NOTE: This publication is meant to be an aid to the staff of the CDHS Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law. Refer to the published codes whenever specific citations are required.

California Regulations Related to Drinking Water

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TITLE 22
DIVISION 4. ENVIRONMENTAL HEALTH
CHAPTER 1. INTRODUCTION
Article 1. Definitions
§60001. Department.
Whenever the term "department" is used in this division, it means the State Department of Health Services, unless otherwise specified.

§60003. Director.
Whenever the term "director" is used in this division, it means the Director, State Department of Health Services, unless otherwise specified.

CHAPTER 4. WATER TREATMENT DEVICES
Article 1. Definitions
§60400. Certification.
"Certification" means that a water treatment device or a treatment component used in water treatment devices has met the testing requirements specified in section 60435 or the testing requirements accepted by the Department pursuant to section 4057.1(c) 1of the Health and Safety Code as defined in section 60440.

§60401. Health and Safety Claim.
(a) "Health or Safety Claim" means one or more of the following:
(1) Any claim that the water treatment device or treatment component will remove or reduce a contaminant for which a primary drinking water standard as defined in Health and Safety Code section 4010.1 2or a treatment requirement as authorized in sections 4023.1(c) 3and 4023.3(d) 4of the Health and Safety Code has been established.
Any claim that the water treatment device or treatment component will remove or reduce a contaminant for which a national primary drinking water standard or treatment requirement has been established under the U.S. Safe Drinking Water Act (PL 93-523 and as amended under PL 99-339) (42 U.S.C. section 3OOg-1).
(2) Any claim that the water treatment device or treatment component will remove or reduce a contaminant which has been determined to present a health risk by the United States Environmental Protection Agency pursuant to sections 1445(a)(2) and 1445(a)(3) of the U.S. Safe Drinking Water Act (PL 93-523 and as amended under PL 99-339) (42 U.S.C. section 300j-4(a)(2) and (a)(3)).

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1 Section 4057.1(c) has been recodified to 116830(c). OAL has been notified of this by request for a "change without regulatory effect".
2 Section 4010.1 has been recodified to 116275. OAL has been notified of this by request for a "change without regulatory effect".
3 Section 4023.1(c) has been recodified to 116365(c). OAL has been notified of this by request for a "change without regulatory effect".
4 Section 4023.3(d) has been recodified to 116375(d). OAL has been notified of this by request for a "change without regulatory effect".

§60402. Independent Laboratory.
"Independent Laboratory" means a laboratory that is neither owned or operated by the manufacturer or an entity which is a parent or subsidiary company to the manufacturer of a water treatment device or treatment component nor is in a partnership with the manufacturer or entity which is a parent or subsidiary company to the manufacturer.

§60403. Manufacturer.
(a) "Manufacturer" means any person, as defined by section 4057(c) 5of the California Health and Safety Code, that makes, converts, constructs, or produces water treatment devices or treatment components for the purpose of sale, lease or rent to individuals, corporations, associations, or other entities. Manufacturer also includes:

(1) Persons that assemble water treatment devices or treatment components from components manufactured by another entity.

(2) Persons who add their own product name or product identification to water treatment devices or treatment components which have been manufactured or assembled by another entity.

§60404. Recognized Testing Organization.
"Recognized Testing Organization" means an independent laboratory which has been accredited by the Department pursuant to Health and Safety Code, division 1, part 2, chapter 7.5, section 1010 et seq.

§60405. Testing Requirements.
"Testing Requirements" means the contaminant reduction and general performance requirements pursuant to section 60435.

§60406. Modification.
"Modification" means any change made to a certified water treatment device or certified treatment component which may affect its performance in meeting the testing requirements or an change in the health or safety claims made with respect to the certified water treatment device or certified treatment component.

Article 2. Certification Requirements

§60407. Certification Period.
The certification shall be valid for one year and shall be renewable for a period not to exceed five years.

Article 3. Application Requirements

§60410. Certification Application.
(a) Application for certification shall be submitted by the manufacturer for each water treatment device or treatment component.

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5 Section 4057(c) has been recodified to 116825(c). OAL has been notified of this by request for a "change without regulatory effect".

(b) A completed application shall include the following:

(1) Applicant business name, address, and phone number.

(2) A contact person, address, and phone number.

(3) The identification of each and every specific contaminant for each and every health or safety claim which is made for the water treatment device or treatment component.

(4) Product design specifications and engineering information including blueprints or similar drawing which will provide detailed information about the construction of the water treatment device and treatment components.

(5) Parts list for the water treatment device or treatment component.

(6) Test data and verification as prescribed by section 60435, 60445, 60450 or 60455.

(7) A list of all names, model numbers, or other product identifications which are used by the manufacturer to describe the water treatment device or treatment component.

(8) A statement containing the following declaration by the manufacturer: "This water treatment device or treatment component, which is identified as (insert name, model number, or other product identification) has been toxicologically reviewed and tested to verify that no substances are contributed by the unit to the treated water at levels that would adversely affect the health of the users. The toxicological review and testing was conducted pursuant to the requirements of the material review and qualifications procedures contained in the appropriate testing standard referenced in Table I of section 60435 or Table II of section 60450".

(9) The application shall be signed by a person in a principal management position.

§60415. Certification Renewal.

(a) A completed application for renewal of a certification shall be submitted by the manufacturer. A completed application shall include the following:

(1) Applicant business name, address, and phone number.

(2) A contact person, address, and phone number.

(3) A written statement that identifies any change to the information provided as described in section 60410(b)(7) and (8) or changes to section 60410(b)(4) and (5) which do not constitute modifications.

(4) The application shall be signed by a person in a principal management position.

(b) The manufacturer shall be responsible for making application for renewal of a certification at least 30 days prior to the expiration date. If the application is submitted after that date, a late application penalty must be paid.

(c) In the event that the application for renewal of the certification is denied by the department, the manufacturer will be notified by registered mail of the denial and the reasons for the denial. The manufacturer may appeal the denial in accordance with Government Code, title 2, division 3, chapter 5, section 11500 et seq. The registered letter providing notice of the denial will be considered the accusation within the appeal process.

§60425. Modification of a Certification.

(a) Any modification made to a certified water treatment device or certified treatment component without the written approval of the Department shall void the certification.

(b) Application to modify an existing certification shall be submitted by the manufacturer. A completed application for the modification of a certified water treatment device or certified treatment component shall include the following:

(1) Applicant business name, address, and telephone number.

(2) Name of a contact person, address, and telephone number.

(3) A statement of the reasons for the modification(s).

(4) A description of the modification(s) to the certified water treatment device or certified treatment component such as changes in the health or safety claims; changes in treatment components; changes in parts which are in direct contact with the influent or product water; or changes to parts which affect the treatment process or product safety

(6) Changes to the parts list provided pursuant to section 60410(b)(5).

(7) Changes to the product design, specifications and engineering information including blueprints or similar drawings provided pursuant to section 60410(b)(4).

(8) Changes to the list of names, model numbers, or other product identifications provided pursuant to section 60410(b)(7).

(9) A statement containing the following declaration by the manufacturer: "This water treatment device or treatment component, which is identified as (insert name, model number, or other product identification) has been to toxicologically reviewed and tested to verify that no substances are contributed by the unit to the treated water at levels that would adversely affect the health of the users. The toxicological review and testing was conducted pursuant to the requirements of the material review and qualifications procedures contained in the appropriate testing standard referenced in Table I of section 60435 or Table II of section 60450."

(10) The application shall be signed by a person in a principal management position.

§60430. Processing Time.

(a) Within 45 calendar days of receipt of an application for certification, or modification of a certified water treatment device or certified treatment component, the Department shall inform the applicant in writing that the application is complete and accepted for filing, or that it is incomplete and what specific information is needed.

(b) Within 90 calendar days from the date of filing a completed application for certification or modification of a certified water treatment device or certified treatment component, the Department shall inform the applicant in writing of its decision.

(c) Within 30 calendar days of receipt of an application for renewal of certification, the Department shall inform the applicant in writing that the application is complete and accepted for filing, or that it is incomplete and what specific information is needed.

(d) Within 30 calendar days of receipt of a completed application for the renewal of certification, the Department shall inform the applicant in writing that certification has or has not been extended.

Article 4. Testing and Testing Protocols

§60435. Testing and Testing Protocols.

(a) To be considered for certification, a water treatment device or treatment component shall be tested and found to meet the requirements set forth in Table I.

(b) The testing shall be conducted:
  (1) By a recognized testing organization; or
  (2) By a manufacturer pursuant to section 60445.

(c) All contaminant reduction and general performance testing shall be conducted by a laboratory which has been accredited by the Department pursuant to Health and Safety Code, division 1, part 2, chapter 7.5, section 1010 et seq. Test data submitted pursuant to section 60450 are exempt from this provision.

Table I
Testing Requirements

		TESTING PROTOCOLS	
Treatment Process	*Reference Standard*	*Contaminant Reduction Requirements (Sections)*	*General Performance Requirements (Sections)*
Mechanical Filtration	NSF Standard 53[1]	5.2, 5.2.1, 5.3, 5.3.1, 5.3.2	4.2, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4
Activated Carbon		5.3.3	5.5
Reverse Osmosis	NSF Standard 58[2]	5.3, 5.4, 5.4.1, 5.4.2, 5.4.3	4.1, 4.7.2, 4.7.3
Cation Exchange	NSF Standard 44[3]	5.2, 5.2.1	4.3
Distillation	NSF Standard 62[4]	5.1, 5.2, 5.3	4.21, 4.5, 4.5.1, 4.5.2, 4.5.2.1, 5.4

Notes: [1]National Sanitation Foundation Standard 53, Drinking Water Treatment Units Health Effects, June 1988.
[2]National Sanitation Foundation Standard 58, Reverse Osmosis Drinking Water Treatment Systems, November 1986.
[3]National Sanitation Foundation Standard 44, Cation Exchange Water Softeners, December 1987.
[4]National Sanitation Foundation Standard 62, Drinking Water Distillation Systems, May 1989.

§60440. Manufacturer's Testing Protocols.

(a) Whenever the testing requirements of Table I of section 60435 are not applicable for the treatment process or the specific contaminant for which certification is requested, the applicant shall submit proposed testing protocols to the Department for approval prior to the testing of the water treatment device or treatment component.

(b) The proposed testing protocols shall include the following:

(1) Testing shall be conducted in duplicate.

(2) Testing shall be conducted under pressure and flow conditions typical of the end use of the water treatment device or treatment component.

(3) Testing shall provide an equivalent level of assurance that the performance of a water treatment device or treatment component is consistent with the performance of those water treatment or treatment components devices which are tested against the testing requirements prescribed in Table I of section 60435.

§60445. Manufacturer's Test Data.

(a) Test data developed by a manufacturer and submitted to the Department pursuant to the provisions of section 60435(b)(2) shall meet all of the following requirements:

(1) The data was obtained using the testing requirements prescribed in section 60435 or the testing requirements accepted by the Department pursuant to section 4057.1(c) 6of the Health and Safety Code as defined in section 60440.

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6 Section 4057.1(c) has been recodified to 116380(c). OAL has been notified of this by request for a "change without regulatory effect".

(2) The data was produced by a laboratory which is wholly owned by the manufacturer of the water treatment device or treatment component.

(3) The manufacturer has complied with the Department's request for information regarding the qualifications of the laboratory staff, laboratory equipment used for testing and analysis, and records related to the testing under review.

(4) The manufacturer's laboratory has been inspected by the Department's staff under a cost reimbursement agreement to recover the cost incurred to make the inspection(s).

(5) The manufacturer has performed replicate testing, as specified by the Department, during the on-site inspection. Such testing shall be required when test data submitted pursuant to this section is incomplete or there is reasonable doubt regarding the ability of the treatment process to remove or reduce one or more of the specific contaminants tested.

§60450. Prior Test Data.

When a manufacturer submits prior test data to satisfy the requirements of section 60410(b)(6), the manufacturer shall demonstrate that any test data developed before September 1, 1990 was developed by an independent laboratory or by a manufacturer's laboratory; and that the test data was developed using a testing protocol that was consistent with the applicable testing requirements set forth in Table II. All test data considered by the Department pursuant to this paragraph shall have been produced from testing that was conducted after January 1, 1983.

Table II
Testing Requirements for Prior Data

		TESTING PROTOCOLS	
Treatment Process	*Reference Standard*	*Contaminant Reduction Requirements (Sections)*	*General Performance Requirements (Sections)*
Mechanical Filtration	NSF Standard 53[1]	5.2, 5.2.1, 5.3, 5.3.1, 5.3.2	4.2, 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.4
Activated Carbon		5.3.3	5.5
Reverse Osmosis	NSF Standard 58[2]	5.3, 5.4, 5.4.1, 5.4.2, 5.4.3	4.1, 4.7.2, 4.7.3
Cation Exchange	NSF Standard 44[3]	5.2, 5.2.1	4.3
Distillation	NSF Standard 62[4]	5.1, 5.2, 5.3	4.21, 4.5, 4.5.1, 4.5.2, 4.5.2.1, 5.4

Notes: [1] National Sanitation Foundation Standard 53, Drinking Water Treatment Units Health Effects, June 1988.
[2] National Sanitation Foundation Standard 58, Reverse Osmosis Drinking Water Treatment Systems, November 1986.
[3] National Sanitation Foundation Standard 44, Cation Exchange Water Softeners, December 1987.
[4] National Sanitation Foundation Standard 62, Drinking Water Distillation Systems, May 1989.

§60455. Extrapolation of Data.

(a) Where a manufacturer has several water treatment devices or treatment components each using the same treatment technology and they are of similar construction, the manufacturer may submit test data developed pursuant to section 60435 or the manufacturer's testing protocol accepted by the Department pursuant to section 4057.1(c) 7 of the Health and Safety Code, as defined in section 60440, on one water treatment device or treatment component as representative of the others under the following conditions:

(1) The manufacturer submits evidence that extrapolation will provide test data that is reasonably consistent with empirical data that would be obtained from the actual testing of the water treatment device or treatment component.

(2) Extrapolation is limited to the scaling or down in size as measured by the volume of product water produced or volume of water to be treated.

(3) Scaling up shall be limited to three times greater than the size of the representative water treatment device or treatment component.

(4) Scaling down shall be limited to one third the size of the representative water treatment device or treatment component.

§60460. Retesting.

(a) The manufacturer shall retest each certified water treatment device or certified treatment component every five years from the date of certification to insure continued compliance with

7 Section 4057.1(c) has been recodified to 116380(c). OAL has been notified of this by request for a "change without regulatory effect".

this chapter and shall submit the results to the Department along with the application for recertification.

(b) The manufacturer shall retest a certified water treatment device or certified treatment component for the reduction of a contaminant or for a general performance requirement when the Department determines through testing pursuant to section 60435 or the manufacturer's testing protocol accepted by the Department pursuant to section 4057.1 of the Health and Safety Code, as defined in section 60440, that the water treatment device or treatment component is not meeting a requirement when the water treatment device or treatment component is used according to the manufacturer's instructions. The manufacturer shall comply with the following requirements when retesting pursuant to this paragraph:

(1) Retesting pursuant to subsection (b) shall be conducted by a recognized testing organization in accordance with section 60435 or the manufacturer's testing protocol and shall be initiated within three months of notification by registered mail of the Department's determination.

(2) The results of retesting shall be submitted to the Department within 60 days of initiating the testing.

(3) The results of retesting shall be in conformance with section 60435 or the manufacturer's testing protocol. Manufacturers of certified water treatment devices or certified treatment components determined to be out of compliance with section 60435 or the manufacturer's testing protocol will be notified by registered mail of the decertification and reason for decertification. The manufacturer may appeal the decertification in accordance with Government Code, title 2, division 3, chapter 5, section 11500 et seq. The registered letter providing notice of the decertification will be considered the accusation within the appeal process.

(c) Retesting pursuant to subdivision (a) shall not be required for a certified water treatment device or certified treatment component if the water treatment device or treatment component is listed under a product listing program operated a non-profit third party testing organization and subject to the following provisions:

(1) The listing program is operated by a recognized testing organization.

(2) The listing program includes retesting of the water treatment device or its treatment components at least every five years.

(3) The listing program requires that the manufacturer maintain a quality assurance and quality control program for the manufacturing of the water treatment device or treatment component.

(4) The listing program includes visits at least every two years to the manufacturing plants to inspect the manufacturing of the water treatment device or treatment component and the quality control records maintained by the manufacturer.

Article 5. Product Labeling and Data Sheet Requirements

§60465. Product Labeling.

(a) A permanent, clear, and legible plate or label containing the following information shall be securely affixed to each certified water treatment device or certified treatment component so that such plate or label can only be removed with a purposeful effort and the plate or label shall be affixed in a readily accessible location:

(1) Equipment name.
(2) Model designation.
(3) Name of manufacturer.
(4) The statement "For conditions of use, health claims certified by the California Department of Health Services, and replacement parts, see product data sheet."
(5) The statement "California Department of Health Services certification Number: XXXXXX."

§60470. Product Data Sheet.

(a) Each certified water treatment device shall be accompanied by a Product Data Sheet which includes the following information:
(1) A copy of the certificate by which the Department has granted certification of the water treatment device. The copy may be incorporated in the product data sheet or attached to the sheet.
(2) Service flow rate in gallons per minute or gallons per day (Liters/day) or the production rate in gallons per day (Liters/day).
(3) Rated service life of the water treatment device (where applicable).
(4) General use conditions and needs, such as maximum turbidity and bacteriological quality of source water.
(5) Model or part number and estimated cost of components that must be periodically or routinely, replaced to maintain the effectiveness of the certified water treatment device.
(6) Maximum and minimum operating temperature in degrees Fahrenheit and degrees Centigrade.
(7) Maximum and minimum operating pressure in pounds per square inch and kilograms per square centimeter.
(8) A reference to the owner's manual for general operation and maintenance requirements, and the manufacturer's warranty.

Article 6. Fees

§60475. Fees.

(a) The fees specified shall be paid pursuant to the requirements of this chapter. The fees paid are non-refundable:

(1) Certification or Recertification	$1400
(2) Annual Renewal	$400
(3) Late Renewal Penalty	$200
(4) Modification of a Certification	$300

CHAPTER 12. SAFE DRINKING WATER PROJECT FUNDING

Article 1. Definitions

§63000.10. Applicant.

"Applicant" means a public water system that is applying for funding from the State Revolving Fund.

§63000.13. CEQA.

"CEQA" means the California Environmental Quality Act and the regulations and guidelines adopted by the California Resources Agency to implement that Act.

§63000.16. Completion of Project.
"Completion of Project" means, in the case of construction, that the Department has conducted a final inspection of the project and has notified the Department of Water Resources that project construction has been completed. In the case of planning loans, completion of project means that the Department has received and approved the planning report and has notified the Department of Water Resources of the approval.

§63000.17. Consolidation Project.
"Consolidation project" means a project that involves the restructuring of two or more water systems into a single public water system through physical consolidation of the water systems.

§63000.19. Construction Funding.
"Construction Funding" means a loan and/or grant to cover the cost of planning, preliminary engineering, design, acquisition of water systems, purchase of land or equipment, and construction or consolidation of a water system project.

§63000.25. Disadvantaged Community.
"Disadvantaged Community" means a community whose median household income is 65 percent or less of the statewide median household income.

§63000.28. Drinking Water Standards.
"Drinking Water Standards" means all drinking water requirements set forth in the California Safe Drinking Water Act (section 116275 et. seq. Health and Safety Code) and the regulations adopted by the Department pursuant thereto.

§63000.31. Eligible Project Cost.
"Eligible Project Cost" means those costs of a proposed project that are deemed by the Department to comply with the eligibility criteria set forth in section 63010.

§63000.34. Federal Cross-Cutters.
"Federal Cross-cutters" means those federal laws, regulations, policies and executive orders listed in Appendix VII of the USEPA program guidelines.

§63000.35. Federal Funding Allocation.
"Federal Funding Allocation means the capitalization grant awarded by the USEPA to the Department from a specific federal fiscal year allocation.

§63000.40. Funding Application.
"Funding Application" means the appropriate application form to be submitted by an applicant for State Revolving Fund funding. The application forms are: Application Cover Sheet [DHS 8595 (5/99)], Application for Construction Funds [DHS 8585 (4/01)]; Application for Short Term Planning Loans [DHS 8586 (1/99)]; Application for Source Water Protection Funds [DHS

8588 (2/00)]; and Application for Refinancing [DHS 8587 (1/99)], which are all incorporated by reference.

§63000.43. Funding Agreement.
"Funding Agreement" means the document that is signed by the funding recipient and the Department of Water Resources, acting as the agent for the Department, that consummates the loan and/or grant.

§63000.46. Funding Agreement Execution.
"Funding Agreement Execution" means that the funding agreement has been signed by both the funding recipient and the Department of Water Resources acting as the agent for the Department.

§63000.47. Funding Recipient.
"Funding recipient" means the public water system that enters into a funding agreement with the State and receives funding from the Safe Drinking Water State Revolving Fund.

§63000.49. Local Match Project.
"Local Match Project" means a project whereby the local public agency provides 20 percent of the total eligible cost of the project to the Department to cover the State's matching share of the federal dollars.

§63000.62. Median Household Income.
"Median Household Income" means the household income that represents the median value for the service area of a public water system.

