 connections account for 99% of the total number of PWS that incurred a nitrate MCL violation in 2018. NTNC accounted for 38% of PWS with nitrate violations, and CWS serving less than 500 connections accounted for 34% of the PWS with nitrate violations.



**Figure 12** Number of PWS with nitrate (including nitrate-nitrite) MCL violations for each PWS type and CWS size

Figure 13 below shows the duration of nitrate violations recorded in 2018. A total of 33 PWS incurred a single nitrate MCL violation in 2018, where the duration of the violation was 1 quarter (3 months or less). Fifty-one (51) PWS violated the nitrate MCL in all four quarters of 2018. Records show that five of these PWS are currently receiving funding through a State Water Board funding program, such as the Drinking Water State Revolving Fund, to address the MCL violation.



**Figure 13** Number of PWS with nitrate or nitrite MCL violations and the duration of the violation.

### 3.2. Synthetic Organic Contaminants

CWS and NTNC are required to meet primary drinking water standards for up to 33 synthetic organic contaminants (SOCs). Waivers from monitoring can be granted. Of the 33 SOC, 3 are California-specific (not federally regulated); violations for the California-specific SOC are discussed in Section 3.13.

Contaminant/Rule	Violation Category	# of Violations	# of PWS
DBCP	MCL	5	3

During 2018, there were five violations of the dibromochloropropane (DBCP) MCL of 0.2 ug/L. The violations were incurred by three NTNC, two in Fresno County and one in Tulare County. DBCP is a banned nematicide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit. Some people who use water containing DBCP in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.

### 3.3. Volatile Organic Contaminants (VOCs)

CWS and NTNC are required to comply with primary drinking water standards for 27 volatile organic contaminants (VOCs). In 2018, no MCL violations were reported for VOCs.

### 3.4. Radionuclide Rule

CWS and NTNC are required to meet primary drinking water standards for six alpha-emitting radionuclide contaminants regulated under the Radionuclide Rule. Monitoring for beta particle and photon radioactivity is required only if the Drinking Water Program determines that a source of water supply is vulnerable based on proximity to a nuclear facility. During 2018, there were 134 violations of radionuclide MCLs, involving 38 public water systems. All radionuclide MCL violations were for alpha-emitters, including uranium and gross alpha.

Contaminant/Rule	Violation Category	# of Violations	# of PWS
Combined Uranium	MCL	122	35
Gross Alpha, excluding Uranium and Radon	MCL	12	5
<b>Total</b>		134	38 (a)

(a) The total number of PWS is less than the sum of the PWS of each contaminant/rule listed, since a PWS may have violations in more than one contaminant/rule group.

The major source of uranium in drinking water is from erosion of natural deposits. Some people who drink water containing uranium in excess of the MCL over many years may have kidney problems or an increased risk of getting cancer. The State Water Board has set the drinking water standard for uranium at 20 pCi/L to protect against the risk of these adverse health effects. USEPA has set a federal drinking water standard for uranium at 30 ug/L, which is equivalent to the state MCL.

### 3.5. Total Coliform Rule (TCR) and the Revised TCR (rTCR)

All public water systems are required to comply with the Total Coliform Rule (TCR), which specifies monitoring of the water in the distribution system for the presence of coliform bacteria. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful

bacteria may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.

CWS are required to collect samples ranging from one sample per month to 120 samples per week in the water distribution system, depending on the size of the PWS. NTNC and TNC systems are generally on a monthly or quarterly sampling frequency. Whenever samples are total coliform-positive, repeat samples must be collected at that location and in surrounding areas and analyzed for fecal coliform or *E. coli* bacteria. Fecal coliforms and *E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.

A public water system is in violation of the TCR Total Coliform MCL when any of the following occurs:

- Monthly Total Coliform MCL (non-acute)
  - For a public water system which collects at least 40 samples per month, more than 5.0% of the samples collected during any month are total coliform-positive; or
  - For a public water system which collects fewer than 40 samples per month, more than one sample collected during any month is total coliform-positive; or
- Acute Total Coliform MCL
  - Any repeat sample is fecal coliform-positive or *E. coli*-positive; or
  - Any repeat sample following a fecal coliform-positive or *E. coli*-positive routine sample is total coliform-positive.

The federal Revised Total Coliform Rule (rTCR) became effective on April 1, 2016, which replaced the TCR Monthly Total Coliform MCL with new Coliform Treatment Technique requirements and added a new *E. coli* MCL. The rTCR establishes a “find-and-fix” approach for investigating and correcting causes of coliform problems within water distribution systems. Since California has not yet revised the state’s TCR regulation to incorporate rTCR, DDW is regulating both the rTCR and the state TCR concurrently. Because violation of the monthly Total Coliform MCL is no longer reportable to USEPA, DDW tracks these as state violations. A summary of the TCR Monthly Total Coliform MCL violations is presented in Section 3.13.

A PWS is in violation of the rTCR *E. coli* MCL or Coliform Treatment Technique requirements when any of the following occurs:

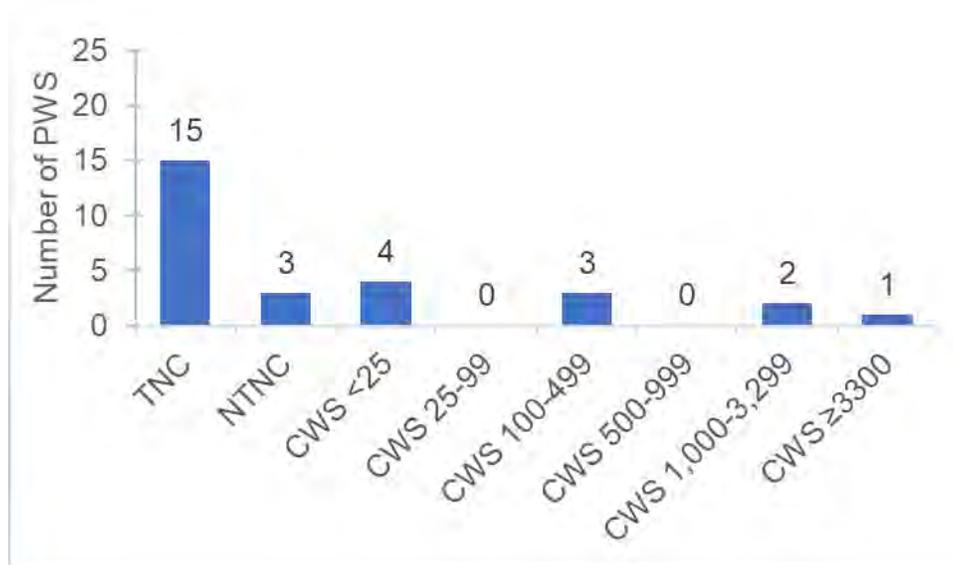
- *E. coli* MCL (acute)
  - Same criteria as the existing Acute Total Coliform MCL conditions
- Coliform Treatment Technique
  - Failure to conduct and submit the Level 1 Assessment, or complete the corrective actions identified by the Level 1 Assessment. A Level 1 assessment is a study of the water system to identify potential problems and determine why total coliform bacteria have been found in the water distribution system;
  - Failure to complete the corrective actions identified by the Level 2 Assessment. A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in the water system.

The federally reported rTCR MCL/TT violations for 2018 are summarized in the table below.

Contaminant/Rule	Violation Category	# of Violations	# of PWS
Revised TCR	<i>E. coli</i> MCL Violation	22	20
Revised TCR	TT – Level 1 Assessment	7	7
Revised TCR	TT – Level 2 Assessment	1	1
Total		30	28 (a)

(a) The total number of PWS is less than the sum of the PWS of each contaminant/rule listed, since a PWS may have violations in more than one contaminant/rule group.

Figure 14 shows that of the 28 PWS that incurred one or more rTCR MCL/TT violations in 2018, more than 50% of them were TNC water systems.



**Figure 14** Number of PWS with rTCR MCL violations for each PWS type and CWS size

### 3.6. Disinfectants and Disinfection By-Products Rule (DBPR)

All CWS and NTNC that provide disinfected drinking water are required to comply with the Stage 1 and Stage 2 Disinfectants and Disinfection By-Products Rules (DBPR). The DBPR established MCLs for four by-products of drinking water disinfection - total trihalomethanes (TTHMs), haloacetic acids (HAA5), bromate, and chlorite; maximum disinfectant residual Levels (MRDLs) for three disinfectants – chlorine, chloramine, and chlorine dioxide; TT requirements for the control of total organic carbon (TOC), a disinfection byproduct precursor in surface water sources using conventional surface water treatment; and TT requirements for certified treatment operators.

TTHMs and HAA5s are found primarily in some treated surface water systems but have been found to develop in some disinfected groundwater systems as well. Some people who drink water containing TTHMs in excess of the MCL over many years may experience liver, kidney or nervous system problems and may have an increased risk of getting cancer. HAA5 also present a cancer risk to some people who drink water containing concentrations in excess of the MCL over many years. Some infants and young children who drink water containing chlorite in excess of the MCL could experience nervous system effects. Similar effects may occur in fetuses of pregnant women who drink water containing chlorite in excess of the MCL. Some people may experience anemia.

The DBPR MCL and TT violations are summarized in the table below. In 2018, 54 PWS incurred MCL and TT violations, including 193 MCL violations and 9 TT violations. Fourteen PWS violated both TTHM and HAA5 MCLs in 2018.

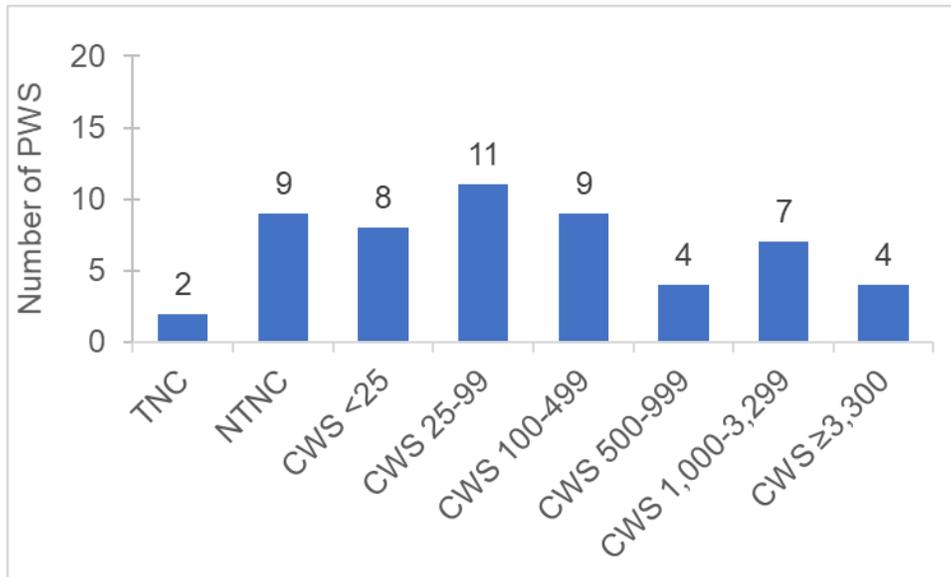
Contaminant/Rule	Violation Category	# of Violations	# of PWS
Haloacetic Acids (HAA5)	MCL	91	33
Total Trihalomethanes (TTHM)	MCL	101	30
Chlorite	MCL	1	1
DBPR	TT – Failure to Achieve Precursor Removal	6	3
DBPR	TT - No Certified Operator	3	3
<b>Total</b>		202	54 (a)

(a) The total number of PWS is less than the sum of the PWS of each contaminant/rule listed, since a PWS may have violations of more than one contaminant/rule group.