§63000.65. NEPA.
"NEPA" means the National Environmental Policy Act (42 U.S.C. 4331 et seq.) or a NEPA equivalent or NEPA- Like process approved by the USEPA for the drinking water revolving fund loan program.

§63000.66. Non-profit.
"Non-profit" means an entity that is exempt from taxes under United States Internal Revenue Code Section 501(a), 26 U.S.C. 501(a).

§63000.67. Notice of Acceptance of Application.
"Notice of Acceptance of Application" means a notice sent to the applicant that (1) identifies the portions and costs of the project that have been determined to be eligible for State Revolving Fund funding; (2) explains the terms and conditions that will govern the loan or grant for the project; and (3) sets forth the conditions and schedules that must be met before a funding agreement will be executed.

§63000.68. Planning Loan.
"Planning Loan" means a loan to cover the cost of studies, planning, and preliminary engineering for a project.

§63000.70. Possible contaminating activity (PCA).
"Possible contaminating activity (PCA)" means a human activity that is an actual or potential origin of contamination for a drinking water source and includes sources of both microbiological and chemical contaminants that could have adverse effects upon human health.

§63000.71. Project.
"Project" means all planning, engineering, construction, and construction related activities undertaken to solve the specific water system problem for which the project was ranked on the project priority list.

§63000.74. Project Priority List.
"Project Priority List" means the list of projects for which public water systems have requested funding and that have been ranked in priority order in accordance with section 116760.70 of the Health and Safety Code.

§63000.77. Project Primarily to Serve Future Growth.
"Project Primarily to Serve Future Growth" means a project, or project component, that has a design capacity that is more than double the design capacity needed to serve the existing water demand at peak daily flow.

§63000.80. Refinancing Loan.
"Refinancing Loan" means a loan to refinance the remaining balance of an existing indebtedness incurred for construction of an otherwise eligible project where the construction of such project commenced after July 1, 1993.

§63000.81. Restructured Water System.
"Restructured water system" means the single public water system that results from the consolidation of two or more water systems.

§63000.83. Service Area.
"Service Area" means all of the geographical area that is currently served drinking water by a public water system.

§63000.84. Source Water Assessment.
"Source water assessment" means an evaluation of a drinking water source that includes delineation of the boundaries of the source area, identification of PCAs within the delineated area, a determination of the PCAs to which the source is most vulnerable, and a summary of the vulnerability of the source to contamination.

§63000.85. Source Water Protection (SWP).
"Source water protection (SWP)" means the process of managing the activities within a delineated source area to prevent drinking water source contamination.

§63000.86. Source Water Protection Program.

"Source water protection program", also known as a wellhead protection program or a watershed management program, means a comprehensive program developed to protect a water source used as a drinking water supply and includes activities such as organizing a community taskforce to develop and carry out the protection program, educating the community on source protection, conducting a source water assessment to determine the PCAs to which the source is most vulnerable, identifying management measures for the PCAs posing the highest risk, developing a strategy for implementing those measures, considering protection principles when siting any new sources, and identifying alternative sources of supply for emergencies.

§63000.87. Source Water Protection (SWP) Loan.
"Source Water Protection (SWP) loan" means a loan to cover the cost of a Source Water Protection Project.

§63000.88. SWP loan applicant.
"SWP loan applicant" means a public water system that is applying for a SWP loan from the State Revolving Fund.

§63000.89 State Revolving Fund.
"State Revolving Fund" means the Safe Drinking Water State Revolving Fund created pursuant to section 116760.30 of the Health and Safety Code.

§63000.90. Target Consumer Rate.
"Target Consumer Rate" means an amount equal to 1 1/2 percent of the median household income for water systems where the median household income is equal to or less than the statewide median household income or 2 percent of the median household income for water systems where the median household income is greater than the statewide median household income.

§63000.92. USEPA.
"USEPA" means the United States Environmental Protection Agency.

§63000.95. USEPA Program Guidelines.
"USEPA Program Guidelines" means the Drinking Water State Revolving Fund Program Guidelines (EPA 816-R-97-005, February 28, 1997) adopted by the USEPA.

Article 2. Financing Criteria

§63010. Project Eligibility.

(a) In order to be eligible for funding, an applicant shall have the authority to enter into a debt contract with the State.

(b) In order to be eligible for funding that is not a SWP loan, an applicant shall be either a community water system or a non-profit non-community water system.

(1) Only those project costs that are directly associated with the planning, design, and construction of a project shall be eligible for funding.

(2) The following project costs, that would otherwise be eligible pursuant to paragraph (1), shall be ineligible for funding:

(A) Land acquisition except for land or land access that is integral to the construction of source, treatment or distribution facilities.

(B) Ongoing operation and maintenance costs.

(C) Any project facilities that are primarily to serve future growth.

(D) Dams or rehabilitation of dams and any raw water storage facilities.

(E) Water rights except water rights acquired through consolidation with another water system.

(F) Laboratories except those necessary for operation of a treatment facility.

(c) In order to be eligible for a SWP loan, an applicant shall be a community water system except that both a community and non-profit non-community water system shall be eligible for a SWP loan for land or easement acquisition.

(1) SWP project costs that shall be eligible for a SWP loan include only those associated with source water protection measures such as destruction of abandoned wells, hazardous waste collection programs, upgrade or abatement of septic systems, public education, water quality monitoring at critical points in protection areas, fencing out cattle and other animals from intakes, tributaries or reservoir boundaries, restricting public access to critical areas in protection areas, evaluations of agricultural practices and education on best management practices, installation of signs at boundaries of zones or protection areas, and structures to divert contaminated runoff from the source.

(2) SWP project costs shall be ineligible for SWP funding if the project is eligible for funding through the following:

(A) The federal Comprehensive Environmental Response Compensation and Liability Act of 1980 (Superfund) as amended by the Superfund Amendments and Reauthorization Act of 1986; or

(B) Programs established under the Hazardous Substance Account Act (Health and Safety Code, Chapter 6.8, Section 25300 et seq); or

(C) The Underground Storage Tank Cleanup Fund created pursuant to Health and Safety Code section 25299.50.

(d) Costs arising from construction change orders that occur after funding agreement execution shall be ineligible for funding except for the following:

(1) A change in the executed funding agreement amount based on the final accepted construction bid as provided in section 63051(b).

(2) Change orders that are a result of changes in drinking water standards.

(3) Change orders requested by the Department.

§63011. Planning Loans.

(a) Planning funds shall be used only for loans to finance planning, studies, and preliminary engineering costs for an eligible project. Planning funds shall not be used for detailed design, equipment purchase, or construction.

(b) Planning loans shall be limited to a maximum amount of $100,000 per project.

(c) Projects funded by planning loans shall be completed and a planning report submitted to the Department within 18 months from funding agreement execution.

§63012. Construction Funding.

(a) Construction funding shall be limited to a maximum amount of $20,000,000 per project.

(b) A public water system shall not be awarded more than an aggregate amount of $30,000,000 in construction funding and refinancing loans from a federal funding allocation.

(c) The funding limitations established by this section shall not apply during the month preceding the federal deadline for obligation of funds to applicants from a federal funding allocation.

§63013. Refinancing Loans.

(a) Refinancing loan funds shall only be used to refinance the remaining balance of an existing indebtedness incurred by the construction of an eligible project ranked in a category A through G on the Project Priority List.

(b) An applicant for a refinancing loan shall be a public agency.

(c) Refinancing loans shall be limited to a maximum amount of $20,000,000 per project and an aggregate total of $30,000,000 per water system from a federal funding allocation.

§63014. Local Match Projects.

(a) Local match projects shall be considered to be the same as construction projects and shall be subject to the same conditions and limitations.

(b) An applicant for a local match project shall be a community water system owned by a public agency.

(c) Only projects that exceed $5,000,000 in eligible project costs shall be eligible for local matching.

§63015. SWP Loans.

(a) SWP loan funds shall be used only for planning, preliminary engineering, detailed design, construction, education, land acquisition, conservation easements, equipment purchase, and implementing the elements of a source water protection program.

(b) SWP loans shall be limited to a maximum amount of $2,000,000 per project per year.

(c) A SWP loan applicant shall not be awarded more than an aggregate amount of $3,000,000 in SWP loans in any fiscal year.

(d) A planning project funded by a SWP loan shall be completed and a planning report submitted to the Department within 18 months from funding agreement execution.

Article 3. Disadvantaged Communities

§63020. Grant Eligibility.

Funding in the form of a grant shall be made only to a public water system owned by a public agency and whose service area is a disadvantaged community. In the case of a consolidation project, the service area that would be assimilated (cease to exist as a separate public water system) as a result of the consolidation shall be used to determine grant eligibility.

§63021. Grant Limitations.

(a) The maximum amount of grant funding to be awarded to a project shall be limited to the following percentages according to the classification of the project using the Project Priority List adopted September 15, 1998, pursuant to Health and Safety Code section 116760.70:

(1) 80% of the eligible project cost if the project is in Project Priority List categories A through G;

(2) 65% of the eligible project cost if the project is in Project Priority List categories H through L; or

(3) 50% of the eligible project cost if the project is in Project Priority List categories M through O.

(b) Grant funds awarded to a disadvantaged community project shall not exceed $10,000 per service connection.

(c) The maximum amount of grant funding that one water system may receive from a federal funding allocation shall not exceed $1,000,000.

(d) The total amount of grant funding awarded to a disadvantaged community for a project shall be limited to the amount of funding needed so that the projected average residential water rate, which would result from a loan from the State Revolving Fund, will not exceed the target consumer rate.

(e) For consolidation projects, the limitations and maximum grant calculations set forth in this section shall be applied to each applicant's eligible share of the total project cost of the consolidation project, and the grant eligibility for the entire consolidation project shall be the total of the eligibilities for the individual applicants.

Article 4. Application Process

§63025. Funding Application.

(a) All funding applications shall be submitted by public water systems only after a water system has received a written invitation from the Department to do so.

(b) Upon receipt of a written invitation from the Department to submit a funding application, an applicant shall indicate their intention to submit the application within the deadline set forth in the letter by signing a statement of intent. The statement of intent shall be received by the Department prior to close of business on the day indicated in the invitation.

(c) In order to be assured of receiving funding consideration from a specific federal funding allocation, a completed funding application shall be submitted to the Department by close of business on the date set forth in the letter of invitation.

(d) A funding application shall not be accepted for processing unless the funding application form is completed and the additional information specified in sections 63026, 63027, and 63028 is submitted.

(1) For SWP loan applications, the information in Sections 63026(d), 63026(e), 63027, and 63028(a).

(2) For all other funding applications, the information in Sections 63026, 63027, and 63028.

§63026. Technical Information.

(a) Each funding application for construction funding or a refinancing loan shall contain the following information:

(1) A map showing the current service area of the water system.

(2) A map or drawing showing the location of all existing water sources, pumping facilities, treatment facilities, storage tanks or reservoirs, water transmission mains, and water main pressure zones.

(3) A schedule for full compliance with CEQA and NEPA.

(b) Each applicant for construction funding shall prepare and submit with the funding application, an engineering report addressing all of the following elements:

(1) An identification and evaluation of alternative solutions to the problem. The evaluation shall compare estimated project costs, relative effectiveness in solving the problem, and environmental impacts of each alternative.

(2) An evaluation, including costs and feasibility, of possible physical consolidation with other water systems.

(3) A description of the selected or proposed alternative.

(4) A conceptual or preliminary engineering design, including the design capacity of project components, and a schematic layout of the proposed project. All assumptions, criteria, and calculations used for the preliminary design shall be shown.

(5) An analysis and estimation of the anticipated useful life of components of the proposed project.

(6) A preliminary analysis of projected growth anticipated to occur within the service area within the next ten years, the resultant projected water demand, and the amount of growth or water demand to be included in the project.

(7) A proposed design and construction schedule.

(8) A cost estimate breakdown of the proposed project.

(9) In the case of a consolidation project, each funding application also shall include identification of the single public water system that would result from completion of the consolidation project.

(c) Each funding application for a refinancing loan shall include all of the following:

(1) A description and estimated costs of all alternative solutions to the problem that were considered prior to construction of the selected project.

(2) A layout or schematic drawing showing the location and relationship of all project facilities including the newly constructed portions.

(3) A description of the facilities that were constructed and for which refinancing is being requested including an estimate of their useful life.

(4) The design capacities of project components and the design parameters and engineering calculations used in the sizing and design of the project components.

(5) An analysis and estimation of the water demand within the service area at the time of start of construction of the project and a projection of anticipated growth and water demand for a ten-year period commencing from the time of start of construction.

(6) A cost breakdown of the constructed project.

(7) As-built plans for all of the construction facilities that are to be covered by the refinancing loan.

(8) The final plans and specifications used to solicit and select the construction bid.

(9) Information that demonstrates that the applicant has complied with all applicable federal cross-cutters.

(d) Each SWP loan applicant shall submit the following:

(1) A completed source water assessment for each drinking water source addressed by the proposed project.

(2) A list of the types of contaminants that the proposed project is intended to address and the associated PCAs.

(3) A description of the dimensions and location of the area or zone in which the associated PCAs are located.

(4) A map showing water system facilities, intake or well location, and source protection areas and/or zones.

(5) A description of the local community taskforce addressing source water protection (if one exists). The description shall include a list of the participants and their affiliations, and the methods used to establish the membership in the taskforce.

(6) A schedule for full compliance with CEQA and NEPA.

(e) Each SWP loan applicant shall prepare and submit an engineering report with the loan application that addresses all of the following:

(1) Descriptions and estimated costs of all alternative solutions to the problem that were considered prior to selection of the proposed project.

(2) A description of the proposed project.

(3) A conceptual or preliminary engineering design and schematic layout of the proposed project, if applicable. All assumptions, criteria, and calculations used shall be shown.

(4) An analysis and estimation of the anticipated useful life of the components of the proposed project, if applicable.

(5) A proposed schedule for carrying out the project.

(6) A cost estimate breakdown of the proposed project.

§63027. Managerial Information.

Each funding application shall contain the following:

(a) Copies of any leases, easements, or other documentation for land, water sources, treatment, pumping, storage, or distribution facilities used in the operation of the water system that are not owned by the water system.

(b) A written statement certifying that the applicant, or in the case of a consolidation project, the restructured water system, is a legal entity and that it has the authority to enter into a long-term indebtedness with the State of California.

(c) A description of the water rights held by the water system and any available documentation to substantiate those rights.

§63028. Financial Information.

(a) Each funding application shall contain the following:

(1) A projected revenue/expenditure analysis that compares all anticipated water system revenues and planned expenditures for the next five years.

(2) An analysis and calculation of the average current water rate charged to residential users and the projected average water rate that will be charged to residential users following completion of the eligible project. This analysis is not required for non-community water systems.

(3) Financial statements (balance and income) of the water system covering the past three years.

(4) A description of the accounting and budget control procedures used and any proposed changes to the procedures.

(b) In addition to the requirements of subsection (a), applicants for a refinancing loan shall also include a certification that proceeds of the previous debt were used to pay for eligible project costs. If ineligible items were funded, a list of those items and their costs shall be included.

(c) In addition to the requirements of subsection (a), applicants that propose to use local matching funds pursuant to section 63014 shall include a resolution adopted by the governing body. The resolution shall identify the source of the local matching funds and pledge those funds for deposit into the State Revolving Fund.

§63029. Notice of Acceptance of Application.

(a) Within 60 days of receipt of a Notice of Acceptance of Application from the Department of Water Resources, the applicant shall indicate their acceptance of the terms and conditions of the funding offer by countersigning the letter and returning it to the Department of Water Resources.

(b) If the proposed project is a consolidation project for which the restructured water system is not one of the applicants, within 60 days of receipt of a Notice of Acceptance of Application from the Department of Water Resources, the applicant(s) and the restructured water system shall indicate their acceptance of the terms and conditions of the funding offer by countersigning the letter and returning it to the Department of Water Resources.

§63030. Project By-Passing.

(a) A project on the Project Priority List shall be by-passed for funding consideration for the current fiscal year if any of the following apply:

(1) The water system indicated that it did not desire to receive funding for a particular project in the current fiscal year.

(2) A water system fails to sign a statement of intent to submit an application and return it to the Department by the date identified in the letter as specified in Section 63025(b).

(3) A water system, receiving an invitation from the Department to submit a funding application, informs the Department that it does not wish to submit an application at this time.

(4) A funding application is rejected by the Department for failure on the part of the applicant to comply with the requirements of this chapter.

(5) An applicant fails to sign and return the Notice of Acceptance of Application within 30 days of receipt of the Notice of Acceptance of Application.

(6) The Department of Water Resources or the Department of Health Services withdraws a previously issued Notice of Acceptance of Application for failure on the part of the applicant to comply with the terms and conditions as stated in the Notice of Acceptance of Application.

(7) The applicant has reached the $3,000,000 loan maximum set forth in subsection 63015(c) for a SWP loan, or the $30,000,000 funding maximum set forth in subsection 63012(b) for a construction funding or refinancing loan.

(b) Any project that is by-passed for any reason shall remain on the Project Priority List and be eligible for future funding consideration.

Article 5. Information to Be Submitted Prior to Execution of the Funding Agreement

§63040. Technical and Financial Information.

(a) All applicants for construction funding, SWP loans, or refinancing loans shall comply with all applicable environmental review and procedural requirements of CEQA and NEPA prior to execution of the funding agreement.

(b) Prior to execution of a funding agreement that includes a loan, each funding recipient shall submit the following:

(1) A resolution or ordinance adopted by the governing body dedicating the source of repayment of the loan.

(2) A completed and signed Fiscal Services Agreement [DWR-4280 (New 2/99) which is incorporated by reference].

Article 6. Design and Construction

§63050. Plans and Specifications.

(a) Applicants for construction funding or SWP loans involving construction shall submit final design plans and project specifications to the Department in accordance with the schedule set forth in the Notice of Acceptance of Application.

(b) Each project that requests funding in excess of $500,000, and each project proposed by an applicant whose service area serves more than 1,000 service connections, shall comply with federal cross-cutters. In addition, each SWP applicant shall comply with federal cross-cutters.

§63051. Construction.

(a) Construction contracts awarded by the applicant for any project involving the use of grant funds from the State Revolving Fund shall be based on competitive construction bids.

(b) An applicant's request for a change in the amount of funding specified in the funding agreement shall be limited to one occasion and shall be based solely on the final accepted construction bid(s).

Article 7. Claims and Loan Repayments

§63055. Submission of Claims for Reimbursement.

(a) No claims for reimbursement shall be submitted prior to execution of the funding agreement. Claims shall be submitted only for reimbursement of costs already incurred.

(b) Claims submitted by loan recipients shall be made using a claim form [DWR - 4277 (New 2/99) which is incorporated by reference] provided by the Department of Water Resources and shall be submitted no more frequently than monthly.

(c) No claims shall be submitted for costs incurred after completion of the project.

(d) No claims for local match projects shall be reimbursed until the applicant's local share has been received and deposited into the State Revolving Fund account.

§63056. Loan Repayments.

(a) Loan repayments shall be made in accordance with the schedule set forth in the funding agreement.

(b) A penalty of one-tenth of one percent per day (not compounded) on the payment amount due shall be assessed for late payments.

§63057. Records.

(a) All applicant records and documents relating to funding received from the State Revolving Fund shall be maintained until such time that any State Revolving Fund loan has been fully repaid.

(b) All applicant records and documents pertaining to the funding agreement shall be available for inspection and audit by the Department or the USEPA during normal business hours.

(c) In the case of a consolidation project, the requirements of this section shall also be met by the restructured water system.

§63058. Limitations on Water Systems Involved in Consolidation Projects.
Upon completion of a consolidation project, all water systems involved in the consolidation, other than the restructured system, shall cease to operate as public water systems.

CHAPTER 13. OPERATOR CERTIFICATION

Article 1. Definitions

§63750.10. Accredited Academic Institution.
"Accredited academic institution" means an academic institution accredited by the Western Association of Schools and Colleges or an accrediting organization recognized by the Council of Post Secondary Education.

§63750.15. Certificate.
"Certificate" means a certificate of competency issued by the Department stating that the operator has met the requirements for a specific operator classification of the certification program.

§63750.20. Certified Distribution Operator.
"Certified distribution operator" means a distribution operator who possesses a valid certificate issued pursuant to this chapter.

§63750.25. Chief Operator.
"Chief operator" means the person who has overall responsibility for the day-to-day, hands-on, operation of a water treatment facility or the person who has overall responsibility for the day-to-day, hands-on, operation of a distribution system.

§63750.30. Comprehensive Operator Training Program.
"Comprehensive Operator Training Program" means an on-the-job training program that allows an operator to gain proficiency in all systems and processes related to a water treatment facility.

§63750.35. Contact Hour.
"Contact hour" means not less than 50 minutes of specialized training or a continuing education course.

§63750.40. Continuing Education Course.
"Continuing education course" means a presentation that transmits information related to the operation of a treatment facility and/or distribution system.

§63750.45. Distribution Operator.
"Distribution operator" means any person who maintains or operates any portion of a distribution system.

§63750.50. Distribution System.
"Distribution system" means any combination of pipes, tanks, pumps, etc., which delivers drinking water from a source or treatment facility to the consumer and includes:

(a) Disinfection facilities for which no *Giardia* or virus reduction is required pursuant to §64654 (a).

(b) The composite of all distribution systems of a public water system.

§63750.55. GED.
"GED" means a general equivalency diploma.

§63750.60. Interim Distribution Operator Certificate.
"Interim Distribution Operator Certificate" means a certificate issued by the Department pursuant to §63810.

§63750.65. Operator Experience.
"Operator experience" means the daily performance of activities consisting of the control or oversight of any process or operation at a water treatment facility or in a distribution system that may affect the quality or quantity of water.

§63750.70. Shift Operator.
"Shift operator" means a person in direct charge of the operation of a water treatment facility or distribution system for a specified period of the day.

§63750.75. Specialized Training.
"Specialized training" means college level courses providing at least 36 contact hours of training each in drinking water or waste water quality, drinking water or waste water treatment, drinking water distribution, or drinking water or waste water facility operation, offered by an accredited academic institution or an organization either accredited by the International Association of Continuing Education Training (IACET) or an authorized provider of IACET, or courses completed and deemed acceptable by the Department prior to January 1, 2001 for the purpose of operator certification.

§63750.85. Water treatment facility.
"Water treatment facility" means a group or assemblage of structures, equipment, and processes that treat or condition a water supply, affecting the physical, chemical, or bacteriological quality of water distributed or otherwise offered to the public for domestic use by a public water system as defined in Health and Safety Code §116275. Facilities consisting of only disinfection for which no *Giardia* or virus reduction is required pursuant to §64654(a) and which are under the control of a certified distribution operator are not included as water treatment facilities.

Article 2. Operator Certification Grades

§63765. Water Treatment Facility Staff Certification Requirements.

(a) Except as provided in (c), chief and shift operators shall possess valid operator certificates pursuant to Table 63765-A.

TABLE 63765-A
Minimum Certification Requirements for Chief and Shift Operators

Treatment Facility Classification	*Minimum Certification of Chief Operator*	*Minimum Certification of Shift Operator*
T1	T1	T1
T2	T2	T1
T3	T3	T2
T4	T4	T3
T5	T5	T3

(b) Treatment operators not designated by the water supplier as chief or shift operator pursuant to §64413.5 shall be certified but may hold certificates of any grade.

(c) Until January 1, 2003, a shift and/or chief operator may continue to be employed in that capacity provided that the operator:

(1) Is in compliance with the certification requirements that were in effect on December 31, 2000, and

(2) Has been in continuous employment since December 31, 2000 in a water treatment facility that has not modified its treatment process resulting in a change in classification.

(d) Operators who possessed treatment operator certificates valid as of December 31, 2000 shall be deemed to hold certificates pursuant to Table 63765-B.

TABLE 63765-B
Certificate Grade Equivalents

Operator Certification Grades December 31, 2000	*Operator Certification Grades January 1, 2001*
I	T1
II	T2
III	T3
IV	T4
V	T5

§63770. Distribution System Staff Certification Requirements.

(a) Chief and shift operators shall possess valid operator certificates pursuant to Table 63770-A.

Table 63770-A
Minimum Certification Requirements for Chief and Shift Operators

Distribution System Classification	*Minimum Certification of Chief Operator*	*Minimum Certification of Shift Operator*
D1	D1	D1
D2	D2	D1

D3	D3	D2
D4	D4	D3
D5	D5	D3

(b) Water systems shall utilize only certified distribution operators to make decisions addressing the following operational activities:

(1) Install, tap, re-line, disinfect, test and connect water mains and appurtenances.

(2) Shutdown, repair, disinfect and test broken water mains.

(3) Oversee the flushing, cleaning, and pigging of existing water mains.

(4) Pull, reset, rehabilitate, disinfect and test domestic water wells.

(5) Stand-by emergency response duties for after hours distribution system operational emergencies.

(6) Drain, clean, disinfect, and maintain distribution reservoirs.

(c) Water systems shall utilize either certified distribution operators or treatment operators that have been trained to make decisions addressing the following operational activities:

(1) Operate pumps and related flow and pressure control and storage facilities manually or by using a system control and data acquisition (SCADA) system.

(2) Maintain and/or adjust system flow and pressure requirements, control flows to meet consumer demands including fire flow demands and minimum pressure requirements.

(d) Water systems shall utilize either certified distribution operators or treatment operators to make decisions addressing the following operational activities:

(1) Determine and control proper chemical dosage rates for wellhead disinfection and distribution residual maintenance.

(2) Investigate water quality problems in the distribution system.

Article 3. Operator Examination Criteria and Applications

§63775. Eligibility Criteria for Taking a Water Treatment Operator Examination.

(a) An applicant who has had a certificate revoked, and not reinstated, for any reason other than failure to meet renewal requirements pursuant to §63840 shall not be eligible for water treatment operator examination at any grade level.

(b) In order to be eligible for taking the T1 operator exam, an applicant shall have a high school diploma or GED. The following experience and/or training may be substituted for a high school diploma or GED:

(1) Successful completion of the "Basic Small Water System Operations" course provided by the Department**,** or

(2) One year as an operator of a facility that required an understanding of chemical feeds, hydraulic systems, and pumps.

(c) In order to be eligible for taking the T2 operator exam, an applicant shall have:

(1) A high school diploma or GED. The following experience and/or training may be substituted for a high school diploma or GED:

(A) Successful completion of the "Basic Small Water System Operations" course provided by the Department, or

(B) One year as an operator of a facility that required an understanding of chemical feeds, hydraulic systems, and pumps.

(2) Successfully completed at least one course of specialized training covering the fundamentals of drinking water treatment.

(d) In order to be eligible for taking the T3 operator exam, an applicant shall have:

(1) A high school diploma or GED.

(2) Successfully completed a total of at least two courses of specialized training that includes at least one course covering the fundamentals of drinking water treatment.

(e) In order to be eligible for taking the T4 operator exam, an applicant shall have:

(1) A valid Grade T3 operator certificate.

(2) Successfully completed at least three courses of specialized training that includes at least two courses in drinking water treatment.

(f) In order to be eligible for taking the T5 operator exam, an applicant shall have:

(1) A valid Grade T4 operator certificate.

(2) Successfully completed at least four courses of specialized training that includes at least two courses in drinking water treatment.

(g) Specialized training courses used to fulfill the requirements of this Section may also be used to fulfill the requirements of §63780.

§63780. Eligibility Criteria for Taking a Distribution Operator Examination.

(a) An applicant who has had a certificate revoked, and not reinstated, for any reason other than failure to meet renewal requirements pursuant to §63840 shall not be eligible for distribution operator examination at any grade level.

(b) In order to be eligible for taking the D1 operator exam, an applicant shall have a high school diploma or GED. The following experience and/or training may be substituted for a high school diploma or GED:

(1) Successful completion of the "Basic Small Water System Operations" course provided by the Department, or

(2) One year as an operator of a facility that required an understanding of a piping system that included pumps, valves, and storage tanks.

(c) In order to be eligible for taking the D2 operator exam, an applicant shall have:

(1) A high school diploma or GED. The following experience and/or training may be substituted for a high school diploma or GED:

(A) Successful completion of the "Basic Small Water System Operations" course provided by the Department, or

(B) One year as an operator of a facility that required an understanding of a piping system that included pumps, valves, and storage tanks.

(2) Successfully completed a total of at least one course of specialized training in water supply principles.

(d) In order to be eligible for taking the D3 operator exam, an applicant shall have:
(1) A valid Grade D2 or interim Grade D3 or higher operator certificate.
(2) Successfully completed a total of at least two courses of specialized training that includes at least one course in water supply principles.

(e) In order to be eligible for taking the D4 operator exam, an applicant shall have:
(1) A valid Grade D3 or interim Grade D4 or higher operator certificate.
(2) Successfully completed at least three courses of specialized training that includes at least two courses in water supply principles.

(f) In order to be eligible for taking the D5 operator exam, an applicant shall have:
(1) A valid Grade D4 or interim Grade D5 operator certificate.
(2) Successfully completed at least four courses of specialized training that includes at least two courses in water supply principles.

(g) Specialized training courses used to fulfill the requirements of this § may also be used to fulfill the requirements of §63775.

§63785. Examination Application Content and Submittal.

(a) A complete application for examination shall include the following information:
(1) The applicant's full name, social security number (pursuant to the authority found in §100275 and 106910 of the Health and Safety Code and as required by §17520 of the Family Code, providing the social security number is mandatory. The social security number will be used for purposes of identification), date of birth, certificate number of any operator certificates ever held, mailing address, work telephone number, and home telephone number.
(2) The date of the examination for which the applicant is applying.
(3) The examination fee, pursuant to §63850.
(4) For T1, T2, D1, and D2 applicants one of the following:
(A) A copy of the applicant's high school diploma or the name and location of the high school and date of graduation; or
(B) A copy of the applicant's GED; or
(C) A certificate of completion for the "Basic Small Water System Operations" course provided by the Department; or
(D) The name, address, and phone number of each employer, the length of time employed, and the nature of the work performed that satisfies the requirements of §63775(b)(2) or (c)(1)(B) or 63780(b)(2) or (c)(1)(B).
(5) For T3 and D3 applicants, a copy of the applicant's high school diploma, or the name and location of the high school and date of graduation, or a copy of the applicant's GED.
(6) Copies of transcripts or certificates of completion of specialized training courses, as provided by the educational institution, claimed to meet the requirements of §63775 or 63780.

§63790. Examination Scheduling and Application Processing.

(a) For admission to an examination, the completed application shall be postmarked by the final filing date established by the Department.

(b) Each applicant for examination shall be notified of the Department's decision regarding compliance with the minimum requirements to take the examination set forth in §63775 or §63780 within 75 days after the receipt of a complete application. If the Department determines that the application does not meet the requirements, the notice shall include the reasons for the disqualification. If the Department determines that the application does meet the requirements the notice shall include the date of the examination for which they have been accepted.

(c) Examinees shall present their driver's license, photo identification (ID) card issued by the Department of Motor Vehicles, or passport upon entry to the exam.

§63795. Examination Application Resubmittals and Reexaminations.

(a) Applications for examination that the Department determines are incomplete pursuant to §63785 or do not meet the qualification requirements pursuant to §63775 or 63780 may be amended within 12 months of the original submittal date for reconsideration without payment of an additional examination fee.

(b) Examinees may apply to retake the exam provided they submit an application that includes the following:

(1) Applicant name, social security number (pursuant to the authority found in §100275 and 106910 of the Health and Safety Code and as required by §17520 of the Family Code, providing the social security number is mandatory. The social security number will be used for purposes of identification), current mailing address, grade for which applying, certificate number if currently certified, date of original application, and date of most recent exam taken.

(2) Payment of the reexamination fee pursuant to §63850.

Article 4. Operator Certification Criteria and Applications

§63800. Eligibility Criteria for Water Treatment Operator Certification.

(a) In order to be eligible for certification as a T1 operator, an applicant shall have passed a Grade T1 operator examination within the three years prior to submitting the application for certification.

(b) In order to be eligible for certification as a T2 operator, an applicant shall have passed a Grade T2 or T3 operator certificate examination within the three years prior to submitting the application for certification.

(c) In order to be eligible for certification as a T3 operator, an applicant shall have passed a Grade T3 operator examination within the three years prior to submitting the application for certification, and shall have completed the following:

(1) At least one year of operator experience working as a certified T2 operator for a T2 facility or higher, or a facility that, prior to January 1, 2001, would have met the criteria for classification as a T2 facility or higher pursuant to §64413.1.

(2) At least one additional year of operator experience working as a certified treatment operator.

(d) In order to be eligible for certification as a T4 operator, an applicant shall have passed a Grade T4 operator examination within the three years prior to submitting the application for certification, and shall have completed the following:

(1) At least one year of operator experience working as a shift or chief operator, while holding a valid T3 operator certificate, at a T3 facility or higher, or a facility that, prior to January 1, 2001, would have met the criteria for classification as a T3 facility or higher pursuant to §64413.1, and

(2) At least three additional years of operator experience working as a certified treatment operator.

(e) In order to be eligible for certification as a T5 operator, an applicant shall have passed a Grade T5 operator examination within the three years prior to submitting the application for certification, and shall have completed the following:

(1) At least two years of operator experience working as a shift or chief operator, while holding a valid T4 operator certificate, at a T4 facility or higher, or a facility that, prior to January 1, 2001, would have met the criteria for classification as a T4 facility or higher pursuant to §64413.1, and

(2) At least three additional years of operator experience working as a certified treatment operator.

(f) A degree earned at an accredited academic institution may be used to fulfill experience requirements in (c)(2), (d)(2), and (e)(2) as follows:

(1) An Associate degree or certificate in water or wastewater technology that includes at least 15 units of physical, chemical, or biological science may be used to fulfill 1 year of operator experience.

(2) A Bachelors degree in engineering or in physical, chemical, or biological sciences may be used to fulfill 1.5 years of operator experience.

(3) A Masters degree in engineering or in physical, chemical, or biological sciences may be used to fulfill 2 years of operator experience.

(g) A certified operator may substitute on a day-for-day basis the experience requirements in (c)(2) with experience gained while working with lead responsibility for water quality related projects or research.

(h) If the applicant has a bachelor of science or a master of science degree, completion of a comprehensive operator training program may be used to fulfill the operator experience requirements in (c)(1) and (d)(1). Completion of the training shall be verified in writing by the chief operator. The comprehensive operator training program shall be at least 6 months in duration and shall cover the following elements:

(1) California Safe Drinking Water Act and regulations promulgated pursuant thereto.

(2) Water treatment calculations.

(3) SCADA operation.

(4) Handling of laboratory chemicals used for drinking water analyses.
(5) Laboratory analyses conducted by operators.
(6) Safety training.
(7) Distribution system operation.
(8) Treatment chemical dosing and monitoring.
(9) Disinfectant dosing and monitoring.
(10) Treatment processes and controls.

(i) Experience gained as a certified waste water treatment plant operator, pursuant to California Water Code §13625 through 13633, may be used to fulfill up to two years of the operator experience requirements in (c)(2), (d)(2), and (e)(2). Each two months of experience as a waste water treatment plant operator shall be considered equivalent to one month of water treatment facility operator experience.

§63805. Eligibility Criteria for Distribution Operator Certification.

(a) In order to be eligible for certification as a D1 operator, an applicant shall have passed a Grade D1 operator examination within the three years prior to submitting the application for certification.

(b) In order to be eligible for certification as a D2 operator, an applicant shall have passed a Grade D2 operator examination within the three years prior to submitting the application for certification.

(c) In order to be eligible for certification as a D3 operator, an applicant shall have passed a Grade D3 operator examination within the three years prior to submitting the application for certification, and shall have completed the following:

(1) At least one year of operator experience working as a certified D2 operator, interim D3 or higher operator, or temporary D3 operator for a D2 system or higher, or a system that, prior to January 1, 2001, would have met the criteria for classification as a D2 system or higher pursuant to §64413.3.

(2) At least one additional year of operator experience working as a distribution operator.

(d) In order to be eligible for certification as a D4 operator, an applicant shall have passed a Grade D4 operator examination within the three years prior to submitting the application for certification, and shall have completed the following:

(1) At least one year of operator experience working as a certified D3, interim D4 or higher operator, or temporary D4 operator for a D3 system or higher, or a system that, prior to January 1, 2001, would have met the criteria for classification as a D3 facility or higher pursuant to §64413.3, and

(2) At least three additional years of operator experience working as a distribution operator.

(e) In order to be eligible for certification as a D5 operator, an applicant shall have passed a Grade D5 operator examination within the three years prior to submitting the application for certification, and shall have completed the following:

(1) At least two years of operator experience working as a certified D4, interim D5 operator, or temporary D5 operator for a D4 or D5 system, or a system that, prior to January 1, 2001, would have met the criteria for classification as a D4 or D5 system pursuant to §64413.3, and

(2) At least three additional years of operator experience working as a distribution operator.

(f) A degree earned at an accredited academic institution may be used to fulfill experience requirements in (c)(2), (d)(2), and (e)(2) as follows:

(1) An Associate degree, or certificate, in water or wastewater technology or distribution that includes at least 15 units of physical, chemical, or biological science may be used to fulfill 1 year of operator experience.

(2) A Bachelors degree in engineering or in physical, chemical, or biological sciences may be used to fulfill 1.5 years of operator experience.

(3) A Masters degree in engineering or in physical, chemical, or biological sciences may be used to fulfill 2 years of operator experience.

(g) A certified operator may substitute on a day-for-day basis the experience requirements in (c)(2) with experience gained while working with lead responsibility for water quality or quantity related projects or research.

§63810. Interim Certification of Distribution Operators.

(a) A distribution operator in a position responsible for making decisions identified in §63770 (b), (c), or (d) on December 31, 2000, shall be eligible for interim certification provided that the employing water supplier, as defined in §64402.20, submits an application which shall include for each employee:

(1) The employee's full name, social security number (pursuant to the authority found in §100275 and 106910 of the Health and Safety Code and as required by §17520 of the Family Code, providing the social security number is mandatory. The social security number will be used for purposes of identification), date of birth, certificate number of any operator certificates ever held, mailing address, work telephone number, and home telephone number.

(2) The grade at which the operator will be certified.

(3) The certification fee specified in Table 63850-C.

(b) Interim distribution operator certificates shall be effective as of January 1, 2001, and shall expire on January 1, 2004. Such certificates may be renewed only once for an additional 3 years and only if the water system has not received any notice of violation, citation, or order from the Department or EPA since January 1, 2001, unless the public water system can demonstrate to the satisfaction of the Department that the violation was not the result of actions taken or not taken by the operator(s). After January 1, 2007, all interim operator certificates shall be invalid.

(c) In order to renew an interim certificate, a water supplier shall submit a renewal application between July 1, 2003 and September 1, 2003. The renewal application shall include the following:

(1) The operator's name, social security number (pursuant to the authority found in §100275 and 106910 of the Health and Safety Code and as required by §17520 of the Family

Code, providing the social security number is mandatory. The social security number will be used for purposes of identification), current mailing address, certificate grade, and certificate number.

(2) Payment of the renewal fee specified in §63850(e).

(3) Documentation of continuing education contact hours as required by §63840.

§63815. CNAWWA Distribution Operator Certification.

(a) Distribution operators holding a valid California-Nevada section of the American Water Works Association (CNAWWA) distribution operator certificate on December 31, 2000, shall be deemed to have a distribution operator certification valid through December 31, 2001, pursuant to Table 63815-A.

Table 63815-A.
CNAWWA - California State Operator Grade Equivalents

CNAWWA Grade	*California State Grade*
1	D2
2	D3
3	D4
4	D5

(b) In order to renew a certification deemed valid pursuant to subsection(a), an operator shall submit a renewal application by September 1, 2001.

(c) The renewal application shall include the following:

(1) The applicant's name, social security number (pursuant to the authority found in §100275 and 106910 of the Health and Safety Code and as required by §17520 of the Family Code, providing the social security number is mandatory. The social security number will be used for purposes of identification), date of birth, current mailing address, work telephone number, home telephone number, certificate number of any operator certificates ever held, CNAWWA grade, and a copy of the CNAWWA certificate.

(2) Payment of the appropriate renewal fee specified in §63850(f).

(d) The initial renewal of a certificate deemed valid pursuant to subsection(a) shall be valid for a two-year period.

§63820. Temporary Distribution Operator Certification.

(a) Distribution operators who have received notice of qualification for examination shall be deemed to have a temporary distribution operator certification at the grade for which they have been qualified for examination. All temporary certifications will expire January 1, 2004 and shall not be renewable.

§63825. Restricted Operator Certification.

(a) A T1, T2, D1, or D2 restricted operator certificate may be issued without a written examination if the following conditions are met:

(1) The water supplier, as defined in §64402.20, serves a disadvantaged community as defined in §63000.25; and

(2) The Department has issued a citation or order to the water supplier for noncompliance with §64413.5 or 64413.7, or Health and Safety Code §116555(a)(4), (5), or (b); and

(3) The water supplier submits an application pursuant to §63830 and pays the application and examination fee specified in §63850; and

(4) The operator meets the criteria for taking the T1, T2, D1, or D2 exam and passes a performance test administered by the Department that measures his or her knowledge and ability to operate the specific treatment facility and/or distribution system without jeopardizing public health or safety.

(b) The restricted operator certificate shall be valid for three years. The certificate may be renewed if the water supplier continues to serve a disadvantaged community and submits an application pursuant to §63840 and the operator has met the continuing education requirements as specified in sub§63840(c).

(c) The restricted operator certificate is not transferable.

§63830. Certification Application Content and Submittal.

(a) A complete application for operator certification shall contain the following:

(1) The applicant's full name, social security number (pursuant to the authority found in §100275 and 106910 of the Health and Safety Code and as required by §17520 of the Family Code, providing the social security number is mandatory. The social security number will be used for purposes of identification), date of birth, certificate number of any operator certificates ever held, mailing address, work telephone number, and home telephone number.

(2) Payment of certification fee pursuant to §63850.

(3) For any experience being claimed to meet the experience requirements in §63800 or 63805, the name, address, and phone number of each employer, the length of time employed, and the nature of the work performed.

(4) Employer verification of the experience being claimed in paragraph (3) with the signature of the chief operator or supervisor of each employer.

(5) Copies of college transcripts if claiming any of the credits pursuant to §63800(f), 63800(h) and 63805(f).