TTHM and HAA5 MCL violations occur when the locational running annual average exceeds the MCL. The determination of a chlorite MCL violation is complex and can occur under a combination of the following scenarios: whether an entry point sample exceeded the MCL, whether a routine or triggered distribution system sample exceeded the MCL, whether confirmation samples were collected or whether they confirmed the original sample result, and whether consecutive entry point samples exceeded the MCL.

As a requirement of the DBPR, California is required to maintain a water treatment operator certification program for PWS using a surface water source or a groundwater source under the direct influence of surface water. There were two violations of these operator certification requirements in 2018. California additionally requires certified water treatment operators for PWS that provide groundwater treatment and requires all PWS to be operated by certified distribution operators. California maintains a distribution operator certification program in addition to a treatment operator certification program.

Figure 15 shows that of NTNC and CWS serving less than 500 connections incurred 68% of the DBPR MCL/TT violations in 2018. The violations incurred by the two TNC were for failure to have a certified operator.



**Figure 15** Number of PWS with DBPR MCL/TT violations for each PWS type and size

### 3.7. Surface Water Treatment Rules

The surface water treatment rules include the Surface Water Treatment Rule (SWTR), Interim Enhanced Surface Water Treatment Rule (IESWTR), Long-term 1 Enhanced Surface Water Treatment Rule (LT1ESWTR), Long-term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR), and the Filter Backwash Rule. These rules establish monitoring and reporting requirements, treatment techniques, performance standards, and turbidity standards to be met by public water systems using surface water as a drinking water source. As used in this report, the term “surface water” also includes groundwater that has been determined to be under the direct influence of surface water (GWUDI).

Treatment techniques and performance standards are used to establish water quality objectives instead of MCLs for microbiological contaminants that may be found in surface waters, including *Giardia lamblia*, *Cryptosporidium parvum*, Legionella, heterotrophic plate count bacteria, and viruses. Public water systems that use surface water are required to provide multiple levels of treatment (termed ‘multi-barrier’ treatment) to protect against adverse health effects from microbiological contaminants. All multi-barrier treatment systems must include the use of an approved filtration technology as a first barrier, and a reliable disinfection system as a second barrier. Some PWS can avoid filtration by

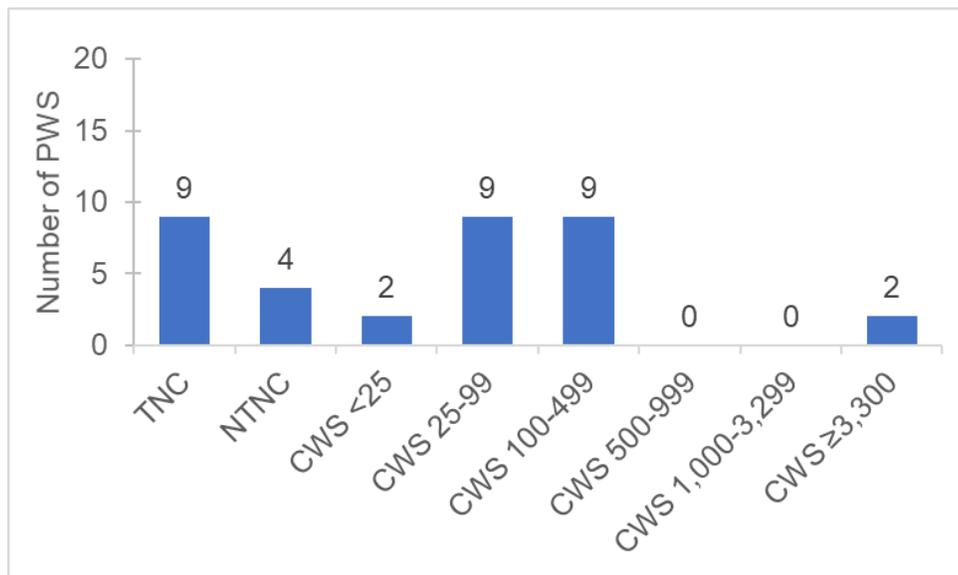
meeting special requirements including rigorous standards on their source water quality and watershed controls. These PWS must still disinfect their water.

The following table summarizes the TT violations of the surface water treatment rules. In 2018, 35 PWS incurred 176 treatment technique violations of the surface water treatment rules, such as failure to meet the turbidity requirements for filtration or failure to provide the required level of disinfection treatment.

Contaminant/Rule	Violation Category	# of Violations	# of PWS
SWTR	TT - Failure to Filter	147	19
LT2ESWTR	TT - Failure to Filter	4	4
SWTR	TT – Failure of Turbidity or Disinfection Requirements	24	11
IESWTR	TT - Monthly Turbidity Exceedance	1	1
<b>Total</b>		<b>176</b>	<b>35 (a)</b>

(a) The total number of PWS is less than the sum of the PWS of each contaminant/rule listed, since a PWS may have violations of more than one contaminant/rule group.

Figure 16 below shows that 94% of PWS that incurred SWTR TT violations in 2018 were noncommunity water systems and CWS serving less than 500 connections.



**Figure 16** Number of PWS with SWTR TT violations for each PWS type and CWS size

### 3.8. Groundwater Rule

All public water systems that use groundwater, such as wells or springs, must comply with the Groundwater Rule (GWR) to reduce the occurrence of disease associated with microorganisms in drinking water derived from groundwater. The GWR establishes a risk-based approach to target ground water systems that are vulnerable to fecal contamination. Ground water systems that are identified as being at risk of fecal contamination must take corrective action to reduce potential illness from exposure to microbial pathogens.

Special monitoring of the groundwater source for a fecal indicator microorganism must be conducted whenever a sample collected in the water distribution system pursuant to the rTCR is positive for total coliform (triggered source monitoring). California has chosen to use *E. coli* monitoring as the indicator of fecal contamination. A summary of MCL and TT violations of the GWR, such as failure to provide the required level of virus inactivation treatment, is provided below:

Contaminant/Rule	Violation Category	# of Violations	# of PWS
Groundwater Rule	TT - Failure to Provide Treatment	3	2

One of the water systems that violated a GWR TT in 2018 was a CWS serving less than 25 connections in Sonoma County, and the other water system was a CWS serving more than 3,300 connections in Los Angeles County.

### 3.9. Lead and Copper Rule

All CWS and NTNC must comply with the Lead and Copper Rule (LCR). The LCR requires collection of first draw samples from single family residences that are at risk of containing lead pipes or copper pipe with lead solder, or which may be served by a lead service line. Samples are often collected by volunteers who live in residences that are prioritized for sampling. PWS are required to collect the samples from residences that meet the site selection criteria, send the samples to a certified laboratory for analysis, and report the results to DDW and the occupant of each residence sampled. PWS must meet the action levels for

lead and copper, based on the calculated 90th percentile of all sample results taken during the sampling period.

The presence of lead or copper at concentrations above their respective action levels is not in itself a violation, but it triggers actions that PWS must take. If a lead or copper action level is exceeded, the PWS must take specified steps to evaluate the need for corrosion control treatment, including conducting an optimal corrosion control treatment (OCCT) study and/or a source water treatment (SOWT) study, and implementation of study recommendations. For lead action level exceedances, PWS must conduct public education on the effects of lead and ways the public can reduce lead exposure. The action level for lead is 0.015 mg/L, and copper has an action level of 1.3 mg/L, based on the 90<sup>th</sup> percentile concentration in all samples collected during a sampling period.

The following table summarizes the LCR TT violations recorded for 2018.

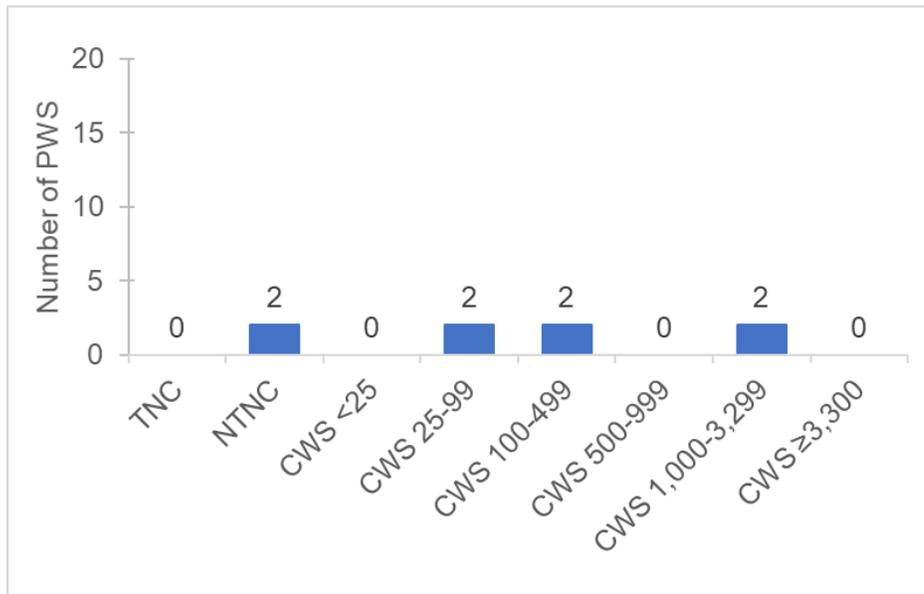
<b>Contaminant/Rule</b>	<b>Violation Category</b>	<b># of Violations</b>	<b># of PWS</b>
LCR	TT - Maximum Permissible Level	2	2
LCR	TT – Install OCCT/SOWT Treatment	3	3
LCR	TT - Public Education	3	3
<b>Total</b>		<b>8</b>	<b>8</b>

(a) Maximum permissible levels (MPL) are the highest allowable lead and/or copper concentrations after treatment for source water that is entering a water system’s distribution system. The two MPL violations recorded were each entered for exceedance of a lead or copper action level, not an exceedance of an MPL.

Lead is generally present in drinking water as a result of internal corrosion of household plumbing or from lead service lines. It may also be present in source waters due to discharges from industrial manufacturers or erosion of natural deposits. Infants and children who drink water containing lead at concentrations above the action level may experience delays in their physical or mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink water with lead above the action level over many years may develop kidney problems or high blood pressure.

The major sources of copper in drinking water are from internal corrosion of household plumbing systems, erosion of natural deposits, and leaching from wood preservatives. Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short

amount of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage. People with Wilson’s Disease should consult their personal doctor. Figure 17 below shows that LCR TT violations were incurred by PWS across the type and size ranges in 2018.