(6) Copies of transcripts or certificates of completion of specialized training courses claimed to meet minimum requirements.

§63835. Certification and Renewal Application Processing.

(a) Each applicant submitting an application or reapplication for certification or renewal shall be notified of the Department's decision regarding compliance with the requirements set forth in §s 63800, 63805, 63830, or 63840 within 75 days after the receipt of the application or reapplication. If the Department determines that the application or reapplication does not meet the requirements, the applicant shall be notified of the reasons for the disqualification.

(b) Applications for certification that the Department determines do not meet the requirements may reapply within 12 months of the original submittal date without payment of an additional certification or renewal fee.

(c) The Department's median, minimum, and maximum processing times for applications for operator certification are as follows:

Median -- 25 calendar days
Minimum -- 5 calendar days
Maximum -- 60 calendar days

Article 5. Certification Renewals, Delinquent Renewals and Fees

§63840. Certification Renewals.

(a) All certified operators shall notify the Department within 60 days of any change in address or name during the period of their certification.

(b) Any person wishing to maintain a valid operator certificate shall submit an application for renewal at least 120 days, but no more than 180 days, prior to expiration of the certification. The following items constitute a complete application for renewal:

(1) The applicant's name, social security number (pursuant to the authority found in §100275 and 106910 of the Health and Safety Code and as required by §17520 of the Family Code, providing the social security number is mandatory. The social security number will be used for purposes of identification), current mailing address, grade, and certificate number.

(2) Payment of the renewal fee specified in §63850(c), (d), (e), or (f).

(3) A list of successfully completed continuing education courses as required by subsection(c). The following information shall be provided for each course:

(A) Title,
(B) name of the instructor,
(C) location,
(D) date(s), and
(E) number of contact hours.

(c) To be eligible for certificate renewal, certified operators possessing certificates that expire after December 31, 2003, shall have completed continuing education contact hours since the previous renewal or issuance of the certificate pursuant to Table 63840-A. No more than 25% of the contact hours shall be courses in operator safety.

Table 63840-A.
Required Continuing Education Contact Hours for Certificate Renewal

Water Treatment Operators	*Contact Hours Required*
Grade T1	12
Grade T2	16
Grade T3	24
Grade T4	36

Grade T5	36
Distribution Operators	
Grade D1	12
Grade D2	16
Grade D3	24
Grade D4	36
Grade D5	36

(1) Operators possessing both distribution and treatment certificates may apply continuing education credits to both certificates.

(2) Specialized training that is used to satisfy the requirements of §63775 or 63780 may be used to satisfy the continuing education requirements of Table 63840-A if obtained since the previous renewal or issuance of the certificate.

(d) Except as provided in §63815, each certificate renewed pursuant to (b) shall be valid for a period of three years.

§63845. Reinstatement.

(a) A certificate that has been revoked only for lack of payment may be reinstated within 1 year if all fees and penalties specified in §63850 are paid and the renewal application is complete.

(b) A certificate that has been revoked for failure to complete the continuing education contact hours required in Table 63840-A may be reinstated within six months if all requirements specified in Table 63840-A are met and penalties specified in §63850 are paid and the renewal application is complete. Contact hours obtained for reinstatement shall not be used to satisfy the requirements of the next renewal period.

(c) A certificate that has been revoked for more than one year shall not be renewed.

(d) The expiration date of a certificate that has been renewed pursuant to this section shall remain the same as if the previous certificate had been renewed prior to the expiration date.

§63850. Fees.

(a) Except as provided in subsection(e), payment of the fees specified in this § shall be made by a separate check or money order for each operator. The operator's name, and in the case of renewals, the operator's certificate number, shall be written on the check or money order.

(b) All fees submitted to the Department pursuant to this § are nonrefundable.

(c) Operator fees shall be pursuant to Table 63850-A.

Table 63850-A.
Operator Fee Schedule

Grade	*Examination Fee ($)*	*Reexamination Fee ($)*	*Certification Fee ($)*	*Triennial Renewal Fee ($)*
D1 or T1	50	30	70	70
D2 or T2	65	45	80	80
D3 or T3	100	70	120	120
D4 or T4	130	95	140	140
D5 or T5	155	120	140	140

(d) Operators who are certified or have been notified by the Department that they have met requirements for certification as both treatment and distribution operators shall pay the certification and renewal fees specified in Table 63850-B for each certificate.

Table 63850-B.
Fee Schedule for Operators With Multiple Certificates

Grade	*Certification Fee ($) per Certificate*	*Triennial Renewal Fee ($) per Certificate*
D1 or T1	55	55
D2 or T2	60	60
D3 or T3	90	90
D4 or T4	105	105
D5 or T5	105	105

(e) The fee schedule for interim distribution operator certification is in Table 63850-C. The fees specified in this subsection may be paid by a single check or money order for all operators included in the application.

Table 63850-C.
Interim Operator Fee Schedule

Grade	*Certification Fee ($)*	*Triennial Renewal Fee ($)*
D1	70	70
D2	80	80
D3	120	120
D4	140	140
D5	140	140

(f) The fee schedule for distribution operators holding valid CNAWWA certificates pursuant to 63850(b) is in Table 63850-D.

Table 63850-D.
CNAWWA Certification Fees

CNAWWA Grade	*Biennial Renewal Fee Due in 2001 – valid*

	for two years
1	80
2	100
3	120
4	120

(g) A penalty fee of $50 shall be paid for renewals submitted or resubmitted after the renewal due date but at least 45 days prior to the expiration date. A penalty fee of $100 shall be paid for renewals submitted or resubmitted less than 45 days prior to the expiration date but within 1 year after the expiration date.

(h) A certificate replacement fee of $25 shall be paid by any certificate holder requesting to have a lost, stolen, or destroyed certificate replaced.

CHAPTER 14. WATER PERMITS

Article 1. Applications

§64001. Water Permit Application.

(a) Within 30 calendar days of receipt of an application for a permit or petition for permit modification pursuant to Section 40118 or 40199, Health and Safety Code, the Department shall inform the applicant in writing that it is either complete and accepted for filing or that it is deficient and what specific information or documentation is required to complete the application. An application is considered complete if it is in compliance with the requirements of Section 401210, Health and Safety Code. For proposed water system improvements, new water systems or a "project" as defined in Section 15378, Title 14, California Administrative Code where environmental documentation is required, a copy of such documentation shall be included in the application.

(b) Within 90 calendar days from the date of filing of a completed application, the Department shall inform the applicant in writing of its decision regarding an application.

§64002. Processing Time.

The Department's time periods for processing an application from the receipt of the initial application to the final decision regarding issuance or denial of a water permit based on the Department's actual performance during the two years preceding the proposal of this section, were as follows:

(a) The median time was--7.5 months

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8 Section 4011 has been recodified to 116525. OAL has been notified of this by request for a "change without regulatory effect".

9 Section 4019 has been recodified to 116550. OAL has been notified of this by request for a "change without regulatory effect".

10 Section 4012 has been recodified to 116530. OAL has been notified of this by request for a "change without regulatory effect".

(b) The minimum time was--1.5 months

(c) The maximum time was--85.5 months

§64197. Service Connection Fee.

(a) Each public water system serving at least 200 service connections shall pay to the Department a one time fee of fifty cents ($0.50) for each service connection it serves. The fee shall be submitted to the Department no later than April 30, 1991.

(b) The fee shall be based on the number of service connections previously reported to the Department for the calendar year 1989.

Article 3. State Small Water Systems

§64211. Permit Requirement.

(a) No person shall operate a state small water system unless a permit to operate the system has been issued by the local health officer. Within 30 calendar days of receipt of an application for a permit, the local health officer shall inform the applicant in writing that the application is either complete and accepted for filing or that it is deficient and what specific information or documentation is required to complete the application.

(b) The state small water system shall submit a technical report to the local health officer as part of the permit application. The report shall describe the proposed or existing system as follows: service area, distribution system including storage and pumping facilities, the water source including source capacity, water quality, and any water treatment facilities. The report shall identify the owner of the system and the party responsible for day to day operation of the system. The report shall include a plan for notification of those served by the system under emergency conditions. The report shall describe the operating plan for the system and shall specify how the responsible party will respond to failure of major system components.

(c) Within 90 calendar days from the date of filing of a completed application, the local health officer shall inform the applicant in writing of its decision regarding an application.

(d) A change in ownership of a state small water system shall require the submission of a new application.

(e) By July 1, 1992, each state small water system in existence on January 1, 1992, shall submit to the local health officer a plan for notification of those served by the system under emergency conditions.

(f) Each state small water system shall provide the following notice to the consumers served by the state small water system: "The domestic water supply for this area is provided by a state small water system. State regulatory requirements for operation of a state small water system are less extensive than requirements for larger public water systems. If you have questions concerning your water supply, you should contact [insert (1) name of water system, (2) name of responsible person, and (3) telephone number] or your local health department." This notice shall

be by direct delivery on an annual basis or by continuous posting at a central location within the area served by the state small water system.

§64212. Bacteriological Quality Monitoring.

(a) Each water supplier operating a state small water system shall collect a minimum of one routine sample from the distribution system at least once every three months. The sample shall be analyzed for the presence of total coliform bacteria by a laboratory certified by the Department for bacteriological analyses pursuant to Section 402511 of the Health and Safety Code. The results of the analyses shall be reported to the local health officer no later than the 10th day of the month following receipt of the results by the state small water system.

(b) If any routine sample is total coliform-positive, the water supplier shall collect a repeat sample from the same location within 48 hours of being notified of the positive result. If the repeat sample is also total coliform-positive, the sample shall also be analyzed for the presence of fecal coliforms or Escherichia coli (E. Coli). The water supplier shall notify the local health officer within 48 hours from the time the results are received and shall take corrective actions as directed by the local health officer to eliminate the cause of the positive samples.

(c) The local health office may require a state small water system to sample the distribution system each month, in lieu of the requirements of subsection (a), if the system has bacteriological contamination problems indicated by more than one total-coliform positive sample during the most recent 24 months of operation. The monthly sample shall be analyzed for the presence of total coliform bacteria by a laboratory certified by the Department for bacteriological analyses pursuant to Section 402512 of the Health and Safety Code. The results of the analyses shall be reported to the local health officer no later than the 10th day of the month following receipt of the results by the state small water system.

§64213. Chemical Quality Monitoring.

(a) Each water supplier operating a state small water system shall sample each source of supply prior to any treatment at least once. The sample shall be analyzed by a laboratory, certified by the Department pursuant to Section 4025[17] of the Health and Safety Code, for fluoride, iron, manganese, chlorides, total dissolved solids, and the inorganic chemicals listed in Table 64431-A, Section 64431(a).

(b) Each groundwater source which has been designated as vulnerable by the local health officer pursuant to criteria set forth in Sections 64445(d)(1) and (2) shall be sampled by the water supplier operating the state small water system at least once prior to any treatment and analyzed for volatile organic compounds according to Environmental Protection Agency Method 502.2, "Methods for the Determination of Organic Compounds in Finished Drinking Water and Raw Source Water," September 1986. The analysis shall be performed by a laboratory certified by the

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11 Section 4025 has been recodified to 116390. OAL has been notified of this by request for a "change without regulatory effect".
12 Section 4025 has been recodified to 116390. OAL has been notified of this by request for a "change without regulatory effect".

Department to perform Method 502.2 analyses for organic chemicals pursuant to Section 4025[17] of the Health and Safety Code.

(c) The results of the laboratory analyses shall be submitted to the local health officer by the state small water system no later than the 10th day of the month following receipt of the results by the state small water system. A copy of the results of the analyses and a comparison of the results with the maximum contaminant levels for those contaminants listed in Table 64431-A and B, Section 64431(a) and Table 64444-A, Section 64444 shall be distributed by the state small water system to each regular user of the water system within 90 days of receiving the results. A copy of the distribution notice shall be provided to the local health officer.

(d) The water supplier operating a state small water system shall comply with any corrective actions ordered by the local health officer for any chemical contaminant which exceeds the maximum contaminant level.

§64214. Service Connection Limitation.
No state small water system shall add additional service connections to the system such that the total number of service connections served by the system exceeds 14 before the water system has applied for and received a permit to operate as a public water system from the Department.

§64215. Water Supply Requirements.
Prior to receiving permit approval, a state small water system which was not in existence on November 12, 1991 shall demonstrate to the local health officer that sufficient water is available from the water system's sources and distribution storage facilities to supply a minimum of three gallons per minute for at least 24 hours for each service connection served by the system.

§64216. Mutual Associations Prohibited.
No state small water system which was not in existence on November 12, 1991 shall be issued a permit to operate if the water supplier is an unincorporated association organized under Title 3 (commencing with Section 20000) of Division 3 of the Corporations Code.

§64217. Surface Water Treatment Requirement.
All state small water systems using surface water as a source of supply shall provide continuous disinfection treatment of the water prior to entry to the distribution system.

Article 4. Local Primacy Delegation

§64251. Definitions.

(a) For the purpose of this Article the following definitions shall apply:

(1) "Small Water System" means a community water system except those serving 200 or more service connections, or any noncommunity or nontransient noncommunity water system.

(2) "Primacy Delegation Agreement" means the document, issued by the department and signed by the local health officer, delegating primacy to a local health officer.

(3) "Routine Inspection" means an on-site review of a small water system which includes, but is not limited to, inspections of system operations, operation and maintenance records, system facilities and equipment.

(4) "Sanitary Survey" means an on-site review of a small water system which includes, in addition to the elements of a routine inspection, an evaluation of the watershed for surface water sources and vulnerability assessments for groundwater sources.

§64252. Primacy Delegation Application.

(a) The primacy delegation application submitted by a local health officer pursuant to section 116330 of the Health and Safety Code shall describe how the primacy requirements of this article will be complied with and shall contain the following information relating to the small water system program to be delegated:

(1) The number of staff persons, percentage of time and personnel classification of each staff person, and a description of the program responsibilities of each person involved in the small water system program.

(2) A proposed program budget projecting both revenues and expenditures for the first year of the program. The expenditures categories shall include personnel, general expense (i.e. rent, supplies and communications), travel, equipment, data management, any other specific services to be provided (e.g. laboratory), administrative overhead and other indirect charges. The anticipated revenues shall specify all planned sources of revenues to be used for support of the small water system program.

(3) A description of engineering and legal resources to be used in conducting the program.

(4) A description of the electronic data management system to be used to comply with the requirements of section 64256 (e) and the compatibility of the proposed system with the data management system used by the department.

(5) A description of the current status of compliance with Division 5, Part 1, Chapter 7; Division 104, Part 1, Chapters 4 and 5; Division104, Part 12, Chapters 1 through 6 of the Health and Safety Code and California Code of Regulations, Title 22, Division 4 Chapters 15, 17, and 17.5 of the small water systems within the county. This description shall include the following:

(A) All violations of drinking water monitoring or reporting requirements by any of the systems during the 12 months preceding the submission of the application for primacy.

(B) All violations of standards of California Code of Regulations, Title 22, Division 4, Chapters 15, 17, and 17.5 during the 12 months preceding the submission of the application for primacy.

(C) All enforcement actions against small water systems taken by the county during the 12 months preceding the submission of the application for primacy.

(6) A current inventory list of the small water systems within the county. For each small water system the inventory list shall specify the system name, water system identification number, mailing address, type of system (community, nontransient noncommunity or noncommunity), name and address and phone number of the responsible party, type of ownership, type of water source, type of treatment if any, dates of operation for seasonally operated systems, and either:

(A) for a community water system, the number of service connections; or

(B) for a noncommunity or nontransient noncommunity water system, the average monthly population served.

(b) For applications submitted by March 1, 1993, the primacy application shall demonstrate that the local primacy program requirements specified in Article 4.1, sections 64253 through 64258 will be complied with by June 30, 1994. If these requirements cannot be fully complied with by June 30, 1994, the application shall set forth a priority implementation schedule for activities to be conducted such that the program requirements will be fully complied with by June 30, 1995.

(c) For applications submitted for fiscal years subsequent to the fiscal year 1993-94, the application shall demonstrate that the local primacy agency will be able to immediately undertake the activities specified as local primacy program requirements in section 64253 at the time of delegation.

(d) The application shall be signed by the local health officer or by a local official with the authority to submit the application on behalf of the county.

(e) Within 15 working days of receipt of an application for local primacy delegation the department shall inform the applicant in writing that the application is either complete and accepted for filing, or that it is deficient and what specific information or documentation is required to complete the application.

(f) Within 5 working days of being notified of deficiencies in its application the local health officer shall resubmit an application with the deficient items included or corrected.

(g) Within 15 working days of receipt of the resubmitted application the department shall determine that the application is complete or reject the application as incomplete and find that the local health officer is not capable of meeting the primacy program requirements.

(h) Within 20 working days of being notified that the application is complete the local health officer shall submit the annual workplan required pursuant to section 64260.

(i) Within 20 working days from the date the workplan is submitted the department shall inform the applicant in writing of its determination regarding the local health officer's capability of meeting the primacy program requirements.

§64253. Local Primacy Agency Minimum Program Requirements.
Each local primacy agency shall conduct a regulatory program for small water systems within its jurisdiction that complies with all of the requirements set forth in sections 64254, 64255, 64256, 64257, and 64258.

§64254. Permits.
(a) Each local primacy agency shall issue and maintain a valid drinking water permit for all small water systems within its jurisdiction in accordance with Sections 116525 through 116550 of the Health and Safety Code. The permit shall include terms and conditions, including compliance schedules, that are necessary to assure that water served will comply with Division 5, Part 1, Chapter 7; Division 104, Part 1, Chapters 4 and 5; Division 104, Part 12, Chapters 1

through 6 of the Health and Safety Code, and Title 22, Division 4, Chapters 15, 16, 17, and 17.5, and Title 17, Division 1, Chapter 5, Groups 2 and 4 of the California Code of Regulations.

(b) All existing permits shall be reviewed and updated as necessary at least every ten years.

(c) A copy of all permit applications for proposed new community water systems under the jurisdiction of the local primacy agency that are designed to serve 200 or more service connections shall be submitted to the department. The local primacy agency shall not issue a permit for these systems unless the department concurs that the systems are capable of complying with Division 5, Part 1, Chapter 7; Division 104, Part 1, Chapters 4 and 5; Division 104, Part 12, Chapters 1 through 6 of the Health and Safety Code, and Title 22, Division 4, Chapters 15, 16, 17, and 17.5, and Title 17, Division 1, Chapter 5, Groups 2 and 4 of the California Code of Regulations.

§64255. Surveillance.

(a) The local primacy agency shall establish and maintain an inventory of all small water systems under its jurisdiction. The inventory shall be updated at least annually and shall include the following information for each system:

(1) All of the information specified in section 64252(a)(6).

(2) The name and telephone number of the operator of any treatment facilities utilized by the system.

(3) A copy of the current emergency notification plan required pursuant to section 4029 of the Health and Safety Code.

(b) The local primacy agency shall conduct a routine inspection of each small water system within its jurisdiction as follows:

(1) At least once every two years on each small water system utilizing a surface water source as defined in section 64651.10.

(2) At least once every two years on each small water system utilizing groundwater that is treated in order to meet drinking water standards.

(3) At least once every five years on each small water system utilizing groundwater without treatment.

(c) Each local primacy agency shall conduct a sanitary survey of each small water system within its jurisdiction at least once every five years. A sanitary survey may be conducted in lieu of any routine inspection.

(d) The local primacy agency shall identify any deficiencies found during the routine inspection or sanitary survey and shall submit a follow-up notice to the small water system describing such deficiencies and prescribing a time schedule for corrective action. The notice shall be sent to the small water system within 60 days of the routine inspection or sanitary survey.

(e) The local primacy agency shall complete a routine inspection or sanitary survey report for each routine inspection or sanitary survey conducted within 90 days of completion of the sanitary survey or routine inspection.

(f) The local primacy agency shall determine which small water systems under its jurisdiction utilize surface water or groundwater under the direct influence of surface water and are subject to surface water treatment requirements as specified in section 64650.

§64256. Sampling and Monitoring.

(a) The local primacy agency shall notify each small water system under its jurisdiction in writing of the monitoring requirements for that system pursuant to Title 22, Division 4, Chapters 15, 17, and 17.5 of the California Code of Regulations. The notice shall identify the specific contaminants to be monitored, the type of laboratory analyses required for each contaminant, the frequency of sampling and any other sampling and reporting requirements applicable to that system.

(b) The local primacy agency shall ensure that each small water system under its jurisdiction complies with the sample siting plan requirements of section 64422.

(c) The local primacy agency shall establish a tracking system to assure that all required sampling and laboratory analyses are completed and reported by the small water systems pursuant to Title 22, Division 4, Chapters 15, 17, and 17.5 of the California Code of Regulations. The tracking system shall include the date the sample was collected, the type or purpose of the sample, and the laboratory result.

(d) An ongoing record of the status of compliance with monitoring and reporting requirements of California Code of Regulations, Title 22, Division 4, Chapters 15, 17, and 17.5 of each small water system shall be maintained by the local primacy agency.

(e) A system shall be established by the local primacy agency to assure that the water quality monitoring data submitted by the small water systems is routinely reviewed for compliance with the requirements of Title 22, Division 4, Chapters 15, 17, and 17.5 of the California Code of Regulations. The monitoring reports shall be reviewed each month for each small water system and the data entered into the data management system at least monthly.

§64257. Reporting.

(a) The following reports shall be submitted monthly in an electronic data format to the department no later than the last day of the month following the period being reported:

(1) A report listing all small water systems that failed during the previous month to comply with drinking water monitoring and reporting regulations of Title 22, Division 4, Chapters 15, 17, and 17.5 of the California Code of Regulations.

(2) A compliance report containing the following information for each small water system under the jurisdiction of the local primacy agency that is in violation of Title 22, Division 4, Chapters 15, 17, and 17.5 of the California Code of Regulations:

(A) The name and water system identification number of the system.

(B) A description of the type of violation and the standard violated.

(C) A description of any enforcement action taken by the local primacy agency with respect to the violation.

(b) The following reports shall be submitted quarterly in an electronic data format to the department no later than the last day of the quarter following the quarter being reported:

(1) A list of domestic water supply permits for small water systems that have been issued, amended or renewed during the reporting period. The list shall include the name and the identification number of the water system.

(2) A list of the small water systems for which a routine inspection or sanitary survey was conducted during the reporting period. The list shall indicate the name and identification number of the small water system and the type of routine inspection or sanitary survey performed.

(c) An updated inventory of small water systems under the jurisdiction of the local primacy agency shall be submitted annually in an electronic format to the department no later than August 15 of each year.

§64258. Enforcement.

(a) The local primacy agency shall take enforcement actions as necessary to assure that all small water systems under the jurisdiction of the local primacy agency are in compliance with Division 5, Part 1, Chapter 7; Division 104, Part 1, Chapters 4 and 5; Division 104, Part 12, Chapters 1 through 6 of the Health and Safety Code, and California Code of Regulations, Title 17, Division 1, Chapter 5, Groups 2 and 4, and Title 22, Division 4, Chapters 14, 15, 16, 17, and 17.5.

(b) Each local primacy agency shall notify each small water system under their jurisdiction of any new state or federal drinking water requirements applicable to those systems.

§64259. Program Management.

(a) Each local primacy agency shall establish and maintain a time accounting system for determining the amount of reimbursement to be billed to each small water system pursuant to section 4019.40 of the Health and Safety Code. The hourly cost rate of the local primacy agency shall be determined using the criteria set forth in section 4019.35 (b) of the Health and Safety Code.

(b) Each local primacy agency shall establish and maintain an individual file for each small water system under its jurisdiction. The following information shall be maintained in the file:

(1) The current operating permit and all technical reports supporting it.

(2) Permit applications, permit technical reports, permits and amended permits for a minimum of 10 years.

(3) The most recent plans, specifications and other information submitted by the water system pertaining to sources of supply, treatment works, storage facilities, and distribution system, including water quality monitoring plans and total coliform siting plans.

(4) Inspection and sanitary survey reports for a minimum of 10 years.

(5) Copies of bacteriological water quality analyses for a minimum of 5 years; copies of all other water quality analyses for a minimum of 10 years.

(6) Correspondence, memoranda and other written records pertaining to the system issued or written within the past three years.

(7) Copies of all compliance orders, citations, court actions and other enforcement documentation.

§64260. Workplans.

(a) Each local primacy agency shall develop and submit to the department a proposed annual program workplan for the upcoming fiscal year. The local primacy agency shall submit the proposed annual workplan to the department no later than May 1 of each year for the fiscal year commencing July 1 of that year; except for the initial proposed annual workplan submitted in accordance with section 64252.

(b) The workplan developed pursuant to subsection (a) shall describe the activities proposed to be performed by the local primacy agency during the forthcoming fiscal year and shall include:

(1) The anticipated number of new small water system permits to be issued and the proposed number of existing community or noncommunity permits (designated by category) to be updated or amended.

(2) A description of how the small water system inventory specified in section 64255 (a) will be maintained.

(3) A description of how the surveillance activities specified in section 64255 (b) through (f) will be conducted and the priorities to be used in determining the activities to be performed.

(4) The number of planned routine inspections and sanitary surveys to be performed for each category of small water systems (community, noncommunity and nontransient noncommunity).

(5) A listing of small water systems proposed for enforcement action and the priorities to be used in determining these systems.

CHAPTER 15. DOMESTIC WATER QUALITY AND MONITORING REGULATIONS

Article 1. Definitions

§64400. Acute Risk.

"Acute risk" means the potential for a contaminant or disinfectant residual to cause acute health effects, i.e., death, damage or illness, as a result of a single period of exposure of a duration measured in seconds, minutes, hours, or days.

§64400.10. Community Water System.

"Community water system" means a public water system which serves at least 15 service connections used by yearlong residents or regularly serves at least 25 yearlong residents.

§64400.20. Compliance Cycle.

"Compliance cycle" means the nine-year calendar year cycle during which public water systems shall monitor. Each compliance cycle consists of three three-year compliance periods. The first calendar year cycle began January 1, 1993 and ends December 31, 2001; the second begins

January 1, 2002 and ends December 31, 2010; the third begins January 1, 2011 and ends December 31, 2019.

§64400.25. Compliance Period.
"Compliance period" means a three-year calendar year period within a compliance cycle. Within the first compliance cycle, the first compliance period runs from January 1, 1993 to December 31, 1995; the second from January 1, 1996 to December 31, 1998; the third from January 1, 1999 to December 31, 2001.

§64400.28. Confluent Growth.
"Confluent growth" means a continuous bacterial growth covering the entire filtration area of a membrane filter, or a portion thereof, in which bacterial colonies are not discrete.

§64400.30. Customer.
"Customer" means a service connection to which water is delivered by a community water system or a person that receives water from a nontransient-noncommunity water system for more than six months of the year.

§64400.32. Detected.
"Detected" means at or above the detection limit for purposes of reporting (DLR).

§64400.34. Detection Limit for Purposes of Reporting (DLR).
"Detection limit for purposes of reporting (DLR)" means the designated minimum level at or above which any analytical finding of a contaminant in drinking water resulting from monitoring required under this chapter shall be reported to the Department.

§64400.38. Enhanced Coagulation.
"Enhanced coagulation" means the addition of sufficient coagulant for improved removal of disinfection byproduct precursors by conventional filtration treatment.

§64400.40. Enhanced Softening.
"Enhanced softening" means the improved removal of disinfection byproduct precursors by precipitative softening.

§64400.42. Fluoridation.
"Fluoridation" means the addition of fluoride to drinking water to achieve an optimal level, pursuant to Section 64433.2, that protects and maintains dental health.

§64400.45. GAC10.
"GAC10" means granular activated carbon filter beds with an empty-bed contact time of 10 minutes based on average daily flow and a carbon reactivation frequency of every 180 days.

§64400.47. Haloacetic Acids (Five) or HAA5.
"Haloacetic acids (five)" or "HAA5" means the sum of the concentrations in milligrams per liter (mg/L) of the haloacetic acid compounds (monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid), rounded to two significant figures after addition.

§64400.50. Initial Compliance Period.
"Initial compliance period" means the first full three-year compliance period which began January 1, 1993, for existing systems. For new systems, the "initial compliance period" means the period in which the Department grants the permit.

§64400.60. Initial Finding.
"Initial finding" means the first laboratory result from a water source showing the presence of an organic chemical listed in §64444, Table 64444-A.

§64400.65. IOC.
"IOC" means inorganic chemical.

§64400.67. Maximum Residual Disinfectant Level or MRDL.
"Maximum residual disinfectant level" or "MRDL" means a level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

§64400.70. MCL.
"MCL" means maximum contaminant level.

§64400.80. Nontransient-noncommunity Water System.
"Nontransient-noncommunity water system" means a public water system that is not a community water system and that regularly serves at least the same 25 persons over 6 months per year.

§64401. Repeat Compliance Period.
"Repeat compliance period" means any subsequent compliance period after the initial compliance period.

§64401.10. Repeat Sample.
"Repeat sample" means a required sample collected following a total coliform-positive sample.

§64401.20. Replacement Sample.
"Replacement sample" means a sample collected to replace an invalidated sample.

§64401.30. Routine Sample.
"Routine sample" means a bacteriological sample the water supplier is required to collect on a regular basis, or one which the supplier is required to collect for a system not in compliance with Sections 64650 through 64666 when treated water turbidity exceeds 1 nephelometric turbidity unit (NTU), pursuant to §64423(b).

§64401.40. Sanitary Survey.
"Sanitary survey" means an on-site review of a public water system for the purpose of evaluating the adequacy of the water source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water.

§64401.50. Significant Rise in Bacterial Count.
"Significant rise in bacterial count" means an increase in coliform bacteria, as determined in §64426, when associated with a suspected waterborne illness or disruption of physical works or operating procedures.

§64401.55. SOC.
"SOC" means synthetic organic chemical.

§64401.60. Standby Source.
"Standby source" means a source which is used only for emergency purposes pursuant to §64414.

§64401.65. SUVA.
"SUVA" means Specific Ultraviolet Absorption at 254 nanometers (nm), an indicator of the humic content of a water. It is calculated by dividing a sample's ultraviolet absorption at a wavelength of 254 nm (UV_{254}) (in m^{-1}) by its concentration of dissolved organic carbon (DOC) (in mg/L).

§64401.70. System with a Single Service Connection.
"System with a single service connection" means a system which supplies drinking water to consumers via a single service line.

§64401.75. Too Numerous to Count.
"Too numerous to count" means that the total number of bacterial colonies exceeds 200 on a 47-mm diameter membrane filter used for coliform detection.

§64401.80. Total Coliform-positive.
"Total coliform-positive" means a sample result in which the presence of total coliforms has been demonstrated.

§64401.82. Total Organic Carbon or TOC.
"Total organic carbon" or "TOC" means total organic carbon reported in units of milligrams per liter (mg/L), as measured using heat, oxygen, ultraviolet irradiation, chemical oxidants, or combinations of these oxidants that convert organic carbon to carbon dioxide, rounded to two significant figures.

§64401.85. Transient-noncommunity Water System.
"Transient-noncommunity water system" means a public water system that is not a community water system or a nontransient-noncommunity water system.

§64401.90. Treatment.
"Treatment" means physical, biological, or chemical processes, including blending, designed to affect water quality parameters to render the water acceptable for domestic use.

§64401.92. Total Trihalomethanes or TTHM.
"Total Trihalomethanes" or "TTHM" means the sum of the concentrations in milligrams per liter (mg/L) of the trihalomethane compounds (bromodichloromethane, bromoform, chloroform, and dibromochloromethane), rounded to two significant figures after addition.

§64401.95. VOC.
"VOC" means volatile organic chemical.

§64402. Vulnerable System.
"Vulnerable system" means a water system which has any water source which in the judgement of the Department, has a risk of containing an organic contaminant, based on an assessment as set forth in §64445(d)(1).

§64402.10. Water Source.
"Water source" means an individual groundwater source or an individual surface water intake. Sources which have not been designated as standby sources shall be deemed to be water sources.

§64402.20. Water Supplier.
"Water supplier", "person operating a public water system" or "supplier of water" means any person who owns or operates a public water system. These terms will be used interchangeably in this chapter.

(a) "Wholesale water supplier," or "wholesaler" means any person who treats water on behalf of one or more public water systems for the purpose of rendering it safe for human consumption.

(b) "Retail water supplier," or "retailer" means

(1) Any person who owns or operates any distribution facilities and any related collection, treatment, or storage facilities under the control of the operator of the public water system which are used primarily in connection with the public water system; or

(2) Any person who owns or operates any collection or pretreatment storage facilities not under the control of the operator of the public water system which are used primarily in connection with the public water system.

(3)

Article 2. General Requirements

§64412. Determination of Persons Served.

(a) The number of persons served by a community water system shall be determined by the water system using one of the following methods:

(1) Utilizing the most recent United States census data, or more recent special census data certified by the California Department of Finance, for the service area served by the water system;

(2) Multiplying the number of service connections served by the water system by 3.3 to determine the total population served;

(3) Determining the total number of dwelling units or efficiency dwelling units as defined in the Uniform Building Code (Title 24, California Code of Regulations), the number of mobile home park spaces and the number of individual business, commercial, industrial and institutional billing units served by the water system and multiplying this total by 2.8 to arrive at the total population served by the system.

(b) Each community water system shall report to the Department annually the number of persons and the number of service connections served by the system using the procedures set forth in subsection (a).

§64413.1. Classification of Water Treatment Facilities.

(a) Each water treatment facility shall be classified pursuant to Table 64413.1-A based on the calculation of total points for the facility using the factors specified in subsection(b).

Table 64413.1-A.
Water Treatment Facility Class Designations

Total Points	*Class*
Less than 20	T1
20 through 39	T2
40 through 59	T3
60 through 79	T4
80 or more	T5

(b) The calculation of total points for each water treatment facility shall be the sum of the points derived in each of paragraphs (1) through (13) except where a treatment facility treats more than one source, in which case the source with the highest average of each contaminant shall be used to determine the point value in paragraphs (2) through (5).

(1) For water source, the points are determined pursuant to Table 64413.1-B.

Table 64413.1-B.
Points for Source Water Used by the Facility

Type of source water used by the facility	*Points*
Groundwater and/or purchased treated water meeting primary and secondary drinking water standards, as defined in § 116275 of the Health and Safety Code	2
Water that includes any surface water or groundwater under the direct influence of surface water	5

(2) For influent microbiological water quality, points shall be determined by using the median of all total coliform analyses completed in the previous 24 months pursuant to Table 64413.1-C:

Table 64413.1-C.
Influent Water Microbiological Quality Points

Median Coliform Density Most Probable Number Index (MPN)	*Points*
less than 1 per 100 mL	0
1 through 100 per 100 mL	2
greater than 100 through 1,000 per 100 mL	4
greater than 1,000 through 10,000 per 100 mL	6
greater than 10,000 per 100 mL	8

(3) For facilities treating surface water or groundwater under the direct influence of surface water, points for influent water turbidity shall be determined pursuant to Table 64413.1-D on the basis of the previous 24 months of data, except that if turbidity data is missing for one or more of the months, the points given for turbidity shall be 5. The maximum influent turbidity sustained for at least one hour according to an on-line turbidimeter shall be used unless such data is not available, in which case, the maximum influent turbidity identified by grab sample shall be used. For facilities that have not been in operation for 24 months, the available data shall be used. For facilities whose permit specifies measures to ensure that influent turbidity will not exceed a specified level, the points corresponding to that level shall be assigned.

Table 64413.1-D.
Influent Water Turbidity Points

Maximum Influent Turbidity Level Nephelometric Turbidity Units (NTU)	*Points*
Less than 15	0
15 through 100	2
Greater than 100	5

(4) The points for influent water nitrate and nitrite levels shall be determined by an average of the three most recent sample results, pursuant to Table 64413.1-E.

Table 64413.1-E.
Influent Water Nitrate and Nitrite Points

Nitrate and Nitrite Data Average	*Points*
Less than or equal to the maximum contaminant level (MCL), as specified in Table 64431-A	0

Greater than the MCL	5

(5) The points for other influent water contaminants with primary MCLs shall be a sum of the points for each of the inorganic contaminants (Table 64431-A), organic contaminants (Table 64444-A) and radionuclides (Table 4, §64443). The points for each contaminant shall be based on an average of the three most recent sample results, pursuant to Table 64413.1-F. If monitoring for a contaminant has been waived pursuant to §s 64432(k), 64432.2(c), or 64445(d), the points shall be zero for that contaminant.

Table 64413.1-F.
Influent Water Chemical and Radiological Contaminant Points

Contaminant Data Average	*Points*
Less than or equal to the MCL	0
Greater than the MCL	2
5 Times the MCL or greater	5

(6) The total points for surface water filtration treatment shall be the sum of the points of those treatment processes utilized by the facility for compliance with §64652, pursuant to Table 64413.1-G.

Table 64413.1-G.
Points for Surface Water Filtration Treatment

Treatment	*Points*
Conventional, direct, or inline	15
Diatomaceous earth	12
Slow sand, membrane, cartridge, or bag filter	8
Backwash recycled as part of process	5

(7) The points for each treatment process utilized by the facility and not included in paragraph (6) that is used to reduce the concentration of one or more contaminants for which a primary MCL exists, pursuant to Table 64431-A, Table 64444-A, and Table 4 of §64443, shall be 10. Blending shall only be counted as a treatment process if one of the blended sources exceeds a primary MCL.

(8) The points for each treatment process not included in paragraphs (6), or (7) that is used to reduce the concentration of one or more contaminants for which a secondary MCL exists, pursuant to Tables 64449-A and 64449-B, shall be 3. Blending shall only be counted as a treatment process if one of the blended sources exceeds a secondary MCL.

(9) The points for each treatment process not included in paragraphs (6), (7), or (8) that is used for corrosion control or fluoridation shall be 3.

(10) The total points for disinfection treatment shall be the sum of the points for those treatment processes utilized by the facility for compliance with §64654(a), pursuant to Table 64413.1-H.

Table 64413.1-H.
Points for Disinfection Treatment

Treatment Process	*Points*
Ozone	10
Chlorine and/or chloramine	10
Chlorine dioxide	10
Ultra violet (UV)	7

(11) The points for disinfection/oxidation treatment not included in paragraphs (6), (7), (8), or (10) shall be a sum of the points for all the treatment processes used at the facility pursuant to Table 64413.1-I.

Table 64413.1-I.
Points for Disinfection/Oxidation Treatment without Inactivation Credit

Treatment Process	*Points*
Ozone	5
Chlorine and/or chloramine	5
Chlorine dioxide	5
Ultra violet (UV)	3
Other oxidants	5

(12) The points for any other treatment process that alters the physical or chemical characteristics of the drinking water and that was not included in paragraphs (6), (7), (8), (9), (10), or (11) shall be 3.

(13) The points for facility flow shall be 2 per million gallons per day or fraction thereof of maximum permitted treatment facility capacity, up to a maximum of 50 points; except that for facilities utilizing only blending, the points shall be based on the flow from the contaminated source and the dilution flow required to meet the MCL(s) specified in Tables 64431-A, 64444-A, 64449-A, 64449-B, and Table 4 of §64443.

§64413.3. Classification of Distribution Systems.

(a) The distribution system for each community and nontransient- noncommunity water system shall be classified pursuant to Table 64413.3-A unless modified pursuant to subsection(b). For a wholesaler, the population served shall include the customers served by its retailers.

Table 64413.3-A.
Distribution System Classifications

Population Served	*Class*
1,000 or less	D1
1,001 through 10,000	D2
10,001 through 50,000	D3

50,001 through 5 million	D4
Greater than 5 million	D5

(b) The class determined pursuant to (a) shall be upgraded by one level if the population served is 5 million or less and the sum of all the points from paragraphs (1) through (6) exceeds 20.

(1) The points for pressure zones shall be zero for up to three zones, 4 for four to ten zones, or 6 for more than ten zones.

(2) The points for disinfectants used shall be zero if no disinfectant is applied in the distribution system and no more than one type of disinfectant residual is entering the distribution system. The points shall be 5 if a single disinfectant or ammonia is applied in the distribution system. The points shall be 8 if there are multiple disinfectants in the system.

(3) The points based on the largest single pump in the system for which the distribution operator is responsible shall be 4 for up to fifty horsepower, or 6 for fifty or more horsepower.

(4) The points for distribution storage reservoirs in the system shall be 4 for one to five reservoirs, or 6 for greater than five.

(5) The points for one or more existing uncovered distribution reservoirs shall be 10.

(6) The points to be added if any of the distribution system customers are also served by a non-potable water distribution system shall be 6. This does not apply to wholesalers if the only customers receiving non-potable water are served by its retailers.

§64413.5. Treatment Facility Staff Certification Requirements.

(a) Each water supplier shall designate at least one chief operator that meets the requirements specified in §63765 for each water treatment facility utilized by the water system.

(b) Each water supplier shall designate at least one shift operator that meets the requirements specified in §63765 for each water treatment facility utilized by the water system for each operating shift.

(c) Except as provided in (d), a chief operator or shift operator shall be on-site at all times that the facility is operating.

(d) If the water supplier's operations plan, submitted and approved pursuant to §64661, demonstrates an equal degree of operational oversight and reliability with either unmanned operation or operation under reduced operator certification requirements, the chief operator or shift operator is not required to be on-site, but shall be able to be contacted within one hour.

(e) If there is no change in the treatment facility and the employed shift and/or chief operators, the water supplier shall be in compliance until January 1, 2003 with the shift and operator certification requirements that were in effect on December 31, 2000. If the water system employs a new shift and/or chief operator, that operator shall meet the certification requirements pursuant to §63765(a).

§64413.7. Distribution System Staff Certification Requirements.

(a) Each water supplier shall designate at least one chief operator that meets the requirements specified in §63770 for each distribution system utilized by the water system.

(b) Each water supplier shall designate at least one shift operator that meets the requirements specified in §63770 for each distribution system utilized by the water system for each operating shift.

(c) The chief operator or shift operator shall be on-site or able to be contacted within one hour.

§64414. Standby Sources.

(a) A source which has been designated "standby" shall be monitored a minimum of once every compliance cycle for all inorganic, organic, and radiological MCLs, unless a waiver has been granted by the Department pursuant to §64432(k) or (l) for inorganics, or §64445(d) for organics.