**Figure 17** Number of PWS with LCR TT violations for each PWS type and CWS size

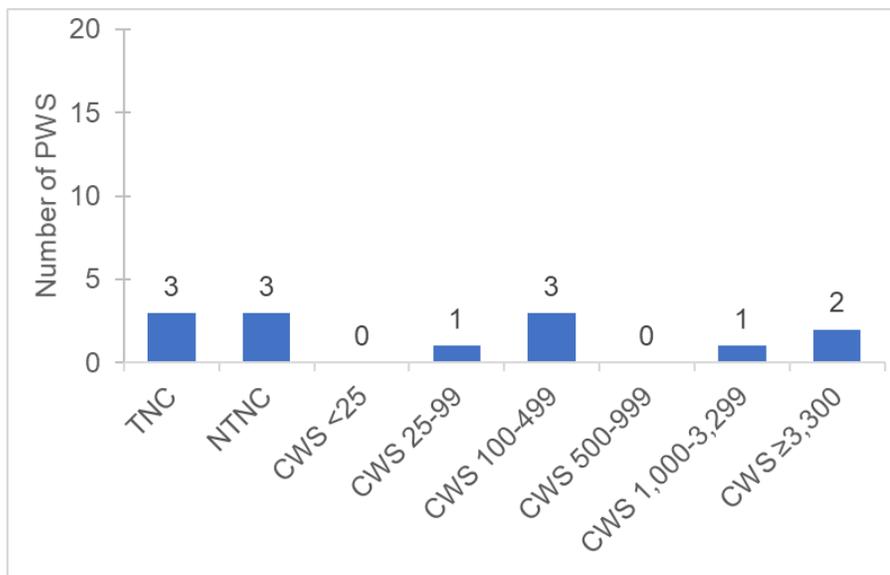
### 3.10. Public Notification

Public water systems are required to notify the people that are served by the water system whenever a violation of a drinking water standard occurs. Public notices are required to be issued immediately, usually within 24 hours, for violations of MCLs for contaminants with acute (short term) health effects. Examples of these include violation of an *E. Coli* MCL, violation of a nitrate, nitrite, and combined nitrate and nitrite, or a perchlorate MCL. Public notices are issued for violations of drinking water standards for contaminants with chronic (long term) health effects, as soon as possible, usually within 30 days. Examples of these include violations of MCLs for arsenic, radioactivity and organic chemicals. A violation occurs when there is a failure to provide the required

notice to the public within the required time frame. There were 30 violations for failure to provide the required notice to the public in 2018.

Contaminant/Rule	Violation Category	# of Violations	# of PWS
Public Notice	Failure to Provide Public Notification	30	13

Figure 18 below shows that occurrence of PN violations was generally independent of PWS type and size.



**Figure 18** Number of PWS with PN violations for each PWS type and CWS size

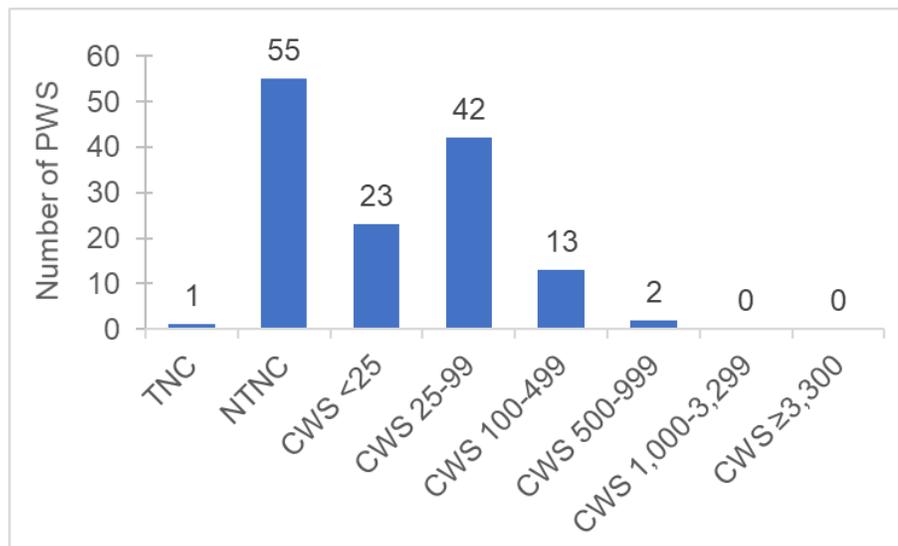
### 3.11. Consumer Confidence Report Violations

CWS and NTNC are required to provide to their customers a report each year of the quality of the water served by their water system during the prior calendar year. Each year’s Consumer Confidence Report (CCR) must also include information on the source(s) of drinking water, the levels of any detected contaminants, and compliance with drinking water regulations. Public water systems must describe any violations of the water quality standards in the CCR.

In 2018, 136 public water systems incurred violations for failure to complete the CCR and make the CCR available to its customers. There are more violations than the number of water systems because CCR violation records from previous years were not shown as being resolved.

Contaminant/Rule	Violation Category	# of Violations	# of PWS
CCR	Failure to prepare and deliver a Consumer Confidence Report	175	136

Figure 19 below shows that 98% of CCR violations were incurred by NTNC and CWS serving less than 500 connections.



**Figure 19** Number of PWS with CCR violations for each PWS type and CWS size

### 3.12. Variances, Exemptions and Other Violations

The State Water Board is authorized under the federal SDWA to issue variances and exemptions from meeting drinking water standards to PWS under special circumstances. Two PWS incurred a violation of a variance, exemption, or other compliance tool in 2018.

### 3.13. Violations of California-Specific Standards

All CWS and NTNC are required comply with primary drinking water standards contained in Title 22 California Code of Regulations. Contaminants with primary MCLs regulated by California but not regulated by USEPA include the following:

*Inorganic Contaminants:*

- Perchlorate
- Aluminum
- Nickel

*Synthetic Organic Contaminants*

- Bentazon
- Molinate
- Thiobencarb
- 1,2,3-Trichloropropane

*Volatile Organic Contaminants*

- Methyl tert-butyl Ether (MTBE)
- 1,1-Dichloroethane
- 1,3-Dichloropropene
- 1,1,2,2-Tetrachloroethane
- Trichlorofluoromethane
- 1,1,2-Trichloro-1,2,2-trifluoroethane

In 2018, about 763 violations were incurred by public water systems for failing to meet an MCL or TT of a California-regulated contaminant. The table below summarizes the violations of a primary MCL, secondary MCL or TT for California regulated contaminant.

Contaminant/Rule	Violation Category	# of Violations	# of PWS
Perchlorate	Primary MCL	10	2
1,2,3-TCP	Primary MCL	345	149
CA TCR	Monthly Total Coliform MCL Violation	388	310
Aluminum	Secondary MCL	1	1
Copper	Secondary MCL	1	1
Iron	Secondary MCL	3	2
Manganese	Secondary MCL	15	6

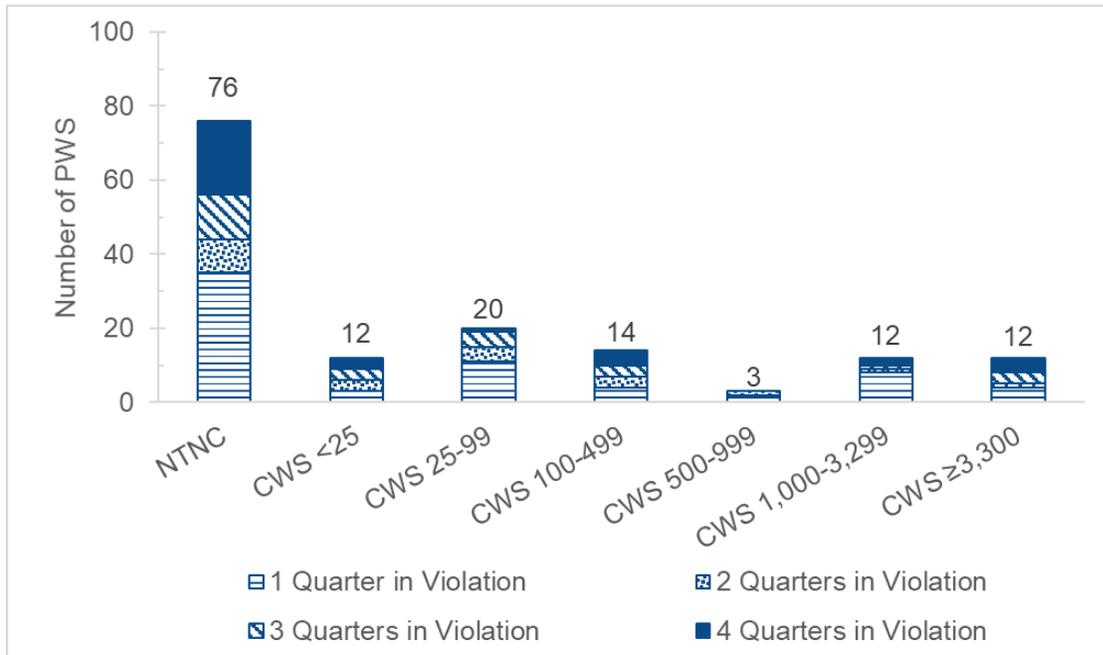
**Perchlorate** - MCL violations were incurred by two PWS in 2018 (down by one from last year), one a NTNC and the other a CWS serving less than 25 connections. The two PWS violated the perchlorate MCL for all four quarters of 2018. The perchlorate level recorded ranged from 8 to 11 ug/L, exceeding the perchlorate MCL of 6 ug/L.

The major sources of perchlorate in drinking water are solid rocket propellants, fireworks, explosives, flares, matches, and a variety of industries. Perchlorate usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that use, store, or dispose of perchlorate and its salts. Perchlorate's interference with iodide uptake by the thyroid gland can decrease production of thyroid hormone, which is needed for prenatal and postnatal growth and development, as well as for normal metabolism and mental function in the adult.

**1,2,3-Trichloropropane (123TCP)** The State Water Board established an MCL for 1,2,3-trichloropropane (123TCP) of 0.005 ppt (ug/L) on December 14, 2017. All CWS and NTNC must comply with the new 123TCP drinking water standards. These water systems started conducting initial monitoring of their sources in first quarter 2018.

123TCP is used as an industrial solvent, paint and varnish remover, and cleaning and degreasing agent. It is also a byproduct of the production of pesticides and other compounds and was an impurity and inactive ingredient of soil fumigant pesticides historically used in California. The major sources of 123TCP in drinking water include runoff/leaching of soil fumigant pesticides applied on agricultural lands and leaching from hazardous waste sites. Some people who drink water containing 123TCP in excess of the MCL over many years may have an increased risk of getting cancer.

Figure 20 summarizes the number of CWS and NTNC that incurred one or more MCL violations for 123TCP in 2018.



**Figure 20** Number of NTNC and CWS with an MCL violation for 123TCP.

About the same number of NTNC as CWS incurred violations of 123TCP in 2018. A large percentage (82%) of the PWS that incurred MCL violations were either NTNC or small CWS (those serving less than 500 service connections).

The PWS in five counties accounted for 93% of the total number of PWS that incurred an MCL violation in 2018. These counties are all in the California Central Valley.

County	Total	#CWS	#NTNC
Fresno	32	11	21
Kern	43	24	19
Merced	20	5	15
Tulare	26	13	13
San Joaquin	11	5	6

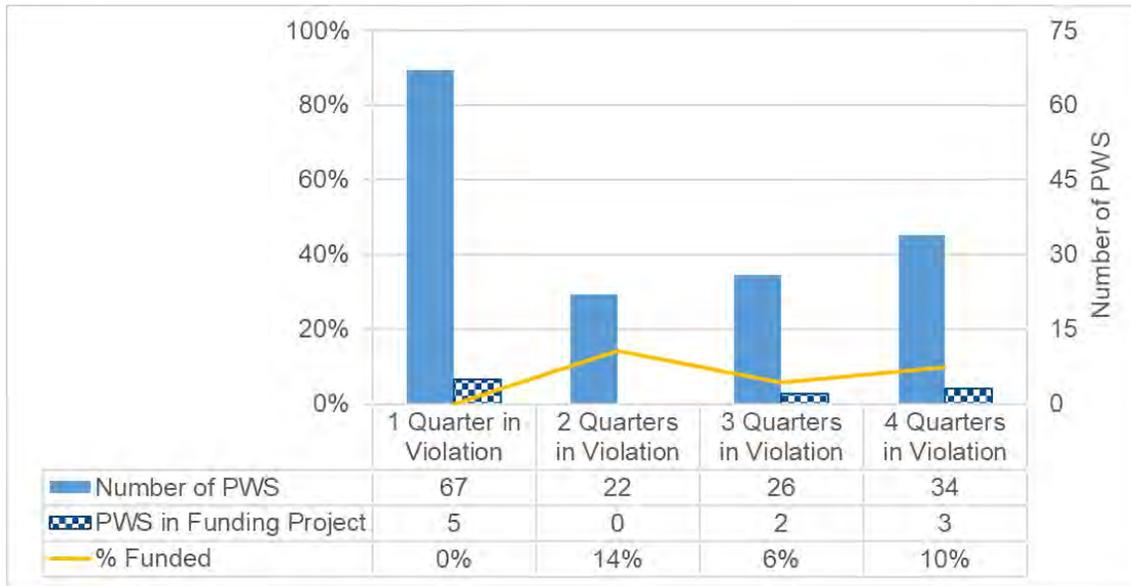
Figure 21 shows a map of all counties with the number of PWS in each county that exceeded the 123TCP MCL in 2018.