(b) A standby source which has previous monitoring results indicating nitrate or nitrite levels equal to or greater than 50 percent of the MCL shall collect and analyze a sample for nitrate and nitrite annually. In addition, upon activation of such a source, a sample shall be collected, analyzed for these chemicals and the analytical results reported to the Department within 24 hours of activation.

(c) A standby source shall be used only for short-term emergencies of five consecutive days or less, and for less than a total of fifteen calendar days a year.

(d) Within 3 days after the short-term emergency use of a standby source, the water supplier shall notify the Department. The notification shall include information on the reason for and duration of the use.

(e) The status of a designated standby source shall not be changed to that of a regular source of drinking water supply, unless the source meets all existing drinking water standards and approval is obtained from the Department in advance.

§64415. Laboratory and Personnel.

(a) Required analyses shall be performed by laboratories approved to perform those analyses by the Department, pursuant to Section 116390, Health and Safety Code. Analyses shall be made in accordance with EPA approved methods as prescribed at 40 Code of Federal Regulations Sections 141.21 through 141.40, 141.41, 141.42, 141.66, and 141.89.

(b) Sample collection, and field tests including color, odor, turbidity, pH, temperature, and disinfectant residual shall be performed by a water treatment operator certified by the Department pursuant to Section 106875 of the Health and Safety Code or by personnel trained to collect samples and/or perform these tests by the Department, a certified laboratory, or a certified operator.

§64416. Sampling Plan for all Monitoring Except Bacteriological.

(a) Each public water system serving contiguous areas totalling more than 10,000 serviceconnections shall submit a plan to the Department for monitoring the quality of water.

(1) This plan shall be supported by analytical, hydrological and geological data, and may be developed in cooperation with other agencies or water suppliers.

(2) Constituents to be addressed in the plan shall include inorganic chemicals, organic chemicals, trihalomethanes, radioactivity, general minerals and general physical parameters.

(3) Sampling of certain wells on a rotating basis may be included in the plan if the water supplier is able to demonstrate with analytical, hydrological and geological data that those wells are producing similar quality water from the same aquifer.

(4) The water supplier shall submit an updated plan to the Department at least once every ten years or at any time the plan no longer ensures representative monitoring of the system.

§64417. Siting Requirements.

(a) A person operating a public water system shall notify the Department prior to making any financial commitment for or initiation of construction of a new public water system or increasing the capacity of an existing public water system. To the extent practicable, no part of a new or expanded facility shall be:

(1) Subject to pollution or contamination from any point or nonpoint sources.

(2) Subject to a significant risk from natural disasters which could cause a breakdown of the public water system or a portion thereof.

(3) Within the flood plain of a 100-year flood or lower than any recorded high tide, except for intake structures.

Article 3. Primary Standards--Bacteriological Quality

§64421. General Requirements.

(a) Each water supplier shall:

(1) Develop a routine sample siting plan as required in §64422;

(2) Collect routine, repeat and replacement samples as required in Sections 64423, 64424, and 64425;

(3) Have all samples analyzed by laboratories approved to perform those analyses by the Department and report results as required in §64423.1;

(4) Notify the Department when there is an increase in coliform bacteria in bacteriological samples as required in §64426; and

(5) Comply with the Maximum Contaminant Level as required in §64426.1.

(b) Water suppliers shall perform additional bacteriological monitoring as follows:

(1) After construction or repair of wells;

(2) After main installation or repair;

(3) After construction, repair, or maintenance of storage facilities; and

(4) After any system pressure loss to less than five psi. Samples collected shall represent the water quality in the affected portions of the system.

§64422. Routine Sample Siting Plan.

(a) By September 1, 1992, each water supplier shall develop and submit to the Department a siting plan for the routine collection of samples for total coliform analysis, subject to the following:

(1) The sample sites chosen shall be representative of water throughout the distribution system including all pressure zones, and areas supplied by each water source and distribution reservoir.

(2) The water supplier may rotate sampling among the sample sites if the total number of sites needed to comply with (a)(1) above exceeds the number of samples required according to Table 64423-A. The rotation plan shall be described in the sample siting plan.

(b) If personnel other than certified operators will be performing field tests and/or collecting samples, the sample siting plan shall include a declaration that such personnel have been trained, pursuant to §64415 (b).

(c) The supplier shall submit an updated plan to the Department at least once every ten years and at any time the plan no longer ensures representative monitoring of the system.

§64423. Routine Sampling.

(a) Each water supplier shall collect routine bacteriological water samples as follows:

(1) The minimum number of samples for community water systems shall be based on the known population served or the total number of service connections, whichever results in the greater number of samples, as shown in Table 64423-A. A community water system using groundwater which serves 25-1000 persons may request from the Department a reduction in monitoring frequency. The minimum reduced frequency shall not be less than one sample per quarter.

(2) The minimum number of samples for nontransient-noncommunity water systems shall be based on the known population served as shown in Table 64423-A during those months when the system is operating. A nontransient-noncommunity water system using groundwater which serves 25-1000 persons may request from the Department a reduction in monitoring frequency if it has not violated the requirements in this article during the past twelve months. The minimum reduced frequency shall not be less than one sample per quarter.

(3) The minimum number of samples for transient-noncommunity water systems using groundwater and serving 1000 or fewer persons a month shall be one in each calendar quarter during which the system provides water to the public.

(4) The minimum number of samples for transient-noncommunity water systems using groundwater and serving more than 1000 persons during any month shall be based on the known population served as shown in Table 64423-A, except that the water supplier may request from the Department a reduction in monitoring for any month the system serves 1000 persons or fewer. The minimum reduced frequency shall not be less than one sample in each calendar quarter during which the system provides water to the public.

(5) The minimum number of samples for transient-noncommunity water systems using approved surface water shall be based on the population served as shown in Table 64423-A. A system using groundwater under the direct influence of surface water shall begin monitoring at this frequency by the end of the sixth month after the Department has designated the source to be approved surface water.

(6) A public water system shall collect samples at regular time intervals throughout the month, except that a system using groundwater which serves 4,900 persons or fewer may collect all required samples on a single day if they are taken from different sites.

(b) In addition to the minimum sampling requirements, all water suppliers using approved surface water which do not practice treatment in compliance with Sections 64650 through 64666, shall collect a minimum of one sample before or at the first service connection each day during which the turbidity level of the water delivered to the system exceeds 1 NTU. The sample shall be collected within 24 hours of the exceedance and shall be analyzed for total coliforms. If the water supplier is unable to collect and/or analyze the sample within the 24-hour time period because of extenuating circumstances beyond its control, the supplier shall notify the Department within the 24-hour time period and may request an extension. Sample results shall be included in determining compliance with the MCL for total coliforms in §64426.1.

(c) If any routine, repeat, or replacement sample is total coliform-positive, then the water supplier shall collect repeat samples in accordance with §64424 and comply with the reporting requirements specified in Sections 64426 and 64426.1.

Table 64423-A
Minimum Number of Routine Total Coliform Samples

Monthly Population Served	*Service Connections*	*Minimum Number of Samples*
25 to 1000	15 to 400	1 per month
1,001 to 2,500	401 to 890	2 per month
2,501 to 3,300	891 to 1,180	3 per month
3,301 to 4,100	1,181 to 1,460	4 per month
4,101 to 4,900	1,461 to 1,750	5 per month
4,901 to 5,800	1,751 to 2,100	6 per month
5,801 to 6,700	2,101 to 2,400	7 per month
6,701 to 7,600	2,401 to 2,700	2 per week
7,601 to 12,900	2,701 to 4,600	3 per week
12,901 to 17,200	4,601 to 6,100	4 per week
17,201 to 21,500	6,101 to 7,700	5 per week
21,501 to 25,000	7,701 to 8,900	6 per week
25,001 to 33,000	8,901 to 11,800	8 per week
33,001 to 41,000	11,801 to 14,600	10 per week
41,001 to 50,000	14,601 to 17,900	12 per week
50,001 to 59,000	17,901 to 21,100	15 per week
59,001 to 70,000	21,101 to 25,000	18 per week
70,001 to 83,000	25,001 to 29,600	20 per week
83,001 to 96,000	29,601 to 34,300	23 per week
96,001 to 130,000	34,301 to 46,400	25 per week
130,001 to 220,000	46,401 to 78,600	30 per week
220,001 to 320,000	78,601 to 114,300	38 per week

320,001 to 450,000	114,301 to 160,700	50 per week
450,001 to 600,000	160,701 to 214,300	55 per week
600,001 to 780,000	214,301 to 278,600	60 per week
780,001 to 970,000	278,601 to 346,400	70 per week
970,001 to 1,230,000	346,401 to 439,300	75 per week
1,230,001 to 1,520,000	439,301 to 542,900	85 per week
1,520,001 to 1,850,000	542,901 to 660,700	90 per week
1,850,001 to 2,270,000	660,701 to 810,700	98 per week
2,270,001 to 3,020,000	810,701 to 1,078,600	105 per week
3,020,001 to 3,960,000	1,078,601 to 1,414,300	110 per week
3,960,001 or more	1,414,301 or more	120 per week

§64423.1. Sample Analysis and Reporting of Results.

(a) The water supplier shall designate (label) each sample as routine, repeat, replacement, or "other" pursuant to §64421(b), and have each sample analyzed for total coliforms. The supplier also shall require the laboratory to analyze the same sample for fecal coliforms or Escherichia coli (E. coli) whenever the presence of total coliforms is indicated. As a minimum, the analytical results shall be reported in terms of the presence or absence of total or fecal coliforms, or E. coli in the sample, whichever is appropriate.

(b) The water supplier shall require the laboratory to notify the supplier within 24 hours, whenever the presence of total coliforms, fecal coliforms or E. coli is demonstrated in a sample or a sample is invalidated due to interference problems, pursuant to §64425(b), and shall ensure that a contact person is available to receive these analytical results 24-hours a day. The water supplier shall also require the laboratory to immediately notify the Department of any positive bacteriological results if the laboratory cannot make direct contact with the designated contact person within 24 hours.

(c) Analytical results of all required samples collected for a system in a calendar month shall be reported to the Department not later than the tenth day of the following month, as follows:

(1) The water supplier shall submit a monthly summary of the bacteriological monitoring results to the Department.

(2) For systems serving fewer than 10,000 service connections or 33,000 persons, the water supplier shall require the laboratory to submit copies of all required bacteriological monitoring results directly to the Department.

(3) For systems serving more than 10,000 service connections, or 33,000 persons, the water supplier shall require the laboratory to submit copies of bacteriological monitoring results for all positive routine samples and all repeat samples directly to the Department.

(d) Laboratory reports shall be retained by the water supplier for a period of at least five years and shall be made available to the Department upon request.

§64424. Repeat Sampling.

(a) If a routine sample is total coliform-positive, the water supplier shall collect a repeat sample set as described in paragraph (a)(1) within 24 hours of being notified of the positive

result. The repeat samples shall all be collected within the same 24 hour time period. A single service connection system may request that the Department allow the collection of the repeat sample set over a four-day period.

(1) For a water supplier that normally collects more than one routine sample a month, a repeat sample set shall be at least three samples for each total coliform-positive sample. For a water supplier that normally collects one or fewer samples per month, a repeat sample set shall be at least four samples for each total coliform-positive sample.

(2) If the water supplier is unable to collect the samples within the 24-hour time period specified in subsection (a) or deliver the samples to the laboratory within 24 hours after collection because of circumstances beyond its control, the water supplier shall notify the Department within 24 hours. The Department will then determine how much time the supplier will have to collect the repeat samples.

(b) When collecting the repeat sample set, the water supplier shall collect at least one repeat sample from the sampling tap where the original total coliform-positive sample was taken. Other repeat samples shall be collected within five service connections upstream or downstream of the original site. At least one sample shall be from upstream and one from downstream unless there is no upstream and/or downstream service connection.

(c) If one or more samples in the repeat sample set is total coliform-positive, the water supplier shall collect and have analyzed an additional set of repeat samples as specified in subsections (a) and (b). The supplier shall repeat this process until either no coliforms are detected in one complete repeat sample set or the supplier determines that the MCL for total coliforms specified in §64426.1 has been exceeded and notifies the Department.

(d) If a public water system for which fewer than five routine samples/month are collected has one or more total coliform-positive samples, the water supplier shall collect at least five routine samples the following month. If the supplier stops supplying water during the month after the total coliform-positive(s), at least five samples shall be collected during the first month the system resumes operation. A water supplier may request the Department waive the requirement to collect at least five routine samples the following month, but a waiver will not be granted solely on the basis that all repeat samples are total coliform-negative. To request a waiver, one of the following conditions shall be met:

(1) The Department conducts a site visit before the end of the next month the system provides water to the public to determine whether additional monitoring and/or corrective action is necessary to protect public health.

(2) The Department determines why the sample was total coliform-positive and establishes that the system has corrected the problem or will correct the problem before the end of the next month the system serves water to the public. If a waiver is granted, a system shall collect at least one routine sample before the end of the next month it serves water to the public and use it to determine compliance with §64426.1.

§64425. Sample Invalidation.

(a) A water supplier may request the Department to invalidate a sample for which a total coliform-positive result has been reported if the supplier demonstrates:

(1) All repeat sample(s) collected at the same tap as the original total coliform-positive sample also are total coliform- positive and all repeat samples collected within five service connections of the original tap are not total coliform-positive; or

(2) The laboratory did not follow the prescribed analytical methods pursuant to §64415(a), based on a review of laboratory documentation by the Department. The supplier shall submit to the Department a written request for invalidation along with the laboratory documentation, the supplier's sample collection records and any observations noted during sample collection and delivery. The water supplier shall require the laboratory to provide the supplier with documentation which shall include, but not be limited to:

(A) A letter from the director of the laboratory having generated the data, confirming the invalidation request by reason of laboratory accident or error;

(B) Complete sample identification, laboratory sample log number (if used), date and time of collection, date and time of receipt by the laboratory, date and time of analysis for the sample(s) in question;

(C) Complete description of the accident or error alleged to have invalidated the result(s);

(D) Copies of all analytical, operating, and quality assurance records pertaining to the incident in question; and

(E) Any observations noted by laboratory personnel when receiving and analyzing the sample(s) in question.

(b) Whenever any total coliform sample result indicative of the absence of total coliforms has been declared invalid by the laboratory due to interference problems as specified at 40 Code Federal Regulations, Section 141.21(c)(2), the supplier shall collect a replacement sample from the same location as the original sample within 24 hours of being notified of the interference problem, and have it analyzed for the presence of total coliforms. The supplier shall continue to re-sample at the original site within 24 hours and have the samples analyzed until a valid result is obtained.

§64426. Significant Rise in Bacterial Count.

(a) Any of the following criteria shall indicate a possible significant rise in bacterial count:

(1) A system collecting at least 40 samples per month has a total coliform-positive routine sample followed by two total coliform-positive repeat samples in the repeat sample set;

(2) A system has a sample which is positive for fecal coliform or E. coli; or

(3) A system fails the total coliform Maximum Contaminant Level (MCL) as defined in §64426.1.

(b) When the coliform levels specified in subsection (a) are reached or exceeded, the water supplier shall:

(1) Contact the Department by the end of the day on which the system is notified of the test result or the system determines that it has exceeded the MCL, unless the notification or determination occurs after the Department office is closed, in which case the supplier shall notify the Department within 24 hours; and

(2) Submit to the Department information on the current status of physical works and operating procedures which may have caused the elevated bacteriological findings, or any

information on community illness suspected of being waterborne. This shall include, but not be limited to:

(A) Current operating procedures that are or could potentially be related to the increase in bacterial count;

(B) Any interruptions in the treatment process;

(C) System pressure loss to less than 5 psi;

(D) Vandalism and/or unauthorized access to facilities;

(E) Physical evidence indicating bacteriological contamination of facilities;

(F) Analytical results of any additional samples collected, including source samples;

(G) Community illness suspected of being waterborne; and

(H) Records of the investigation and any action taken.

(c) Upon receiving notification from the Department of a significant rise in bacterial count, the water supplier shall implement the emergency notification plan required by Section 402913, Health and Safety Code.

§64426.1. Total Coliform Maximum Contaminant Level (MCL).

(a) Results of all samples collected in a calendar month pursuant to Sections 64423, 64424, and 64425 that are not invalidated by the Department or the laboratory shall be included in determining compliance with the total coliform MCL. Special purpose samples such as those listed in §64421(b) and samples collected by the water supplier during special investigations shall not be used to determine compliance with the total coliform MCL.

(b) A public water system is in violation of the total coliform MCL when any of the following occurs:

(1) For a public water system which collects at least 40 samples per month, more than 5.0 percent of the samples collected during any month are total coliform-positive; or

(2) 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

(3) Any repeat sample is fecal coliform-positive or E. coli-positive; or

(4) Any repeat sample following a fecal coliform-positive or E. coli-positive routine sample is total coliform-positive.

(c) If a public water system is not in compliance with paragraphs (b)(1) through (4), during any month in which it supplies water to the public, the water supplier shall notify the Department by the end of the business day on which this is determined, unless the determination occurs after the Department office is closed, in which case the supplier shall notify the Department within 24 hours of the determination. The water supplier shall also notify the consumers served by the water system. Notification for violations of paragraphs (b)(1) or (2) shall be in accordance with Sections 64464.3 and 64467, including the language in §64470(a). Notification for violations of subsections (b)(3) or (4) shall be in accordance with Sections 64464.3, 64465 and 64467, including the language in §64470(b).

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13 Section 4029 has been recodified to 116460. OAL has been notified of this by request for a "change without regulatory effect".

§64426.5. Variance from Total Coliform Maximum Contaminant Level.
A water system may apply to the Department for a variance from the total coliform MCL in §64426.1(b)(1) or (2). To be eligible for a variance, the water system shall demonstrate that it meets the following criteria:

(a) During the thirty days prior to application for a variance, water entering the distribution system has:

(1) Been free from fecal coliform or E. coli occurrence based on at least daily sampling;

(2) Contained less than one total coliform per hundred milliliters of water in at least ninety-five per cent of all samples based on at least daily sampling;

(3) Complied with the turbidity requirements of §64653, if approved surface water; and

(4) Maintained a continuous disinfection residual of at least 0.2 mg/L at the entry point(s) to the distribution system;

(b) The system has had no waterborne microbial disease outbreak, pursuant to §64651.91, while operated in its present configuration;

(c) The system maintains contact at least twice a week with the Department and local health departments to assess illness possibly attributable to microbial occurrence in the public drinking water system;

(d) The system has analyzed, on a monthly basis, at least the number of samples required pursuant to the approved sample siting plan and has not had an E. coli-positive compliance sample within the last six months, unless the system demonstrates to the Department that the occurrence is not due to contamination entering the distribution system;

(e) The system has undergone a sanitary survey conducted by the Department within the past twelve months;

(f) The system maintains a cross-connection control program in accordance with sections 7583 through 7605, title 17 of the California Code of Regulations;

(g) The system agrees to submit a biofilm control plan to the Department within twelve months of the granting of the first request for a variance;

(h) The system monitors general distribution system bacterial quality by conducting heterotrophic bacteria plate counts on at least a weekly basis at a minimum of ten percent of the number of total coliform sites specified in the approved sample siting plan (preferably using the methods in section 9215(a), 18th edition of Standard Methods for the Examination of Water and Wastewater, 1992, American Public Health Association, et. al); and

(i) The system conducts daily monitoring at distribution system total coliform monitoring sites approved by the Department and maintains a detectable disinfectant residual at a minimum

of ninety-five percent of those points and a heterotrophic plate count of less than 500 colonies per ml at sites without a disinfectant residual.

(j) No water system shall be eligible for a variance or exemption from the MCL for total coliforms unless it demonstrates that the violation of the total coliform MCL is due to a persistent growth of total coliforms in the distribution system pursuant to §64426.5, rather than to fecal or pathogenic contamination, a treatment lapse or deficiency, or a problem in the operation or maintenance of the distribution system.

§64427. Sanitary Survey.
Systems which collect less than five routine samples per month shall be subject to an initial sanitary survey by the Department by June 29, 1994 for community water systems and June 29, 1999 for nontransient-noncommunity and transient-noncommunity water systems. Sanitary surveys shall be repeated every five years.

Article 4. Primary Standards--Inorganic Chemicals

§64431. Maximum Contaminant Levels--Inorganic Chemicals.

(a) The primary MCLs for the drinking water chemicals shown in Table 64431-A shall not be exceeded in the water supplied to the public.

Table 64431-A
Maximum Contaminant Levels
Inorganic Chemicals

Chemical	*Maximum Contaminant Level, mg/L*
Aluminum	1.
Antimony	0.006
Arsenic	0.05
Asbestos	7 MFL*
Barium	1.
Beryllium	0.004
Cadmium	0.005
Chromium	0.05
Cyanide	0.15
Fluoride	2.0
Mercury	0.002
Nickel	0.1
Nitrate (as NO3)	45.
Nitrate+Nitrite (sum as nitrogen)	10.
Nitrite (as nitrogen)	1.
Selenium	0.05
Thallium	0.002

* MFL=million fibers per liter; MCL for fibers exceeding 10 um in length.

§64432. Monitoring and Compliance--Inorganic Chemicals.

(a) All public water systems shall monitor to determine compliance with the nitrate and nitrite MCLs in Table 64431-A, pursuant to subsections 64432(c) through (e) of this section and §64432.1. All community and nontransient-noncommunity water systems shall also monitor to determine compliance with the MCLs in Table 64431-A, pursuant to subsections 64432(b) through (l) of this section, and §64432.2. Monitoring shall be conducted in the year designated by the Department of each compliance period beginning with the compliance period starting January 1, 1993.

(b) The frequency of monitoring conducted to determine compliance with the MCLs for the inorganic chemicals listed in Table 64431-A, except for asbestos and nitrate/nitrite, shall be as follows:

(1) Each compliance period, all community and nontransient-noncommunity systems using groundwater shall monitor once during the year designated by the Department. The Department will designate the year based on historical monitoring frequency and laboratory capacity. All community and nontransient-noncommunity systems using approved surface water shall monitor annually. All systems monitoring at distribution entry points which have combined surface and groundwater sources shall monitor annually.

(2) Quarterly samples shall be collected and analyzed for any chemical if analyses of such samples indicate a continuous or persistent trend toward higher levels of that chemical, based on an evaluation of previous data.

(c) For the purposes of Sections 64432, 64432.1 and 64432.2, detection shall be defined by the detection limits for purposes of reporting (DLRs) in Table 64432-A.

Table 64432-A
Detection Limits for Purposes of Reporting (DLRs) for Regulated Inorganic Chemicals

Chemical	*Detection Limit for Purposes of Reporting (DLR) (mg/L)*
Aluminum	0.05
Antimony	0.006
Arsenic	0.002
Asbestos	0.2 MFL>10um*
Barium	0.1
Beryllium	0.001
Cadmium	0.001
Chromium	0.01
Cyanide	0.1
Fluoride	0.1
Mercury	0.001
Nickel	0.01
Nitrate (as NO3)	2.

Nitrite (as nitrogen)	0.4
Selenium	0.005
Thallium	0.001

* MFL=million fibers per liter; DLR for fibers exceeding 10 um in length.

(d) Samples shall be collected from each water source or a supplier may collect a minimum of one sample at every entry point to the distribution system which is representative of each source after treatment. The system shall collect each sample at the same sampling site, unless a change is approved by the Department.

(e) A water system may request approval from the Department to composite samples from up to five sampling sites, provided that the number of sites to be composited is less than the ratio of the MCL to the DLR. Approval will be based on a review of three years of historical data, well construction and aquifer information for groundwater, and intake location, similarity of sources, and watershed characteristics for surface water. Compositing shall be done in the laboratory.

(1) Systems serving more than 3,300 persons shall composite only from sampling sites within a single system. Systems serving 3,300 persons or less may composite among different systems up to the 5-sample limit.

(2) If any inorganic chemical is detected in the composite sample at a level equal to or greater than one fifth of the MCL, a follow-up sample shall be analyzed within 14 days from each sampling site included in the composite for the contaminants which exceeded the one-fifth-MCL level. If available, duplicates of the original sample taken from each sampling site used in the composite may be used instead of resampling; the analytical results shall be reported within 14 days. The water supplier may collect up to two additional samples each from one or more of the sources to confirm the result(s).

(3) Compliance for each site shall be determined on the basis of the individual follow-up samples, or on the average of the follow-up and confirmation sample(s) if the supplier collects confirmation sample(s) for each detection.

(f) If the level of any inorganic chemical, except for nitrate, nitrite, or nitrate plus nitrite, exceeds the MCL, the water supplier shall do one of the following:

(1) Inform the Department within 48 hours and monitor quarterly beginning in the next quarter after the violation occurred; or

(2) Inform the Department within seven days from the receipt of the analysis and collect one additional sample within 14 days to confirm the result. If the average of the two samples collected exceeds the MCL, this information shall be reported to the Department within 48 hours and the water supplier shall monitor quarterly beginning in the next quarter after the violation occurred.

(g) For systems monitoring quarterly, compliance shall be determined by a running annual average; if any one sample would cause the annual average to exceed the MCL, the system is out of compliance immediately. For systems monitoring annually or less frequently, compliance

shall be determined based on the initial sample or the average of the initial and confirmation samples, if a confirmation sample is collected.

(h) If a system using groundwater has collected a minimum of two quarterly samples or a system using approved surface water has collected a minimum of four quarterly samples and the sample results have been below the MCL, the system may apply to the Department for a reduction in monitoring frequency.

(i) Water quality data collected prior to January 1, 1990, and/or data collected in a manner inconsistent with this section shall not be used in the determination of compliance with the monitoring requirements for inorganic chemicals.

(j) Water quality data collected in compliance with the monitoring requirements of this section by a wholesaler agency providing water to a public water system shall be acceptable for use by that system for compliance with the monitoring requirements of this section.

(k) A water system may apply to the Department for a waiver from the monitoring frequencies specified in paragraph (b)(1) of this section, if the system has conducted at least three rounds of monitoring (three periods for groundwater sources or three years for approved surface water sources) and all previous analytical results are less than the MCL. The water system shall specify the basis for its request. If granted a waiver, a system shall collect a minimum of one sample per source while the waiver is in effect and the term of the waiver shall not exceed one compliance cycle (i.e., nine years).

(l) A water system may be eligible for a waiver from the monitoring frequencies for cyanide specified in paragraph (b)(1) of this section without any prior monitoring if it is able to document that it is not vulnerable to cyanide contamination pursuant to the requirements in §64445(d)(1) or (d)(2).

(m) Transient-noncommunity water systems shall monitor for inorganic chemicals as follows:

(1) All sources shall be monitored at least once for fluoride;

(2) Surface water sources for parks and other facilities with an average daily population use of more than 1000 people and/or which are determined to be subject to potential contamination based on a sanitary survey shall be monitored at the same frequency as community water systems.

§64432.1. Monitoring and Compliance--Nitrate and Nitrite.

(a) To determine compliance with the MCL for nitrate in Table 64431-A, all public water systems using groundwater and transient-noncommunity systems using approved surface water shall monitor annually, and all community and nontransient-noncommunity systems using approved surface water shall monitor quarterly.

(1) The water supplier shall require the laboratory to notify the supplier within 24 hours whenever the level of nitrate in a single sample exceeds the MCL, and shall ensure that a contact person is available to receive such analytical results 24-hours a day. The water supplier shall also require the laboratory to immediately notify the Department of any acute nitrate MCL

exceedance if the laboratory cannot make direct contact with the designated contact person within 24 hours. Within 24 hours of notification, the water supplier shall:

(A) Collect another sample, and

(B) Analyze the new sample; if the average of the two nitrate sample results exceeds the MCL, report the result to the Department within 24 hours. If the average does not exceed the MCL, inform the Department of the results within seven days from the receipt of the original analysis.

(C) If a system is unable to resample within 24 hours, it shall notify the consumers in accordance with §64465 and shall collect and analyze a confirmation sample within two weeks of notification of the results of the first sample.

(2) For public water systems using groundwater, the repeat monitoring frequency shall be quarterly for at least one year following any one sample in which the concentration is greater than or equal to 50 percent of the MCL. After four consecutive quarterly samples are less than the MCL, a system may request that the Department reduce monitoring frequency to annual sampling.

(3) For public water systems using approved surface water, the repeat monitoring frequency shall be quarterly following any one sample in which the concentration is greater than or equal to 50 percent of the MCL. After four consecutive quarterly samples are less than 50 percent of the MCL, a system may request that the Department reduce monitoring frequency to annual sampling. A system using approved surface water shall return to quarterly monitoring if any one sample is greater than or equal to 50 percent of the MCL.

(4) After any round of quarterly sampling is completed, each community and nontransient-noncommunity system which initiates annual monitoring shall take subsequent samples during the quarter which previously resulted in the highest analytical results.

(b) All public water systems shall monitor to determine compliance with the MCL for nitrite in Table 64431-A, by taking one sample at each sampling site during the compliance period beginning January 1, 1993.

(1) If the level of nitrite in a single sample is greater than the MCL, the water supplier shall proceed as for nitrate in accordance with paragraph (a)(1) of this section.

(2) The repeat monitoring frequency for systems with an analytical result for nitrite that is greater than or equal to 50 percent of the MCL shall be quarterly monitoring for at least one year. After four consecutive quarterly samples are less than the MCL, a system may request that the Department reduce monitoring frequency to annual sampling, collecting subsequent samples during the quarter which previously resulted in the highest analytical results.

(3) The repeat monitoring frequency for systems with an analytical result for nitrite that is less than 50 percent of the MCL shall be one sample during each compliance period (every three years).

(c) All public water systems shall determine compliance with the MCL for nitrate plus nitrite in Table 64431-A. If the level exceeds the MCL, the water supplier shall proceed as for nitrate in accordance with paragraphs (a)(1) through (a)(4) of this section.

§64432.2. Monitoring and Compliance - Asbestos.

(a) All community and nontransient-noncommunity water systems are required to monitor to determine compliance with the MCL for asbestos in Table 64431-A during the year designated

by the Department of the first compliance period of each nine-year compliance cycle, beginning in the compliance period starting January 1, 1993. The Department will designate the year based on historical monitoring frequency and laboratory capacity.

(1) If a groundwater system is vulnerable to asbestos contamination solely in its source water, it shall collect one sample at every entry point to the distribution system which is representative of each water source after treatment and proceed in accordance with Subsections 64432(b)(2) through (d) and Subsections 64432(f) through (j).

(2) All approved surface water systems shall be designated vulnerable to asbestos contamination in their source waters. If a surface water system is vulnerable solely in its source water, it shall proceed as in paragraph (1) above.

(3) If a system is vulnerable to asbestos contamination due to leaching of asbestos-cement pipe, with or without vulnerability to asbestos contamination in its source water, it shall take one sample at a tap served by asbestos-cement pipe under conditions where asbestos contamination is most likely to occur.

(b) If the level of asbestos exceeds the MCL in Table 64431-A, the supplier shall report to the Department within 48 hours and monitor quarterly beginning in the next quarter after the violation occurred. A system may request that the Department reduce monitoring frequency to one sample every compliance cycle, pursuant to §64432(h).

(c) If a system is not vulnerable either to asbestos contamination in its source water or due to leaching of asbestos-cement pipe, it may apply to the Department for a waiver of the monitoring requirements in paragraphs (a)(1) through (3) of this section. The Department will determine the vulnerability of groundwater sources on the basis of historical monitoring data and possible influence of serpentine formations. Vulnerability due to leaching of asbestos-cement pipe will be determined by the Department on the basis of the presence of such pipe in the distribution system and evaluation of the corrosivity of the water. The period of the waiver shall be three years.

ARTICLE 4.1 FLUORIDATION

§64433. System Requirements and Exemptions.

(a) Any public water system with 10,000 service connections or more that does not have a fluoridation system shall install such a system pursuant to the requirements in this article if the Department identifies a source of sufficient funds not excluded by Health and Safety Code section 116415 to cover capital and any associated costs necessary to install such a system. Installation shall be completed within two years of the date the funds are received by the water system; the water system may apply to the Department for an extension of the deadline. Following installation, if the Department identifies a source of sufficient funds not excluded by Health and Safety Code section 116415 to cover the noncapital operations and maintenance costs for the period of a year or more, the system shall fluoridate within three months of receiving the funds and shall continue fluoridating so long as such funds are received.

(b) Any public water system with 10,000 service connections or more that has a fluoridation system but ceased fluoridating prior to December 31, 1995 shall fluoridate the drinking water if its fluoridation system is determined to be capable of fluoridating the drinking water in compliance with §64433.2, based on a Departmental review, and the Department identifies a source of sufficient funds not excluded by Health and Safety Code section 116415 to cover the

noncapital operations and maintenance costs for the period of a year or more. Such a system shall fluoridate within one month of receiving the funds and shall continue fluoridating so long as such funds are received.

(c) Any public water system required to install a fluoridation system pursuant to subsection (a) or required to fluoridate pursuant to subsection (b) shall annually submit an estimate of anticipated fluoridation operations and maintenance costs for the next fiscal year (July 1 through June 30) to the Department by the January 1 preceding that fiscal year.

(d) Any public water system with 10,000 service connections or more that has naturally-occurring fluoride and cannot demonstrate that it maintains an average annual fluoride level that is equal to or greater than the low level specified in the temperature-appropriate "control range" in Table 64433.2-A shall be subject to subsections (a) and (b).

(e) Any public water system which achieves 10,000 service connections or more subsequent to July 1, 1996, that does not have a fluoridation system, or that has naturally-occurring fluoride and meets the criteria in subsection (d) shall provide an estimate to the Department of capital and any associated costs necessary to install a fluoridation system within one year of achieving at least 10,000 service connections:

(f) Any public water system with 10,000 service connections or more shall be exempted from fluoridation in either of the following cases:

(1) The water system does not receive sufficient funds from a source identified by the Department and not excluded by Health and Safety Code section 116415 to cover the capital and associated costs needed to install a fluoridation system; or

(2) The water system received sufficient capital funds from a source identified by the Department and not excluded by Health and Safety Code section 116415 and subsequently installed a fluoridation system or the water system meets the criteria in subsection (b), and the water system did not receive sufficient funds from a source identified by the Department and not excluded by Health and Safety Code section 116415 to cover the noncapital operation and maintenance costs to fluoridate. The water system shall be exempted for any fiscal year (July 1 through June 30) for which it does not receive the funds for noncapital operation and maintenance costs.

§64433.2. Optimal Fluoride Levels.

Any public water system that is fluoridating shall comply with the temperature-appropriate fluoride levels in Table 64433.2-A. The system shall determine, and submit to the Department, its annual average of maximum daily air temperatures based on the five calendar years immediately preceding the current calendar year.

Table 64433.2-A
Optimal Fluoride Levels

Annual average of maximum daily air temperatures, degrees	*Optimal fluoride level, mg/L*	*Control Range, mg/L*

Fahrenheit	Celsius		Low	High
50.0 to 53.7	10.0 to 12.0	1.2	1.1	1.7
53.8 to 58.3	12.1 to 14.6	1.1	1.0	1.6
58.4 to 63.8	14.7 to 17.7	1.0	0.9	1.5
63.9 to 70.6	17.8 to 21.4	0.9	0.8	1.4
70.7 to 79.2	21.5 to 26.2	0.8	0.7	1.3
79.3 to 90.5	26.3 to 32.5	0.7	0.6	1.2

§64433.3. Monitoring and Compliance--Fluoride Levels.

(a) If a water system has a single fluoridation system which treats all the water distributed to consumers, the supplier shall collect a daily sample for fluoride analysis, pursuant to §64415(b), either in the distribution system or at the entry point. If a water system does not fluoridate all its water and/or has more than one fluoridation system, the supplier shall collect one sample daily in the distribution system and rotate the sample sites in order to be representative of the water throughout the distribution system according to a monitoring plan the Department has determined to be representative. For water systems fluoridating as of January 1, 1997, the plan shall be submitted by July 1, 1998. For all others, the plan shall be submitted prior to initiating fluoridation treatment. A water system shall monitor only when it is operating its fluoridation system.

(b) If more than 20 percent of the daily fluoride samples collected in a month by a water system pursuant to subsection (a) fall outside the control range of optimal levels as determined by temperature for that system pursuant to §64433.2, the system shall be out of compliance with §64433.2.

(c) At least once a month, any water supplier with an operating fluoridation system shall divide one sample and have one portion analyzed for fluoride by water system personnel and the other portion analyzed pursuant to §64415(a).

(d) Any water system with an operating fluoridation system shall sample the raw source waters annually and analyze for fluoride pursuant to §64415(a); samples collected pursuant to §64432(b)(1) may be used toward satisfying this requirement. All raw source water samples collected under this subsection are subject to compliance with the fluoride MCL in Table 64431-A.

(e) If any sample result obtained pursuant to subsection (a) does not fall within the temperature-appropriate fluoride level control range in Table 64433.2-A, the water supplier shall take action as detailed in the water system's approved fluoridation system operations contingency plan as specified in §64433.8.

§64433.5. Fluoridation System.

Each fluoridation system installed or modified after January 1, 1997, shall meet the following criteria, as a minimum:

(a) Operate only when a flow of water is detected. If the water system serves less than 200 service connections, a secondary flow-based control device shall be provided as back-up protection;

(b) Provide flow measuring and recording equipment for the fluoride addition;

(c) Provide design and reliability features to maintain the level of fluoride within the temperature-appropriate control range 95 per cent of the time;

(d) Provide for containment of spills; and

(e) Provide alarm features for fluoride chemical feed and fluoride spills.

§64433.7. Recordkeeping, Reporting, and Notification for Water Systems Fluoridating.

(a) By the tenth day of each month following the month being reported, each water supplier fluoridating its water supply shall send operational reports to the Department which include the following:

(1) The fluoride compounds used and the calculated fluoride dose in mg/L;

(2) Information on any interruptions in the fluoridation treatment which may have occurred during the month including the duration of the interruptions, an explanation of causes, and what corrective actions were taken to insure that fluoridation treatment was resumed in a timely manner;

(3) The results of the daily monitoring for fluoride in the water distribution system, reported in terms of daily results, and ranges and the number of samples collected; and

(4) The results of monthly split sample(s) analyzed pursuant to §64433.3(c).

(b) For water systems that fluoridated the previous fiscal year (July 1 through June 30), the water supplier shall report the operations and maintenance costs for that year to the Department by August 1.

(c) Whenever a water system initiates fluoridation, suspends fluoridation for more than ninety days, or reinitiates fluoridation after a suspension of more than ninety days, the water supplier shall notify the consumers, local health departments, pharmacists, dentists, and physicians in the area served by the water system, regarding the status of the fluoridation treatment. If a water system with more than one fluoridation system suspends the use of one or more of its fluoridation systems, but the level of fluoride being served to the consumers is in conformance with Table 64433.2-A, no notification shall be required.

(d) If a fluoride overfeed exceeding 10.0 mg/L occurs, the water system shall notify the Department by the end of the business day of the occurrence or within 24 hours if the Department office is closed.

(e) If the level of fluoride in the distribution system is found to be less than the control range in Table 64433.2-A in two or more samples in a month, the water system shall notify the Department within three business days of the second occurrence. If the level of fluoride in the

distribution system is found to be 0.1 mg/L or more above the control range up to 10.0 mg/L, the water supplier shall notify the Department within three business days of the occurrence.

§64433.8. Fluoridation System Operations Contingency Plan.

(a) Water systems fluoridating as of July 1, 1996 shall submit a fluoridation system operations contingency plan by July 1, 1998. All other water systems shall submit the plan at least three months before initiating fluoridation treatment. All fluoridating water systems shall operate in accordance with a fluoridation system operations contingency plan determined by the Department to include the elements in subsection (b).

(b) A fluoridation system operation contingency plan shall include, but not be limited to, the following elements:

(1) Actions to be implemented by the water supplier in the event that the fluoride level in a distribution system sample is found to be less than the control range in Table 64433.2-A, 0.1 mg/L above the control range up to a fluoride level of 2.0 mg/L, from 2.1 to a level of 4.0 mg/L, from 4.1 to a level of 10.0 mg/L, or above a level of 10.0 mg/L.

(2) The procedure for shutting down the fluoridation equipment if there is a fluoride overfeed and the need to do so is identified by the Department and/or the water supplier;

(3) The procedure for investigating the cause of an underfeed or overfeed;

(4) A list of water system, county health department, and Department personnel with day and evening phone numbers to be notified by the end of the business day of the occurrence or within 24 hours if the Department office is closed in the event of an overfeed exceeding 10.0 mg/L; and

(5) The procedure for notifying the public if instructed to do so by the Department in the event of a fluoride underfeed extending for more than three months or a fluoride overfeed exceeding 10.0 mg/L.

§64434. Water System Priority Funding Schedule.

Public water systems with 10,000 service connections or more that are not fluoridating as of July 1, 1996, shall install fluoridation systems and initiate fluoridation according to the order established in Table 64434-A, as the water systems receive funds from sources identified by the Department, pursuant to Health and Safety Code section 116415.