**Figure 21** A map of counties showing where the 123TCP violations occurred. The number shown represents the number of PWS in that county that had one or more 123TCP violations in 2018.

Figure 22 shows the duration of 123TCP violations recorded in 2018. Sixty-seven PWS incurred a single quarterly 123TCP violation in 2018. Thirty-four PWS incurred four or more 123TCP MCL violations in 2018. Three of these PWS are participating in funding projects with the State Water Board to address the 123TCP problem.

A total of 10 PWS (~6% of the 149 PWS with 123TCP MCL violations) are currently receiving funding through the State Water Board's Drinking Water State Revolving Fund or Proposition funding to address the 123TCP violations.



**Figure 22** Number of PWS with 123TCP MCL violations and the duration of the violation.

**CA TCR** - As discussed in Section 2.1, the Drinking Water Program staff track violations for both the rTCR and TCR because California’s TCR regulations have not yet been updated to reflect the rTCR. Violations of the monthly Total Coliform MCL are no longer reported to USEPA, so DDW tracks these as state violations. 388 monthly TCR MCL violations were incurred by 310 PWS in 2018.

**Aluminum** A secondary MCL violation was incurred by one PWS in 2018. The sources of aluminum in drinking water is erosion of natural deposits and residue from some surface water treatment processes.

**Iron** Secondary MCL violations were incurred by two PWS in 2018. The sources of iron in drinking water is leaching from natural deposits; and industrial wastes.

**Manganese** Secondary MCL violations were incurred by six PWS in 2018. The sources of manganese in drinking water is leaching from natural deposits.

## Chapter 4. Enforcement Activities

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DDW and LPAs take enforcement actions when a PWS violates an MCL or treatment technique or fails to conduct the required monitoring and reporting activities.

Enforcement action is an essential element of the DDW's regulatory program to bring all public water systems into full compliance with drinking water standards and regulations to ensure that the public receives a safe and reliable supply of drinking water. Carrying out an enforcement program is a requirement of the primacy delegation from USEPA. DDW may take a variety of enforcement actions depending on the type of violation and recurrence of a violation and include both formal and informal enforcement actions. Issuance of progressively stringent enforcement actions is the means used to bring an unresponsive water system into compliance.

DDW's enforcement strategy for public water systems that violate a primary drinking water maximum contaminant level includes issuance of formal enforcement actions in a timely manner. The California Health and Safety Code (CHSC) section 116655(a) specifies that whenever the State Board determines that any person has violated or is violating this chapter, or any permit, regulation, or standard issued or adopted pursuant to this chapter, the director may issue an order doing any of the following:

- (1) Directing compliance forthwith;
- (2) Directing compliance in accordance with a time schedule set by the State Board;
- (3) Directing that appropriate preventive action be taken in the case of a threatened violation.

CHSC section 116655(b) allows DDW to specify in the enforcement order any of the following requirements:

- (1) That the existing plant, works, or system be repaired, altered or added to;
- (2) That purification or treatment works be installed;
- (3) That the source of water supply be changed;

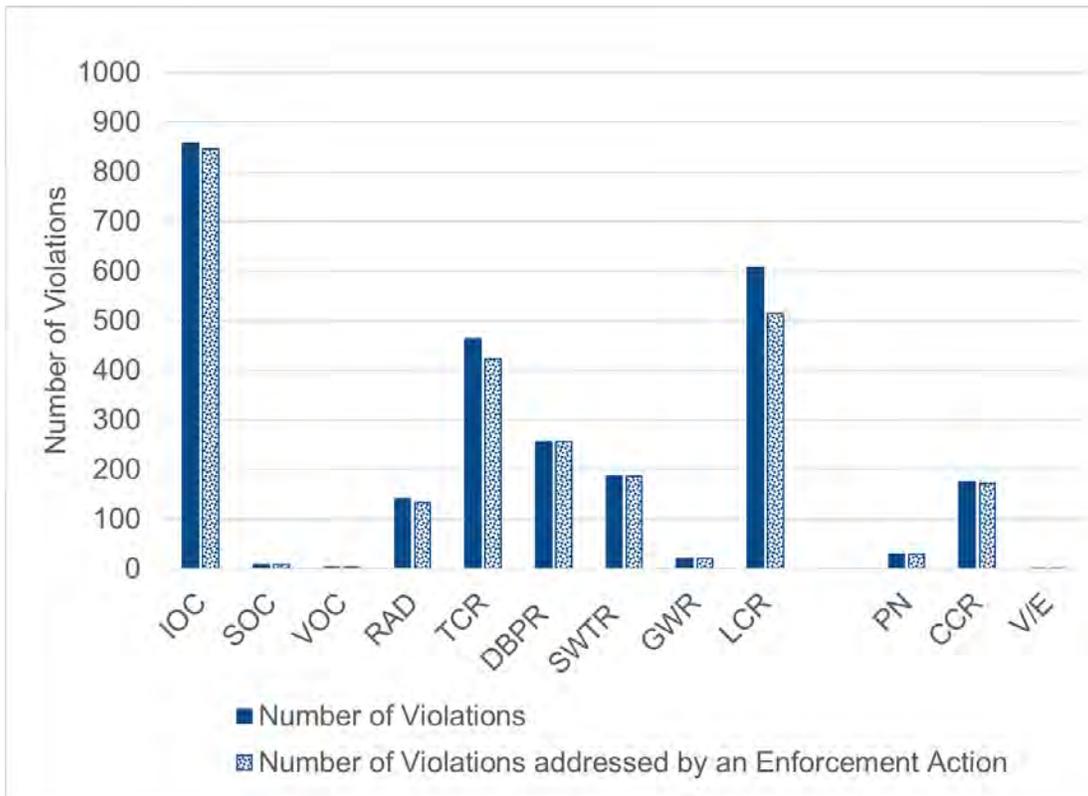
- (4) That no additional service connection be made to the system;
- (5) That the water supply, the plant, or the system be monitored;
- (6) That a report on the condition and operation of the plant, works, system, or water supply be submitted to the state board.

Formal enforcement actions available to DDW include citations, compliance orders, permit amendments, and revocation or suspension of an existing operating permit. The CHSC also authorizes assessing civil penalties up to \$25,000 per day for each day a drinking water standard violation occurs or placing a water system into receivership. Aggressive enforcement action is a key element of DDW's overall regulatory strategy to bring all public water systems into full compliance with drinking water standards and regulations. DDW has implemented an enforcement strategy that includes the requirement for the PWS to submit a compliance action plan within a brief timeframe after receipt of the enforcement action and must achieve compliance within a specified time period. Failure to achieve compliance within that time frame may result in escalated enforcement, including issuance of civil penalties.

#### **4.1. Enforcement Actions Taken**

In 2018, the Drinking Water Program issued 2,800 enforcement actions to public water systems for failing to comply with regulations. An enforcement action can be a notice of violation, a citation, or a compliance order. An enforcement action can address one or more violations, and prescribe public notification requirements as necessary, corrective actions and deadlines that the public water system must meet, in order to return to compliance (RTC).

Figure 23 shows the number of violations that were addressed by an enforcement action. Of the 4,297 violations (combined federal and state violations) that occurred in 2018, records show that over 94% were addressed with an enforcement action. Most of the unaddressed violations are associated with the Lead and Copper Rule, followed by the Revised Total Coliform Rule.



**Figure 23** Number of violations that were addressed with an enforcement action

#### 4.2. Enforcement Targeting Tool (ETT)

In 2009, USEPA implemented a new approach designed to identify public water systems that are in significant non-compliance. An Enforcement Targeting Tool (ETT) was developed to prioritize public water systems that have incurred health-based violations and those that show a history of violations across multiple rules. An ETT score is calculated based on points assigned to the various types of violations, the severity of the violation (e.g., higher points are assigned for violations of drinking water standards associated with acute health effects than those associated with chronic health effects) and the duration of the violation. Public water systems with an ETT score of 11 or greater are prioritized for evaluation of enforcement strategy and resources required to ensure a return to compliance.

DDW coordinates with USEPA to track the ETT scores and has reduced the number of PWS that are identified as significant non-compliers. It was found that many violation records were not routinely updated after a PWS has returned to compliance, and this contributed to high ETT scores. DDW continues to work to ensure accurate and timely updates of inventory data for violations and enforcement actions, so that the ETT score accurately reflects the PWS that are significant non-compliers. Figure 24 shows that DDW is tracking six PWS's with ETT scores of 11 or greater as of April 2019.

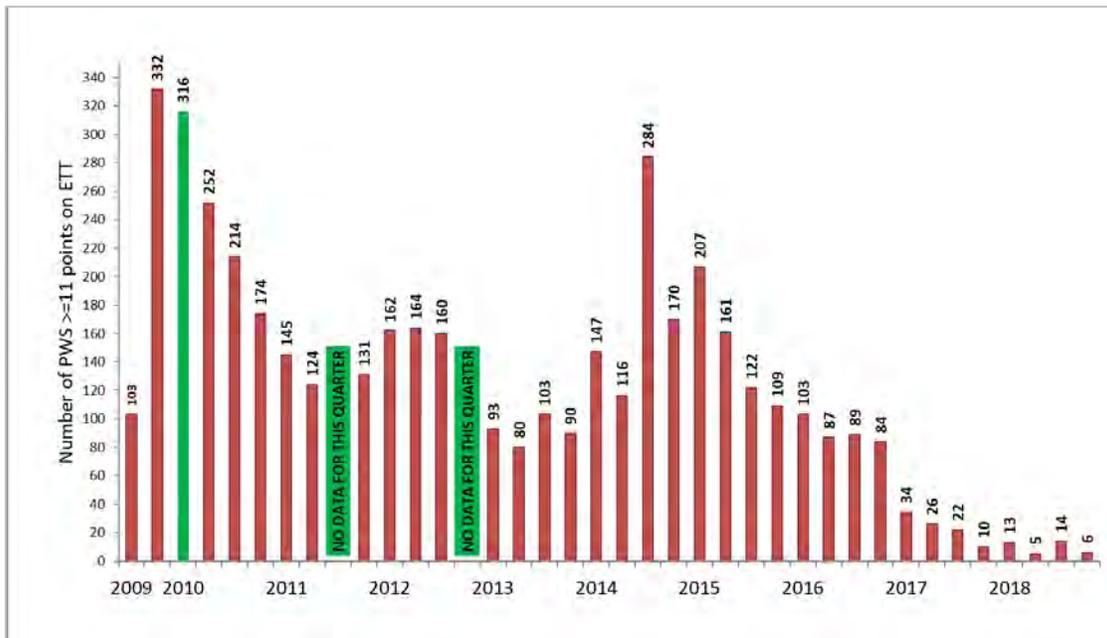


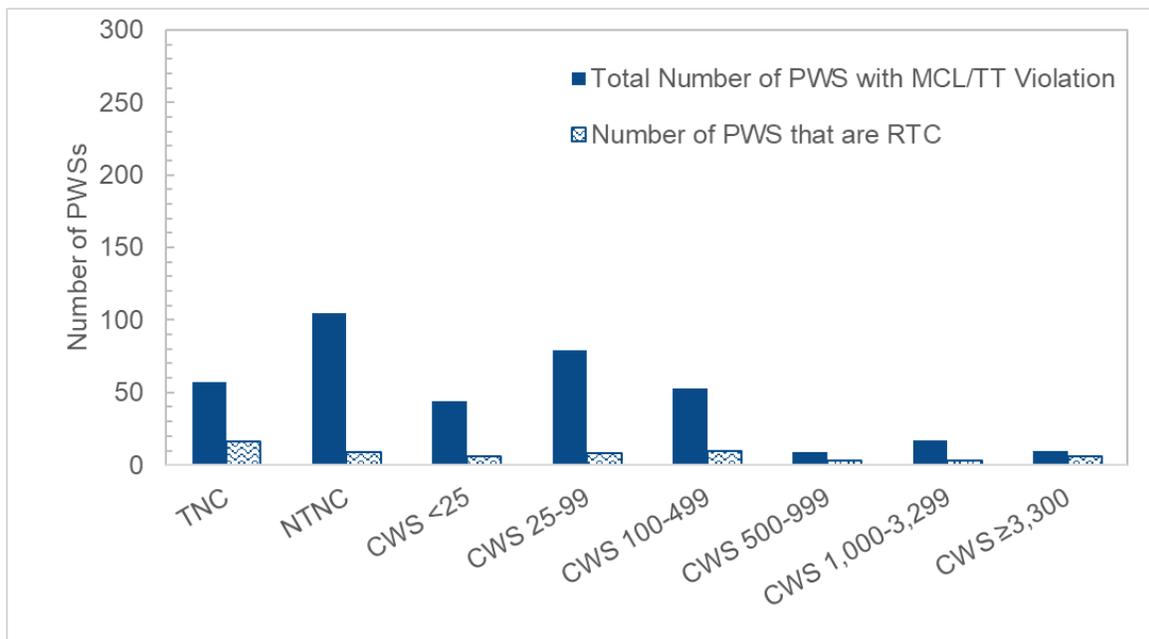
Figure 24 Number of public water systems with an ETT score of 11 or more

### 4.3. Return to Compliance

When a PWS exceeds a drinking water standard, the Drinking Water Program issues enforcement actions that prescribe what must be done in order for the PWS to return to compliance (RTC). The criteria for when RTC is achieved may depend on the rule, type of violation, and contaminant. As an example, for an MCL violation of a chemical with chronic health effects, RTC is achieved when the PWS stops providing water that exceeds the MCL, issues the public notification, and submits the information required in the enforcement action, such as a corrective action plan. PWS may inactivate the source that exceeds the

MCL, provide an alternate source of water that complies with drinking water standards, or provide reliable treatment such that the treated source of supply complies with the MCL. Depending on factors such as the technical, managerial, and financial capacity (TMF) and resiliency of the public water system, the MCL violation can be resolved in a manner of days or it can take years. PWS that remain out of compliance with the MCL are typically required to provide regular public notification and conduct increased monitoring until such time that the PWS returns to compliance with the MCL. Failures to conduct monitoring and public notification resulting from an MCL violation are also considered violations. Many violations on record are not consistently updated in the database even though the violations may have been resolved. DDW continues to work on ways to efficiently conduct data maintenance activities.

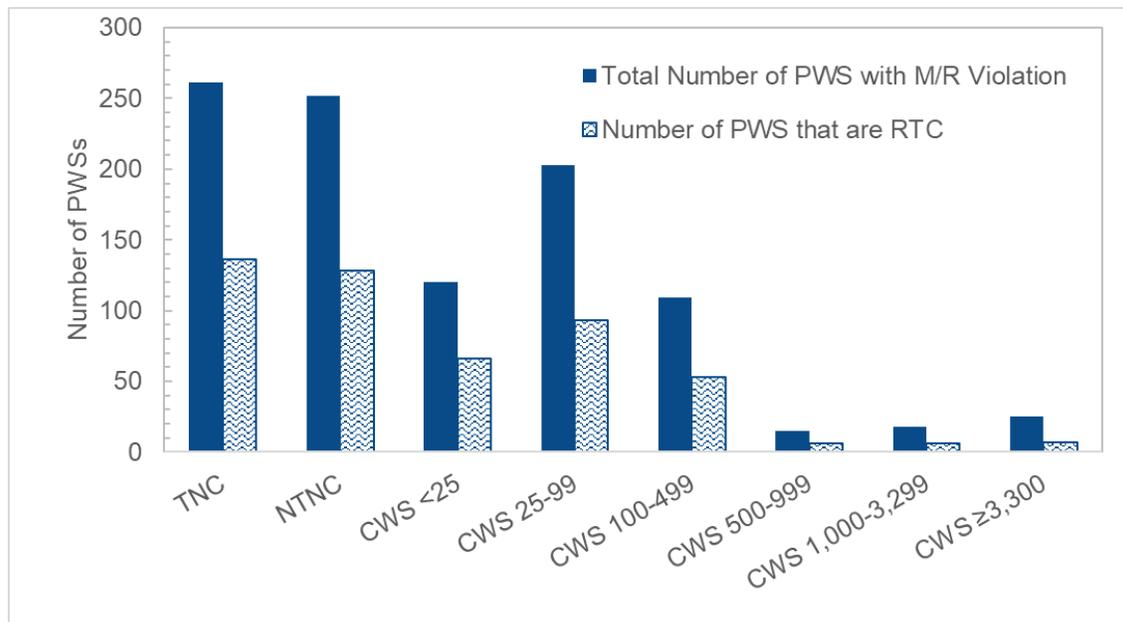
Figure 25 shows the number of PWS of each classification and CWS system size that have returned to compliance following an MCL or TT violation that was incurred in 2018 or incurred in prior years if the violation was RTC'd in 2018.



**Figure 25** Number of PWS that returned to compliance in 2018 for an MCL/TT violation

For monitoring and reporting violations, the criteria for when RTC is achieved is generally when the delinquent samples are collected, when the report is submitted, or when the results reported to the Drinking Water Program. Depending on the rule, RTC can be achieved within a month; for rules such as the Lead and Copper Rule, where sampling must occur in specific periods of the year, delinquent samples may not be collected for several months.

Figure 26 below shows the number of PWS of each classification and CWS system size that have returned to compliance following a monitoring or reporting violation incurred in 2018 or incurred in prior years if the violation was RTC'd in 2018.



**Figure 26** Number of PWS that returned to compliance in 2018 for M/R violations

The rate of RTC is generally higher for monitoring and reporting violations than MCL/TT violations. Often the SDWIS-State records are not regularly updated to reflect when a PWS has returned to compliance for a monitoring violation. DDW recently resumed a limited process across the Drinking Water Program to correct data validation errors and update inventory records, including violations records in SDWIS-State, to ensure that the compliance status of PWS as recorded in SDWIS-State is consistent with the compliance status determined by the local

DDW and LPA staff. DDW continues to work to improve data procedures and data systems in order to ensure timely reporting of accurate compliance information for PWS in SDWIS-State.

## Chapter 5. Conclusion

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The State Water Board is the primacy agency responsible for the administration and enforcement of the SDWA requirements in California. The implementation of the program includes a range of activities and authorities including issuing operating permits, conducting inspections, monitoring for compliance with regulations, and taking enforcement action to compel compliance when violations are identified.

Overall, water systems in California have a high rate of compliance with drinking water standards. However, many public water systems continue to incur water quality violations as a result of contamination of drinking water sources. Arsenic and nitrate continue to impact communities in the state.

The State Water Board continues to track compliance, take enforcement actions to address violations, provide technical assistance to public water systems to address violations, provide funding assistance to public water systems that are capable of undertaking planning or construction projects in order to address violations, and compel public water systems that do not have adequate technical, managerial, and financial capacity to provide reliable and safe drinking water to its customers to consolidate with other public water systems that are able to provide safe drinking water.

### 5.1. Drinking Water Program Compliance Activities for 2019

DDW has planned a number of activities and projects that will ultimately improve the reporting of violations and enforcement actions, improve data quality, as well as assist in returning PWS to compliance after a violation has occurred.

DDW started working on updating the Safe Drinking Water Plan in 2018, and which will be published in 2020. The Safe Drinking Water Plan is a comprehensive assessment of drinking water in California which covers the quality and safety, types of problems that need to be addressed, overall health risks, current and projected costs, and current regulatory programs. The plan will contain specific recommendations to address issues identified and improve the overall quality and safety of California's drinking water.

DDW implemented new initiatives to address unsustainable public water systems, including mandatory water system consolidations and preventative measures to stop the establishment of unsustainable PWS.

DDW's Quality Assurance Section (QAS) continues to improve the quality of data that DDW receives from laboratories and PWS, and the quality of the inventory data that DDW maintains in SDWIS-State. The Data Management Unit within QAS continues to develop tools to increase efficiency in routine data cleanup activities to ensure data quality. The Program Liaison Unit within QAS continues to coordinate with LPAs to ensure accurate and timely reporting of compliance data, and data cleanup.

DDW continues to work on a multi-year project to modernize the SDWA compliance data management system and integrate a multitude of compliance tracking tools into a single enterprise system.

## 5.2. Obtaining a Copy of the Report

The public can access this Annual Compliance Report by visiting DDW's webpage at [https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/Publications.shtml](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Publications.shtml). You may also contact DDW at (916) 449-5577 to obtain a copy of the report.

## 5.3. Human Right to Water Portal

DDW also maintains a public webpage on the compliance status of public water systems, as part of its implementation of the Water Boards resolution on the human right to water. The Human Right to Water Portal [http://waterboards.ca.gov/water\\_issues/programs/hr2w/index.shtml](http://waterboards.ca.gov/water_issues/programs/hr2w/index.shtml) shows how Californians can find out if their public water system is in compliance with the drinking water standards, and how to get in contact with their water system.

## Glossary of Terms

Term	Description
Public Water System (PWS)	A system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or serves at least 25 people for at least 60 days each year.
Community water system (CWS)	A water system serving facilities such as cities, towns, mobile home parks.
Nontransient noncommunity water system (NTNC)	A water system serving facilities such as schools, factories or other facilities that serve the same group of non-resident users at least 180 days out of the year.
Transient noncommunity water system (TNC)	A water system serving facilities such as restaurants, parks, rest stops, campgrounds and other facilities that serve a transient population for at least 60 days out of the year.
Primary Drinking Water Standards	MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.
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. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
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.
Treatment Techniques (TT)	A required process intended to reduce the level of a contaminant in drinking water in lieu of an MCL. For example, treatment techniques have been established for the treatment of surface waters in order to control the levels of viruses, bacteria, and other pathogens.
Variations and Exemptions	State Water Board permission to exceed an MCL or not comply with a TT under certain conditions.
Monitoring and Reporting (M/R)	A water system is required to monitor and verify that the levels of contaminants present in the water do not exceed the MCL. A monitoring violation occurs when a

Term	Description
	water system fails to have its water tested as required or fails to report test results correctly to the regulatory agency.
Secondary Drinking Water Standards	MCLs for contaminants for aesthetics effects, to protect the odor, taste, and appearance of drinking water. Contaminants with secondary MCLs (SMCL) are not considered to present a risk to human health at the SMCL.
Significant Monitoring or Reporting Violations	For this report, significant monitoring or reporting violations are defined as when no samples were taken, or no results were reported
Public Notification	The Public Notification Rule requires all PWS to notify their consumers any time a PWS violated a national primary drinking water regulation or has a situation posing a risk to public health. The time period that a PWS must notify the public depends upon the risk posed by the violation or situation. Notices must be provided to persons served (not just billing consumers).
Significant Public Notification Violations	For this report, a significant public notification violation occurs when a PWS completely fails to notify its consumers that the PWS violated a national primary drinking water regulation or had a situation posing a risk to public health.
Consumer Confidence Report (CCR)	All community water systems and nontransient noncommunity water systems are required to deliver to their customers an annual CCR, summarizing water quality data collected during the year. The report is to include educational material, provide information on the source water(s), levels of any detected contaminants, and any compliance issues with the drinking water regulations.
Significant Consumer Notification Violations	For this report, a significant consumer notification violation is incurred if a community or nontransient noncommunity water system completely fails to provide its customers the required annual CCR.
pCi/L	Picocuries per liter, a measure of radioactivity
ppm	Parts per million, equivalent to about 32 seconds out of a year. Same as milligrams per liter (mg/L)
ppb	Parts per billion, equivalent to about three seconds out of a century. Same as micrograms per liter (ug/L)



## Appendix A: Summary of MCL Violations for Arsenic by County

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Butte	Arsenic	CA0400049	Butte Creek MHP	100	1
Colusa	Arsenic	CA0600008	Colusa Co. WWD #1 – Grimes	381	2
Contra Costa	Arsenic	CA0707615	Doubletree Ranch Water System	49	2
Fresno	Arsenic	CA1000053	Lanare Community Services Dist	660	3
Fresno	Arsenic	CA1000580	Campos Bros. Farms	150	2
Fresno	Arsenic	CA1000584	True Organic Products	40	1
Fresno	Arsenic	CA1000604	Johann Dairy	44	4
Fresno	Arsenic	CA1009051	Cantua Creek Vineyards, IV, LLC.	50	4
Fresno	Arsenic	CA1010039	Caruthers Comm Serv Dist	2503	5
Inyo	Arsenic	CA1400036	Keeler Community Service District	50	4
Inyo	Arsenic	CA1400526	Eastern Sierra College Center - Bishop	280	1
Kern	Arsenic	CA1500378	Maher Mutual Water Company	150	3
Kern	Arsenic	CA1500409	Brock Mutual Water Company	462	1
Kern	Arsenic	CA1500424	Lands of Promise MWC	171	5
Kern	Arsenic	CA1500436	Hungry Gulch MWC	61	5
Kern	Arsenic	CA1500442	Sunset Apartments WS	37	5
Kern	Arsenic	CA1500455	William Fisher Memorial Water Company	56	5

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Kern	Arsenic	CA1500458	R.S. Mutual Water Company	67	2
Kern	Arsenic	CA1500461	Fountain Trailer Park Water	68	5
Kern	Arsenic	CA1500493	El Adobe POA, Inc.	200	3
Kern	Arsenic	CA1500525	Lakeview Ranchos Mutual Water Company	120	5
Kern	Arsenic	CA1500544	Enos Lane Public Utility District	270	2
Kern	Arsenic	CA1500571	Lucky 18 on Rosamond, LLC	73	5
Kern	Arsenic	CA1500585	Oasis Property Owners Association	100	3
Kern	Arsenic	CA1502154	Lakeside School	800	3
Kern	Arsenic	CA1502231	Rosamond School Water System	940	2
Kern	Arsenic	CA1502383	Nord Road Water Association	32	3
Kern	Arsenic	CA1502569	First Mutual Water System	35	5
Kern	Arsenic	CA1502724	Quail Valley Water Dist-Eastside System	75	1
Kern	Arsenic	CA1502744	60th Street Assoc. Water System	39	3
Kern	Arsenic	CA1510001	Arvin Community Services Dist	20850	3
Kern	Arsenic	CA1510002	Boron CSD	2253	2
Kern	Arsenic	CA1510012	Lamont Public Utility Dist	19057	1
Kern	Arsenic	CA1510016	Rand Communities Water District	450	5
Kern	Arsenic	CA1510024	Greenfield County WD	10131	3
Kern	Arsenic	CA1510052	North Edwards WD	600	4
Kings	Arsenic	CA1600008	Central Union Elementary	320	5
Kings	Arsenic	CA1600048	Kettleman City Elementary	350	4
Kings	Arsenic	CA1600050	Central Valley Meat Co Inc	280	5
Kings	Arsenic	CA1600601	KWRA MRF	53	6

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Kings	Arsenic	CA1600605	Baker Commodities Inc.	47	6
Kings	Arsenic	CA1610009	Kettleman City CSD	1450	3
Los Angeles	Arsenic	CA1900038	Lancaster Park Mobile Home Park	61	3
Los Angeles	Arsenic	CA1900100	Mettler Valley Mutual	135	3
Los Angeles	Arsenic	CA1900520	The Village Mobile Home Park	50	3
Los Angeles	Arsenic	CA1900785	Mitchell's Avenue E Mobile Home Park	24	3
Los Angeles	Arsenic	CA1900961	Winterhaven Mobile Estates	56	3
Los Angeles	Arsenic	CA1910246	Land Projects Mutual Water Co.	1500	4
Madera	Arsenic	CA2000550	MD 06 Lake Shore Park	130	2
Madera	Arsenic	CA2000551	MD 07 Marina View Heights	200	4
Madera	Arsenic	CA2010007	Hillview WC-Oakhurst/Sierra Lakes	3818	5
Madera	Arsenic	CA2010012	Hillview Water Co-Raymond	307	4
Merced	Arsenic	CA2400165	Foster Farms Delhi Feedmill Collier Road	135	4
Merced	Arsenic	CA2400248	Yosemite Valley Beef Packing Co Inc	53	5
Merced	Arsenic	CA2400343	Gemperle Egg Ranch	55	9
Merced	Arsenic	CA2410004	City of Livingston	14894	1
Mono	Arsenic	CA2600622	Sierra East HOA	50	3
Mono	Arsenic	CA2610003	Bridgeport PUD	850	3
Monterey	Arsenic	CA2700536	Corral De Tierra Estates WC	45	3
Monterey	Arsenic	CA2700799	Vista Del Toro WS	87	3
Monterey	Arsenic	CA2701221	Washington School WS	250	3

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Monterey	Arsenic	CA2701926	Moro Rd WS #09	210	3
Monterey	Arsenic	CA2702009	Laguna Seca Recreation WS	500	3
Monterey	Arsenic	CA2702030	Cypress Community Church WS	200	3
Monterey	Arsenic	CA2702550	Grange Hall WS	25	3
Riverside	Arsenic	CA3301380	Saint Anthony Trailer Park	300	5
Riverside	Arsenic	CA3303100	Oasis Gardens Water Co.	314	5
San Benito	Arsenic	CA3500823	Best Road MWC	133	4
San Bernardino	Arsenic	CA3600025	Bar-Len MWC	124	4
San Bernardino	Arsenic	CA3600036	Calico Ghost Town	1000	4
San Bernardino	Arsenic	CA3600062	Callier Water System	1000	4
San Bernardino	Arsenic	CA3600196	CSA 70 W-4 Pioneertown	625	4
San Bernardino	Arsenic	CA3600504	Knoll Enterprises	500	3
San Bernardino	Arsenic	CA3601015	Ironwood Camp	1000	4
San Diego	Arsenic	CA3701010	Warner Unified School District	250	2
San Diego	Arsenic	CA3701793	Twin Lakes Resort	200	2
San Luis Obispo	Arsenic	CA4000637	Country Hills Estates	60	4
San Luis Obispo	Arsenic	CA4000750	Rim Rock Water Company	55	4
San Luis Obispo	Arsenic	CA4000774	Pleasant Valley Elementary	100	4
Siskiyou	Arsenic	CA4700585	Junction Elementary School	40	1
Sonoma	Arsenic	CA4910309	CSP-Fort Ross State Park	3500	3
Stanislaus	Arsenic	CA5000033	Cobles Corner	50	4
Stanislaus	Arsenic	CA5000051	Mobile Plaza Park	125	4
Stanislaus	Arsenic	CA5000057	Orchard Village MHP	75	1
Stanislaus	Arsenic	CA5000077	Ceres West MHP	161	4
Stanislaus	Arsenic	CA5000085	Green Run Mobile Estates	100	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Stanislaus	Arsenic	CA5000086	Countryside MHP	60	4
Stanislaus	Arsenic	CA5000218	Country Villa Apts	30	4
Stanislaus	Arsenic	CA5000465	Duarte Nursery Inc Water System	75	1
Stanislaus	Arsenic	CA5000498	Golden State PFT Properties LLC	35	4
Stanislaus	Arsenic	CA5000570	Interstate Truck Center Valley Peterbilt	25	4
Stanislaus	Arsenic	CA5010008	Hughson, City of	6082	5
Stanislaus	Arsenic	CA5010009	Keyes Community Services Dist.	5111	5
Tehama	Arsenic	CA5200550	New Orchard Mobile Home Park LLC	125	1
Tehama	Arsenic	CA5201137	Millstream Mobile Home Park	80	1
Tulare	Arsenic	CA5410009	Pixley Public Util Dist	2716	3
Tulare	Arsenic	CA5410050	Alpaugh Community Services District	1026	3
Tuolumne	Arsenic	CA5500369	Rush Creek Lodge Water System	200	1
Yolo	Arsenic	CA5700508	Old Sugar Mill Winery	50	1

## Appendix B: Summary of MCL Violations for Nitrate and Combined Nitrate-Nitrite by County

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Contra Costa	Nitrate	CA0707557	Neighborhood Church	250	1
Fresno	Nitrate	CA1000625	Dino Mart 1	25	3
Fresno	Nitrate	CA1000112	Fairmont School	483	5
Fresno	Nitrate	CA1000629	Kings River Winery	50	2
Inyo	Nitrate-Nitrite	CA1400070	Sierra Grande Estates Mutual Water Co.	200	1
Kern	Nitrate-Nitrite	CA1500409	Brock Mutual Water Company	462	1
Kern	Nitrate-Nitrite	CA1502699	East Wilson Road Water Company	35	4
Kern	Nitrate-Nitrite	CA1502398	Farmer John Egg Ranch #2	30	4
Kern	Nitrate	CA1502273	Farmland Reserve, Inc.	80	3
Kern	Nitrate-Nitrite	CA1502033	Golden State Vintners-Franzia McFarland	33	3
Kern	Nitrate	CA1502012	Heck Cellars Water System	47	2
Kern	Nitrate-Nitrite	CA1504003	Kern Ridge Growers	95	3
Kern	Nitrate	CA1502327	Kern Valley Airport	49	1
Kern	Nitrate	CA1500464	Lake Isabella KOA Campground	280	5
Kern	Nitrate	CA1500459	Lake of the Woods Mobile Village	82	1
Kern	Nitrate	CA1510023	Lake of the Woods MWC	1103	4
Kern	Nitrate	CA1500401	Mettler County Water District	157	2
Kern	Nitrate	CA1502680	Orange Grove RV Park	204	5

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Kern	Nitrate-Nitrite	CA1503194	Paradise Water System	31	1
Kern	Nitrate	CA1500458	R.S. Mutual Water Company	67	5
Kern	Nitrate	CA1500393	Rainbird Valley Mutual Water Company	238	5
Kern	Nitrate-Nitrite	CA1500575	San Joaquin Estates Mutual Water Company	165	4
Kern	Nitrate-Nitrite	CA1500588	Son Shine Properties	438	3
Kern	Nitrate	CA1500566	Spring Mountain Mutual Water Company	27	3
Kern	Nitrate-Nitrite	CA1500566	Spring Mountain Mutual Water Company	27	1
Kern	Nitrate	CA1503515	Sun Pacific Shippers-Maricopa Water Sys.	100	3
Kern	Nitrate-Nitrite	CA1502017	Wheeler Farms Headquarters	25	4
Kern	Nitrate-Nitrite	CA1500494	Wilson Road Water Community	66	3
Kern	Nitrate	CA1503526	Wini Mutual Water Company	29	1
Kern	Nitrate	CA1504001	Wonderful Nurseries, LLC	250	1
Madera	Nitrate	CA2010012	Hillview Water Co-Raymond	307	5
Madera	Nitrate-Nitrite	CA2000589	Mammoth Pool Mobile Home Park	60	1
Merced	Nitrate	CA2400336	Doreva Produce	36	5
Merced	Nitrate	CA2400231	John B. Sanfilippo & Son, Inc.	100	1
Merced	Nitrate	CA2400335	Olivares Farms Water System	30	5
Merced	Nitrate	CA2400331	Quail H Farms Water System	30	5
Merced	Nitrate	CA2400071	Washington School	190	1
Merced	Nitrate	CA2400333	Yagi Brothers Produce Inc.	46	5
Monterey	Nitrate	CA2701063	River Rd WS #25	65	3

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Monterey	Nitrate	CA2701726	Spence Rd WS #05	25	2
Monterey	Nitrate	CA2700771	Springfield Water Company	200	3
Riverside	Nitrate	CA3301283	Glen Eden Sun Club	200	1
Riverside	Nitrate	CA3301330	Indian Oaks Trailer Park	96	4
Riverside	Nitrate	CA3301529	Ramona Water Company	250	4
Sacramento	Nitrate	CA3400466	Subway Sandwich	100	1
San Bernardino	Nitrate	CA3610850	California Institution for Men	5479	1
San Bernardino	Nitrate	CA3601094	Fuji Natural Food	75	3
San Bernardino	Nitrate	CA3600391	Hillcrest Mobile Estates	900	4
San Bernardino	Nitrate	CA3600768	Institute of Mental Physics	100	4
San Bernardino	Nitrate	CA3600149	Law's Cider Mill	500	1
San Bernardino	Nitrate	CA3601137	Lizze Enterprises	25	3
San Diego	Nitrate	CA3702706	Boulevard Pines Mobile Home and RV Park	25	2
San Diego	Nitrate-Nitrite	CA3700934	Pauma Valley Mutual Water Company	120	2
San Diego	Nitrate-Nitrite	CA3701341	Quiet Oaks Mobile Home Park	120	2
San Diego	Nitrate-Nitrite	CA3702754	Rancho Corrido RV Resort	350	1
San Diego	Nitrate-Nitrite	CA3700936	Rancho Estates Mutual Water Co.	200	2
San Diego	Nitrate	CA3700065	South Bay Rod & Gun Club Inc.	200	4
San Diego	Nitrate-Nitrite	CA3701995	Willowside Terrace Water Association	100	1
San Diego	Nitrate	CA3701408	Yuima Municipal Water District	260	1
San Joaquin	Nitrate	CA3901164	Subtera Water System	150	1
Santa Barbara	Nitrate	CA4200877	Betteravia Gas & Mart	150	1
Santa Barbara	Nitrate	CA4200842	Saint Marie MHP	250	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Santa Clara	Nitrate	CA4300996	Valley View Ranches	45	1
Solano	Nitrate	CA4810033	Hines Nursery Winters South	150	1
Sonoma	Nitrate	CA4901074	Valley Ford Hotel	50	2
Sonoma	Nitrate	CA4900568	Valley Ford Water Association	61	2
Stanislaus	Nitrate	CA5000462	Best Western-Orchard Inn	26	4
Stanislaus	Nitrate	CA5000465	Duarte Nursery Inc Water System	75	1
Stanislaus	Nitrate	CA5000530	Frazier Nut Farms, Inc.	40	1
Stanislaus	Nitrate	CA5000596	Growers Direct Nut Company	25	3
Stanislaus	Nitrate	CA5000426	Liberty Baptist Church	65	4
Stanislaus	Nitrate	CA5000402	Our Lady of Assumption Church	26	4
Stanislaus	Nitrate	CA5000499	Ratto Bros, Inc	100	5
Stanislaus	Nitrate	CA5000295	Shiloh School District	105	4
Stanislaus	Nitrate	CA5000372	Storer Transportation	40	3
Tulare	Nitrate	CA5400810	Akal Travel Plaza	200	1
Tulare	Nitrate	CA5403022	Aptco LLC	150	5
Tulare	Nitrate	CA5403151	Arco Am Pm - Pixley	1000	1
Tulare	Nitrate	CA5400651	Beverly Grand Mutual Water	92	5
Tulare	Nitrate	CA5403211	Booth Ranches LLC	125	5
Tulare	Nitrate	CA5403076	Central Cal Tristeza Erad	28	4
Tulare	Nitrate-Nitrite	CA5400666	Del Oro Grandview Gardens District	347	3
Tulare	Nitrate	CA5401003	East Orosi CSD	700	4
Tulare	Nitrate	CA5403106	Exeter-Ivanhoe Citrus Association	95	5
Tulare	Nitrate	CA5403041	Family Tree Farms	30	3
Tulare	Nitrate	CA5403215	Fresh Select, LLC	30	3

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Tulare	Nitrate	CA5402047	Gleanings for the Hungry	31	5
Tulare	Nitrate	CA5401076	Golden State Vintners Cutler	46	1
Tulare	Nitrate	CA5400994	Hope Elementary School	275	1
Tulare	Nitrate	CA5403048	JD Heiskell Holdings LLC	60	4
Tulare	Nitrate	CA5400548	Kings Inn Motel	207	2
Tulare	Nitrate	CA5400616	Lemon Cove Water Co	109	4
Tulare	Nitrate	CA5402043	Monson Market	30	5
Tulare	Nitrate	CA5403053	NS Mini Mart	140	5
Tulare	Nitrate	CA5400987	Old Stage Saloon	25	2
Tulare	Nitrate	CA5400636	Orosi High School	1200	1
Tulare	Nitrate	CA5403122	PC's Food Mart	500	1
Tulare	Nitrate	CA5403205	Pena's Disposal Services	84	5
Tulare	Nitrate	CA5400541	Porterville Citrus Rayo	100	5
Tulare	Nitrate	CA5403013	Prince Mart	53	2
Tulare	Nitrate	CA5400735	Rodriguez Labor Camp	110	5
Tulare	Nitrate	CA5400558	Saucelito Elementary School	98	5
Tulare	Nitrate	CA5400709	Sequoia Union School	400	5
Tulare	Nitrate	CA5403110	Sierra Mutual Water Co	37	4
Tulare	Nitrate	CA5400964	Sierra Vista Assn	44	5
Tulare	Nitrate	CA5402013	Sun Pacific Shippers LP - Exeter	200	4
Tulare	Nitrate	CA5403039	Teapot Dome Water Co	39	2
Tulare	Nitrate	CA5403105	The Barn	200	5
Tulare	Nitrate	CA5400670	Triple R Mutual Water Co	406	5
Tulare	Nitrate	CA5403046	Visalia Citrus Packing-Orange Cove	70	5

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Tulare	Nitrate	CA5402046	Waterman Valve, LLC	127	3
Tulare	Nitrate	CA5400795	Waukena Elementary School	245	5
Tulare	Nitrate	CA5402030	Waukena Market	100	5
Ventura	Nitrate	CA5610029	Vineyard Avenue Acres MWC	1820	1
Yolo	Nitrate	CA5700623	Davis JUSD - Fairfield School	65	1
Yolo	Nitrate	CA5700757	Grassland Park Host Well (Old Yolo Bowme	50	1

## Appendix C: Summary of MCL Violations for 1,2,3-TCP by County

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Butte	1,2,3-Trichloropropane	CA0400028	Big Bend Mobile Home Park	85	1
Butte	1,2,3-Trichloropropane	CA0400063	Manzanita Elementary School	295	1
Butte	1,2,3-Trichloropropane	CA0400081	Feather Ridge Estates Water Co	12	1
Butte	1,2,3-Trichloropropane	CA0400042	Forest Village LLC	34	1
Fresno	1,2,3-Trichloropropane	CA1000112	Fairmont School	483	1
Fresno	1,2,3-Trichloropropane	CA1000206	Houghton-Kearney School	310	1
Fresno	1,2,3-Trichloropropane	CA1000580	Campos Bros. Farms	150	1
Fresno	1,2,3-Trichloropropane	CA1010039	Caruthers Comm Serv Dist	2503	1
Fresno	1,2,3-Trichloropropane	CA1000221	Washington Union High School	1000	1
Fresno	1,2,3-Trichloropropane	CA1010001	Bakman Water Company	16756	1
Fresno	1,2,3-Trichloropropane	CA1000593	Vie-Del Company	60	4
Fresno	1,2,3-Trichloropropane	CA1000479	Franzia Winery-Sanger	48	1
Fresno	1,2,3-Trichloropropane	CA1000299	Three Palms Mobilehome Park	300	1
Fresno	1,2,3-Trichloropropane	CA1000473	Belmont Country Club	150	1
Fresno	1,2,3-Trichloropropane	CA1000496	Copper River Country Club	125	1
Fresno	1,2,3-Trichloropropane	CA1000187	Indianola School	511	1
Fresno	1,2,3-Trichloropropane	CA1000533	Three Crowns Industrial Park, Inc.	25	1
Fresno	1,2,3-Trichloropropane	CA1000279	U.C. Kearney Field Station	250	1
Fresno	1,2,3-Trichloropropane	CA1000411	O'Neill Vintners & Distillers	90	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Fresno	1,2,3-Trichloropropane	CA1000248	Double L Mobile Ranch Park	80	1
Fresno	1,2,3-Trichloropropane	CA1000180	Alta Elementary School	390	1
Fresno	1,2,3-Trichloropropane	CA1000023	FCSA #14/Belmont Manor	115	1
Fresno	1,2,3-Trichloropropane	CA1000541	Fresno Valves & Castings	190	2
Fresno	1,2,3-Trichloropropane	CA1000199	Alice Manor	46	2
Fresno	1,2,3-Trichloropropane	CA1000316	Kings Canyon High School	120	1
Fresno	1,2,3-Trichloropropane	CA1000486	Lion Raisins Packing Company	80	1
Fresno	1,2,3-Trichloropropane	CA1000566	Foster Farms - Cedar Hatchery	35	2
Fresno	1,2,3-Trichloropropane	CA1000562	Southwest Transportation Agency	25	2
Fresno	1,2,3-Trichloropropane	CA1010035	Del Rey Community Serv Dist	1500	1
Fresno	1,2,3-Trichloropropane	CA1000383	Guardian Industries Llc	291	1
Fresno	1,2,3-Trichloropropane	CA1010006	City of Fowler	5801	1
Fresno	1,2,3-Trichloropropane	CA1000004	Belmont Water Corporation	264	1
Fresno	1,2,3-Trichloropropane	CA1000204	American Union School	250	1
Fresno	1,2,3-Trichloropropane	CA1010025	City of Parlier	12058	1
Fresno	1,2,3-Trichloropropane	CA1000196	Riverview School	469	1
Fresno	1,2,3-Trichloropropane	CA1010019	Kingsburg, City of	11504	1
Kern	1,2,3-Trichloropropane	CA1500401	Mettler County Water District	157	1
Kern	1,2,3-Trichloropropane	CA1500409	Brock Mutual Water Company	462	3
Kern	1,2,3-Trichloropropane	CA1500494	Wilson Road Water Community	66	3
Kern	1,2,3-Trichloropropane	CA1500575	San Joaquin Estates Mutual Water Company	165	3
Kern	1,2,3-Trichloropropane	CA1500588	Son Shine Properties	438	3
Kern	1,2,3-Trichloropropane	CA1502012	Heck Cellars Water System	47	3
Kern	1,2,3-Trichloropropane	CA1502017	Wheeler Farms Headquarters	25	3

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Kern	1,2,3-Trichloropropane	CA1502229	Rio Bravo Greeley School Water System	887	3
Kern	1,2,3-Trichloropropane	CA1502273	Farmland Reserve, Inc.	80	2
Kern	1,2,3-Trichloropropane	CA1502699	East Wilson Road Water Company	35	3
Kern	1,2,3-Trichloropropane	CA1503194	Paradise Water System	31	3
Kern	1,2,3-Trichloropropane	CA1504001	Wonderful Nurseries, LLC	250	3
Kern	1,2,3-Trichloropropane	CA1504003	Kern Ridge Growers	95	2
Kern	1,2,3-Trichloropropane	CA1510012	Lamont Public Utility Dist	19057	3
Kern	1,2,3-Trichloropropane	CA1502066	Delano Grower S Grape Products	41	2
Kern	1,2,3-Trichloropropane	CA1504000	Famoso Nut Company	35	1
Kern	1,2,3-Trichloropropane	CA1510013	Mcfarland, City of	15105	1
Kern	1,2,3-Trichloropropane	CA1503669	North Kranenburg WS	33	1
Kern	1,2,3-Trichloropropane	CA1504004	Blossom Valley Organics South	45	1
Kern	1,2,3-Trichloropropane	CA1503653	M & L Cold Storage Water System	50	1
Kern	1,2,3-Trichloropropane	CA1503349	Wm. Bolthouse Farms, Inc.	2437	1
Kern	1,2,3-Trichloropropane	CA1503475	Western Acres Mutual Water Company	310	3
Kern	1,2,3-Trichloropropane	CA1502164	Llanas Camp Four Water System	54	3
Kern	1,2,3-Trichloropropane	CA1510801	Wasco St. Prison Reception Ctr	4857	2
Kern	1,2,3-Trichloropropane	CA1510021	Wasco, City of	22690	3
Kern	1,2,3-Trichloropropane	CA1500344	South Kern Mutual Water Company	32	2

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Kern	1,2,3-Trichloropropane	CA1503093	Grimmway Enterprises-Malaga Water System	1200	3
Kern	1,2,3-Trichloropropane	CA1500296	Fuller Acres Mutual Water Company	545	2
Kern	1,2,3-Trichloropropane	CA1500555	Mustang Mutual Water System	200	2
Kern	1,2,3-Trichloropropane	CA1500584	Gooselake Water Company	90	1
Kern	1,2,3-Trichloropropane	CA1503209	Superior Mutual Water Company	61	2
Kern	1,2,3-Trichloropropane	CA1510006	East Niles CSD	31772	3
Kern	1,2,3-Trichloropropane	CA1502133	V Lions Ops Water System	35	1
Kern	1,2,3-Trichloropropane	CA1510005	Delano, City of	56623	2
Kern	1,2,3-Trichloropropane	CA1503290	The Garlic Company	120	3
Kern	1,2,3-Trichloropropane	CA1500231	Victory Mutual Water Company	849	3
Kern	1,2,3-Trichloropropane	CA1500597	Grimmway Farms- Frozen Foods	300	3
Kern	1,2,3-Trichloropropane	CA1500289	Athal Mutual Water System	150	2
Kern	1,2,3-Trichloropropane	CA1502581	Sunview Cold Storage Water System	130	1
Kern	1,2,3-Trichloropropane	CA1500546	Harvest Moon Mutual Water Co	138	2
Kern	1,2,3-Trichloropropane	CA1503336	Golden Empire Concrete Company	58	2
Kern	1,2,3-Trichloropropane	CA1510019	Shafter, City of	19100	3
Kern	1,2,3-Trichloropropane	CA1500314	Del Oro WC - Country Estates Dist	297	3
Los Angeles	1,2,3-Trichloropropane	CA1910020	East Pasadena Water Co.	11004	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Madera	1,2,3-Trichloropropane	CA2000647	John Hovannisian Water System	80	1
Merced	1,2,3-Trichloropropane	CA2400165	Foster Farms Delhi Feedmill Collier Road	135	1
Merced	1,2,3-Trichloropropane	CA2400331	Quail H Farms Water System	30	5
Merced	1,2,3-Trichloropropane	CA2400333	Yagi Brothers Produce Inc.	46	5
Merced	1,2,3-Trichloropropane	CA2400336	Doreva Produce	36	5
Merced	1,2,3-Trichloropropane	CA2400343	Gemperle Egg Ranch	55	3
Merced	1,2,3-Trichloropropane	CA2410004	City of Livingston	14894	5
Merced	1,2,3-Trichloropropane	CA2410001	City of Atwater	31235	5
Merced	1,2,3-Trichloropropane	CA2400218	Foster Farms Fertilizer Plant	48	4
Merced	1,2,3-Trichloropropane	CA2400084	Evergreen Mobile Home Park	36	4
Merced	1,2,3-Trichloropropane	CA2400167	Ballico CSD	238	5
Merced	1,2,3-Trichloropropane	CA2400232	A V Thomas Produce, Inc.	212	3
Merced	1,2,3-Trichloropropane	CA2400255	Classic Yam Water System	60	5
Merced	1,2,3-Trichloropropane	CA2400226	Harris Woolf Almonds-Ballico	65	1
Merced	1,2,3-Trichloropropane	CA2400079	Mcswain Elementary School	950	5
Merced	1,2,3-Trichloropropane	CA2400013	Sensient Natural Ingredients LLC	400	5
Merced	1,2,3-Trichloropropane	CA2400099	Grace Mennonite School	100	3
Merced	1,2,3-Trichloropropane	CA2400162	Hughson Nut Inc. - Livingston	120	5
Merced	1,2,3-Trichloropropane	CA2410010	Winton Water & Sanitary Dist	8500	5
Merced	1,2,3-Trichloropropane	CA2400011	Dole Atwater Plant	1500	5
Merced	1,2,3-Trichloropropane	CA2400097	Cressey School	155	5
Riverside	1,2,3-Trichloropropane	CA3301577	CSA 62	700	4

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
San Bernardino	1,2,3-Trichloropropane	CA3610850	California Institution for Men	5479	1
San Joaquin	1,2,3-Trichloropropane	CA3900983	Cherry Lane Trailer Park	100	1
San Joaquin	1,2,3-Trichloropropane	CA3900624	West Lane Mobile Home Park	160	1
San Joaquin	1,2,3-Trichloropropane	CA3900797	Escalon Premier Brands	300	1
San Joaquin	1,2,3-Trichloropropane	CA3901035	Lodi USD-Henderson School	200	1
San Joaquin	1,2,3-Trichloropropane	CA3901414	Mclaughlin Waste Equipment Inc	25	1
San Joaquin	1,2,3-Trichloropropane	CA3901169	MUSD-Nile Garden School	804	1
San Joaquin	1,2,3-Trichloropropane	CA3900978	SJ County-Redwood School	83	1
San Joaquin	1,2,3-Trichloropropane	CA3901337	Morada Estates N PWS #46	180	1
San Joaquin	1,2,3-Trichloropropane	CA3910014	San Joaquin County-Raymus Village	1086	1
San Joaquin	1,2,3-Trichloropropane	CA3901425	Morada Produce	25	1
San Joaquin	1,2,3-Trichloropropane	CA3910005	Manteca, City of	80038	5
Santa Cruz	1,2,3-Trichloropropane	CA4400665	Meadowridge Mutual Water Co	42	3
Stanislaus	1,2,3-Trichloropropane	CA5000033	Cobles Corner	50	1
Stanislaus	1,2,3-Trichloropropane	CA5010008	Hughson, City of	6082	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Stanislaus	1,2,3-Trichloropropane	CA5010009	Keyes Community Services Dist.	5111	5
Stanislaus	1,2,3-Trichloropropane	CA5010019	Turlock, City of	72050	1
Stanislaus	1,2,3-Trichloropropane	CA5010028	Ceres, City of	47754	1
Stanislaus	1,2,3-Trichloropropane	CA5010018	Riverbank, City of	23734	1
Stanislaus	1,2,3-Trichloropropane	CA5010007	Hillsview Homes	887	4
Tulare	1,2,3-Trichloropropane	CA5400558	Saucelito Elementary School	98	3
Tulare	1,2,3-Trichloropropane	CA5400735	Rodriguez Labor Camp	110	2
Tulare	1,2,3-Trichloropropane	CA5400964	Sierra Vista Assn	44	5
Tulare	1,2,3-Trichloropropane	CA5401003	East Orosi CSD	700	1
Tulare	1,2,3-Trichloropropane	CA5401076	Golden State Vintners Cutler	46	5
Tulare	1,2,3-Trichloropropane	CA5402046	Waterman Valve, LLC	127	1
Tulare	1,2,3-Trichloropropane	CA5403041	Family Tree Farms	30	4
Tulare	1,2,3-Trichloropropane	CA5403211	Booth Ranches LLC	125	5
Tulare	1,2,3-Trichloropropane	CA5410009	Pixley Public Util Dist	2716	2
Tulare	1,2,3-Trichloropropane	CA5410015	Tulare, City of	65982	4
Tulare	1,2,3-Trichloropropane	CA5403138	Brandt Farms, Inc	100	2
Tulare	1,2,3-Trichloropropane	CA5403080	Legacy Packing	125	5
Tulare	1,2,3-Trichloropropane	CA5400553	Del Oro Traver District	740	2
Tulare	1,2,3-Trichloropropane	CA5400844	Elbow Creek School	530	4
Tulare	1,2,3-Trichloropropane	CA5400641	Teviston CSD	343	5
Tulare	1,2,3-Trichloropropane	CA5410024	Richgrove Community Services District	1617	1
Tulare	1,2,3-Trichloropropane	CA5403081	Peters Fruit Farms, Inc	125	5
Tulare	1,2,3-Trichloropropane	CA5403102	New Leaf Cold Storage	30	1
Tulare	1,2,3-Trichloropropane	CA5400903	Tract 92 CSD	500	1

County	Contaminant	PWS ID	PWS Name	Population Served	Number of Violations
Tulare	1,2,3-Trichloropropane	CA5403140	Monarch Nut Co	400	4
Tulare	1,2,3-Trichloropropane	CA5400711	Sierra View Jr Academy	104	5
Tulare	1,2,3-Trichloropropane	CA5403144	Ali Mutual Water Co	25	2
Tulare	1,2,3-Trichloropropane	CA5400792	Woodville Farm Labor Center	695	4
Tulare	1,2,3-Trichloropropane	CA5410021	Earlimart PUD	8800	1
Tulare	1,2,3-Trichloropropane	CA5410017	London Community Serv Dist	2138	2
Tulare	1,2,3-Trichloropropane	CA5401004	Styrotek, Inc.	36	5
Sutter	1,2,3-Trichloropropane	CA5105006	Yuba City USD Transportation Yard	75	1