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Table 64434-A
Water System Priority Funding Schedule

System No.	*System Name*	*Priority*
3710010	Helix Water District	1
5610017	Ventura, City of	2
4110013	Daly City, City of	3
3710006	Escondido, City of	4
4210011	Santa Maria, City of	5
3410009	Fair Oaks Water District	6
1910083	Manhattan Beach, City of	7
3710025	Sweetwater Authority	8
4210010	Santa Barbara, City of	9
0910001	El Dorado Irrigation District	10
3410006	Citrus Heights Water District	11
4410010	Santa Cruz, City of	12
3610039	San Bernardino, City of	13
3310009	Eastern Municipal Water District	14
3710037	Padre Dam Municipal Water District	15
1910067	Los Angeles, City of	16
2810003	Napa, City of	17
3710020	San Diego, City of	18
3710034	Otay Water District	19
3310031	Riverside, City of	20
1910173	Whittier, City of	21
3410020	Sacramento, City of	22
1910139	California American Water Company - San Marino	23
3710021	San Dieguito Water District	24
3610024	Hesperia Water District	25
1910179	Burbank, City of	26
2710004	California American Water Company - Monterey	27
3310049	Western Municipal Water District	28
3010073	Moulton Niguel Water District	29
3010101	Santa Margarita Water District	30
1910239	Lakewood, City of	31
2110003	North Marin Water District	32
3010037	Yorba Linda Water District	33

System No.	*System Name*	*Priority*
3710015	Poway, City of	34
3110025	Placer County Water Agency	35
5010010	Modesto, City of	36
1910126	Pomona, City of	37
3410004	Carmichael Water District	38
1910043	Glendale, City of	39
3610018	Cucamonga Community Water District	40
3910011	Tracy, City of	41
1910234	Walnut Valley Water District	42
3910012	Stockton, City of	43
1910146	Santa Monica, City of	44
3710027	Vista Irrigation District	45
3010018	La Habra, City of	46
1910009	Valley County Water District	47
3310012	Elsinore Valley Municipal Water District	48
1910051	Inglewood, City of	49
3710005	Carlsbad Municipal Water District	50
4210004	Goleta Water District	51
1910213	Torrance, City of	52
1910152	South Gate, City of	53
1910155	Southern California Water Company - Southwest	54
1510017	Indian Wells Valley Water District	55
1910039	San Gabriel Valley Water Company - El Monte	56
1610003	Hanford, City of	57
3310037	Corona, City of	58
3010062	Garden Grove, City of	59
3610003	Apple Valley Ranchos Water Community	60
3610036	Chino Hills, City of	61
3010064	Westminster, City of	62
4310011	San Jose Water Company	63
3610012	Chino, City of	64
3910004	Lodi, City of	65
5610007	Oxnard, City of	66
1910019	Cerritos, City of	67
1910205	Suburban Water Systems - San Jose Hills	68
1910059	Suburban Water Systems - La Mirada	69
1910092	Monterey Park, City of	70
1910174	Suburban Water Systems - Whittier	71
1910026	Compton, City of	72
1910124	Pasadena, City of	73
3310022	Lake Hemet Municipal Water District	74
1910142	Southern California Water Company - San Dimas	75

4510005	Redding, City of	76

System No.	*System Name*	*Priority*
3610037	Redlands, City of	77
3910005	Manteca, City of	78
3710014	Oceanside, City of	79
3610038	Rialto, City of	80
4310022	Great Oaks Water Company	81
4310014	Sunnyvale, City of	82
3310021	Jurupa Community Services District	83
3410001	Arcade- Town & County	84
3610052	Victor Valley Water District	85
3010023	Newport Beach, City of	86
3610064	East Valley Water District	87
1910225	Las Virgenes Municipal Water District	88
3710001	California American Water Company - Coronado	89
3610034	Ontario, City of	90
3910001	California Water Service Company - Stockton	91
1910033	Dominguez Water Agency	92
5410015	Tulare, City of	93
5710006	Woodland, City of	94
3710029	Olivenhain Municipal Water District	95
1910003	Arcadia, City of	96
1910008	Azusa Valley Water Company	97
4410011	Watsonville, City of	98
3010003	Buena Park, City of	99
4310005	Milpitas, City of	100
1910017	Santa Clarita Water Company	101
1910240	Valencia Water Company	102
3610004	West San Bernardino Water District	103
0910002	South Tahoe Public Utilities District	104
5610059	Southern California Water Company - Simi Valley	105
3010027	Orange, City of	106
5410010	Porterville, City of	107
4410017	Soquel Creek Water District	108
4110023	San Bruno, City of	109
1910001	Alhambra, City of	110
3010022	Southern California Water Company-West Orange County	111
3010091	Los Alisos Water District	112
3610050	Upland, City of	113
3410024	Northridge Water District	114
1010003	Clovis, City of	115
3010004	Mesa Consolidated Water District	116
3610041	San Gabriel Valley Water Company - Fontana	117

System No.	*System Name*	*Priority*
3410010	Citizens Utilities Company of California - Suburban	118
3010038	Santa Ana, City of	119
3010092	Irvine Ranch Water District	120
1910211	Park Water Company - Bellflower	121
3010010	Fullerton, City of	122
4310007	Mountain View, City of	123
3010036	San Clemente, City of	124
3010079	El Toro Water District	125
5610020	Thousand Oaks, City of	126
3610029	Monte Vista Water District	127
1910004	Southern California Water Company - Artesia	128
4210016	Southern California Water Company - Orcutt	129
4110008	California Water Service Company - San Mateo	130
1310038	Rancho California Water District	131
3410017	Citizens Utilities Company of California - Parkway	132
1910024	Southern California Water Company - Claremont	133
1910044	Glendora, City of	134
3010001	Anaheim, City of	135
5710001	Davis, City of	136
1910134	California Water Service Company-Hermosa/Redondo	137
1010007	Fresno, City of	138
1910102	Palmdale Water District	139
4310012	Santa Clara, City of	140
2710010	California Water Service Company - Salinas	141
4910006	Petaluma, City of	142
1910036	California Water Service Company - East Los Angeles	143
3410013	Citizens Utilities Company of California - Lincoln Oaks	144
3310001	Coachella Valley Water District	145
5010019	Turlock, City of	146
5410016	California Water Service Company - Visalia	147
5610023	Waterworks District 8-Simi Valley	148
0410002	California Water Service Company - Chico	149
1910104	California Water Service Company - Palos Verdes	150
3410015	Southern California Water Company - Corodva	151
4910009	Santa Rosa, City of	152
1910194	Rowland Water District	153
1510003	California Water Service Company - Bakersfield	154
5610040	California American Water Company - Village District	155
3310005	Desert Water Agency	156
0110003	California Water Service Company - Livermore	157
3010046	Tustin, City of	158
4310001	California Water Service Company - Los Altos Suburban	159

4110007	California Water Service Company - San Carlos	160
1910070	Los Angeles, County Water Works District 4&34- Lancaster	161
1510031	Bakersfield, City of	162
4110009	California Water Service Company - South San Francisco	163
3010053	Huntington Beach, City of	164
4110006	California Water Service Company - Bear Gulch	165
1910034	Downey, City of	166
4110022	Redwood City	167

Article 4.5. Trihalomethanes

§64439. Requirements.

Community water systems shall comply with the National Interim Primary Drinking Water Regulations for the control of Trihalomethanes in Drinking Water, Sections 141.2(p), (q), (r), (s) and (t), 141.6, 141.12 and 141.30 of Title 40, Code of Federal Regulations, as published in the November 29, 1979, Federal Register (Vol. 44, No. 231) and revised in the March 11, 1980, Federal Register (Vol. 45, No. 49), the December 16, 1998, Federal Register (Vol. 63, No. 241) and the January 16, 2001, Federal Register (Vol. 66, No. 10).

Article 5. Radioactivity

§64442. MCLs and Monitoring - Gross Alpha Particle Activity, Radium-226, Radium-228, and Uranium

(a) Each community and nontransient-noncommunity water system (system) shall comply with the primary MCLs in Table 64442 in the drinking water supplied to the public and use the DLRs for reporting monitoring results:

Table 64442
Radionuclide Maximum Contaminant Levels (MCLs)
and Detection Levels for Purposes of Reporting (DLRs)

Radionuclide	*MCL*	*DLR*
Radium-226	5 pCi/L (combined radium-226 & -228)	1 pCi/L
Radium–228		1 pCi/L
Gross Alpha particle activity (excluding radon and uranium)	15 pCi/L	3 pCi/L
Uranium	20 pCi/L	1 pCi/L

(b) Each system shall monitor to determine compliance with the MCLs in table 64442, as follows:

(1) Monitor at each water source, or every entry point to the distribution system that is representative of all sources being used under normal operating conditions; conduct all monitoring at the same sample site(s) unless a change is approved by the Department, based on a review of the system and its historical water quality data;

(2) For quarterly monitoring, monitor during the same month (first, second or third) of each quarter during each quarter monitored;

(3) By December 31, 2007, complete initial monitoring that consists of four consecutive quarterly samples at each sampling site for each radionuclide in table 64442, except that nontransient-noncommunity water systems shall not be required to monitor radium-228 as a separate analyte, but shall monitor for compliance with the combined radium MCL using the analytical method described in Prescribed Procedures for Measurement of Radioactivity in Drinking Water, Section 6, Alpha-emitting Radium Isotopes in Drinking Water, Method 903.0 (EPA/600/4-80-032, August 1980):

(A) Data collected for a sampling site between January 1, 2001, and December 31, 2004, may be used to satisfy the initial monitoring requirement, subject to the Department's approval based on whether the analytical methods, DLRs, sampling sites, and the frequency of monitoring used were consistent with this article.

(B) For gross alpha particle activity, uranium, radium-226 and radium-228, the Department may waive the final two quarters of initial monitoring at a sampling site if the results from the previous two quarters are below the DLR(s) and the sources are not known to be vulnerable to contamination.

(c) Any new system or new source for an existing system shall begin monitoring pursuant to Subsection (b) within the first quarter after initiating water service to the public.

(d) After initial monitoring, each system shall monitor for each radionuclide at each sampling site at a frequency determined by the monitoring result(s) [single sample result or average of sample results if more than one sample collected] from the most recent compliance period as follows:

(1) For nontransient-noncommunity water systems, the results for the total radium analyses shall be averaged.

(2) For community water systems, the results of radium-226 and radium-228 analyses shall be added and the average calculated.

(3) The values used for the radionuclide MCLs and DLRs shall be as specified in Table 64442.

(4) If the single sample result or average is:

A. Below the DLR, the system shall collect and analyze at least one sample every nine years (3 compliance periods).

B. At or above the DLR, but at or below ½ the MCL, the system shall collect and analyze at least one sample every six years.

C. Above ½ the MCL, but not above the MCL, the system shall collect and analyze at least one sample every three years.

(e) A system that monitors quarterly may composite up to four consecutive samples from a single sampling site if analysis is done within a year of the first sample's collection. If the result of the composited sample is greater than ½ the MCL, at least one additional quarterly sample shall be analyzed to evaluate the range and trend of results over time before allowing the system to reduce the monitoring frequency.

(f) A gross alpha particle activity measurement may be substituted for other measurements by adding the 95% confidence interval (1.65σ, where σ is the standard deviation of the net counting rate of the sample) to it; and if,

(1) For uranium and radium measurements (after initial radium-228 monitoring has been completed), the gross alpha measurement does not exceed 5 pCi/L; or

(2) For radium measurements (after initial radium-228 monitoring has been completed), the result obtained from subtracting the uranium measurement from the gross alpha measurement does not exceed 5 pCi/L.

(g) If any sample result is greater than an MCL:

(1) For a system monitoring less than quarterly, quarterly samples shall be collected and analyzed to determine compliance, pursuant to subsection (h);

(2) For a system that already has four consecutive quarterly results, compliance shall be determined pursuant to subsection (h).

(3) The system shall monitor quarterly until the results of four consecutive quarterly sample results do not exceed the MCL.

(h) A system with one or more sample results greater than an MCL shall determine compliance with the MCL as follows:

(1) At each sampling site, based on the analytical results for that site. Any confirmation sample result shall be averaged with the initial result.

(2) Using all monitoring results collected under this section during the previous 12 months, even if more than the minimum required number of samples was collected.

(3) By a running annual average of four consecutive quarters of sampling results. Averages shall be rounded to the same number of significant figures as the MCL for which compliance is being determined.

(A) If any sample result will cause the annual average at any sample site to exceed the MCL, the system shall be out of compliance immediately upon receiving the result;

(B) If a system has not analyzed the required number of samples, compliance shall be determined by the average of the samples collected at the site during the most recent 12 months; and

(C) If a sample result is less than the DLR in table 64442, zero shall be used to calculate the annual average, unless a gross alpha particle activity is being used in lieu of radium-226, total radium, and/or uranium. In that case, if the gross alpha particle activity result is less than the DLR, ½ the DLR shall be used to calculate the annual average.

(4) If compositing is allowed at a sampling site, by the results of a composite of four consecutive quarterly samples.

(5) If the system can provide documentation that a sample was subject to sampling or analytical errors, the Department may invalidate the result based on its review of the documentation, the sampling result, and the historical sampling data.

(6) Each system shall ensure that the laboratory analyzing its samples collected for compliance with this article calculates and reports the sample-specific Minimum Detectable Activity at the 95% confidence level (MDA_{95}) along with the sample results. The MDA_{95} shall not exceed the DLR and shall be calculated as described in ANSI N42.23 Measurement and Associated Instrumentation Quality Assurance for Radiobioassay Laboratories, Appendix A.7.6 (September 10, 1995).

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§64443. MCLs and Monitoring - Beta Particle and Photon Radioactivity

(a) Each community and nontransient-noncommunity water system (system) shall comply with the primary MCLs in table 64443 and use the DLRs for reporting monitoring results:

Table 64443
Radionuclide Maximum Contaminant Levels (MCLs)
and Detection Levels for Purposes of Reporting (DLRs)

Radionuclide	*MCL*	*DLR*
Beta/photon emitters	4 millirem/year annual dose equivalent to the total body or any internal organ	Gross Beta particle activity: 4 pCi/L
Strontium-90	8 pCi/L (= 4 millirem/yr dose to bone marrow)	2 pCi/L
Tritium	20,000 pCi/L (= 4 millirem/yr dose to total body)	1,000 pCi/L

(b) Each system designated by the Department as vulnerable to contamination by nuclear facilities and/or a determination of vulnerability by a Source Water Assessment, as defined in section 63000.84, shall monitor to determine compliance with the MCLs in table 64443, as follows:

(1) Beginning within one quarter after being notified by the Department that the system is vulnerable, quarterly for beta/photon emitters and annually for tritium and strontium-90 at each water source, or every entry point to the distribution system that is representative of all sources being used under normal operating conditions, and shall conduct all monitoring at the same sample site(s) unless a change is approved by the Department, based on a review of the system and its historical water quality data;

(2) For quarterly monitoring, during the same month (first, second or third) of each quarter during each quarter monitored; and

(3) If the gross beta particle activity minus the naturally-occurring potassium-40 beta particle activity at a sampling site has a running annual average less than or equal to 50 pCi/L (screening level), reduce monitoring to a single sample for beta/photon emitters, tritium and strontium-90 once every three years (compliance monitoring period).

(c) Each system designated by the Department as utilizing waters contaminated by effluents from nuclear facilities on the basis of analytical data and/or a Source Water Assessment, shall:

(1) Beginning within one quarter after being notified by the Department of the above designation, monitor on an ongoing basis pursuant to paragraphs (A) through (C) at each sampling site:

(A) For beta/photon emitters, quarterly by analyzing three monthly samples and averaging the results or by analyzing a composite of three monthly samples;

(B) For iodine-131, quarterly by analyzing a composite of five consecutive daily samples, unless the Department has directed the system to do more frequent monitoring based on a detection of iodine-131 in the sampled water; and

(C) For strontium-90 and tritium, annually by analyzing four quarterly samples and averaging the results or by analyzing a composite of four quarterly samples.

(2) If the gross beta particle activity minus the naturally-occurring potassium-40 beta particle activity at a sampling site has a running annual average (computed quarterly) less than or equal to 15 pCi/L (screening level), reduce the frequency of monitoring to a single sample for beta/photon emitters, iodine-131, strontium-90 and tritium once every three years (compliance monitoring period).

(d) If the gross beta particle activity minus the naturally-occurring potassium-40 beta particle activity exceeds a system's screening level pursuant to Subsection (b)(3) or (c)(2):

(1) The sample shall be analyzed to identify the primary radionuclides present and the doses shall be calculated and summed to determine compliance with the MCL for beta particle/photon radioactivity; and

(2) Except for strontium-90 and tritium for which the MCLs provide the average annual concentrations assumed to produce a total body or organ dose equivalent to 4 millirem/year, the concentration of manmade radionuclides shall be calculated using the 168 hour data list in "Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure," NBS (National Bureau of Standards) Handbook 69 as amended August 1963, U.S. Department of Commerce. (See Title 40, Code of Federal Regulations, section 141.66(d)(2).)

(e) If a system analyzes for naturally-occurring potassium-40 beta particle activity from the same or equivalent samples used for the gross beta particle activity analysis, the potassium-40 beta particle activity shall be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82 pCi/mg.

(f) A system required to monitor under this section may use environmental surveillance data (collected by the nuclear facility to detect any radionuclide contamination) in lieu of monitoring, subject to the Department's determination that the data is applicable to the system based on a review of the data and the hydrogeology of the area. In the event that there is a release of radioactivity or radioactive contaminants from the nuclear facility, a system using environmental surveillance data shall begin the monitoring in paragraph (b)(1) or (c)(1)(A) through (C), whichever is most applicable.

(g) If a sample result is greater than an MCL:

(1) Compliance shall be determined as follows:

(A) At each sampling site, based on the analytical results for that site. Any confirmation sample result shall be averaged with the initial result.

(B) Using all monitoring results collected under this article during the previous 12 months, even if more than the minimum required number of samples was collected.

(C) By a running annual average of four consecutive quarters of sampling results where quarterly monitoring is required, or by an annual sample when applicable for tritium and strontium-90. Averages shall be rounded to the same number of significant figures as the MCL for which compliance is being determined.

1. If any sample result will cause the annual average at any sample site to exceed the MCL, the system shall be out of compliance immediately after being notified of the result;

2. If a system has not analyzed the required number of samples, compliance shall be determined by the average of the samples collected at the site during the most recent 12 months; and

3. If a sample result is less than the DLR in 64443, zero shall be used to calculate the annual average.

(D) If the system can provide documentation that a sample was subject to sampling or analytical errors, the Department may invalidate the result based on its review of the documentation, the sampling result, and the historical sampling data.

(E) Each system shall ensure that the laboratory analyzing its samples collected for compliance with this article calculates and reports the sample-specific Minimum Detectable Activity at the 95% confidence level (MDA_{95}) along with the sample results. The MDA_{95} shall not exceed the DLR and is calculated as described in ANSI N42.23 Measurement and Associated Instrumentation Quality Assurance for Radiobioassay Laboratories, Appendix A.7.6 (September 10, 1995). (See Title 40, Code of Federal Regulations, section 141.66(d)(2).)

(2) If a sample has a gross beta/photon radioactivity level greater than the MCL:

(A) A system shall monitor monthly beginning the month after receiving a result greater than the MCL and continue monthly monitoring until an average of three consecutive monthly sample results does not exceed the MCL ;

(B) The system shall then monitor quarterly until the average of four consecutive quarterly sample results does not exceed the MCL; and

(C) Subsequently, the system shall conduct the monitoring in paragraph (b)(1) or (c)(1)(A) through (C), whichever is most applicable.

§64447.3. Best Available Technologies (BATs) - Radionuclides

The technologies listed in tables 64447.3-A, B and C are the best available technology, treatment technologies, or other means available for achieving compliance with the MCLs for radionuclides in tables 64442 and 64443.

Table 64447.3-A
Best Available Technologies (BATs)
Radionuclides

Radionuclide	*Best Available Technology*
Combined radium-226 and radium-228	Ion exchange, reverse osmosis, lime softening
Uranium	Ion exchange, reverse osmosis, lime softening, coagulation/filtration
Gross alpha particle activity	Reverse osmosis

Beta particle and photon radioactivity	Ion exchange, reverse osmosis

Table 64447.3-B
Best Available Technologies (BATs) and Limitations for Small Water Systems
Radionuclides

UnitTtechnologies	*Limitations (see footnotes)*	*Operator Skill Level Required*	*Raw Water Quality Range and Considerations*
1. Ion exchange	(a)	Intermediate	All ground waters; competing anion concentrations may affect regeneration frequency
2. Point of use, ion exchange	(b)	Basic	All ground waters; competing anion concentrations may affect regeneration frequency
3. Reverse osmosis	(c)	Advanced	Surface waters usually require pre-filtration
4. Point of use, reverse osmosis	(b)	Basic	Surface waters usually require pre-filtration
5. Lime softening	(d)	Advanced	All waters
6. Green sand filtration	(e)	Basic	All ground waters; competing anion concentrations may affect regeneration frequency
7. Co-precipitation with barium sulfate	(f)	Intermediate to advanced	Ground waters with suitable quality
8. Electrodialysis/electrodialysis reversal	(g)	Basic to intermediate	All ground waters
9. Pre-formed hydrous manganese oxide filtration	(h)	Intermediate	All ground waters
10. Activated alumina	(a), (i)	Advanced	All ground waters; competing anion concentrations may affect regeneration frequency
11. Enhanced coagulation/filtration	(j)	Advanced	Can treat a wide range of water qualities

Limitation Footnotes:

[a] The regeneration solution contains high concentrations of the contaminant ions, which could result in disposal issues.

[b] When point of use devices are used for compliance, programs for long-term operation, maintenance, and monitoring shall be provided by systems to ensure proper performance.
[c] Reject water disposal may be an issue.
[d] The combination of variable source water quality and the complexity of the water chemistry involved may make this technology too complex for small systems.
[e] Removal efficiencies can vary depending on water quality.
[f] Since the process requires static mixing, detention basins, and filtration, this technology is most applicable to systems with sufficiently high sulfate levels that already have a suitable filtration treatment train in place.
[g] Applies to ionized radionuclides only.
[h] This technology is most applicable to small systems with filtration already in place.
[i] Chemical handling during regeneration and pH adjustment may be too difficult for small systems without an operator trained in these procedures.
[j] This would involve modification to a coagulation/filtration process already in place.

Table 64447.3-C
Best Available Technologies (BATs) for Small Water Systems by System Size
Radionuclides

Compliance Technologies for System Size Categories Based On Population Served			
	25-500	*501-3,300*	*3,301 - 10,000*
Contaminant	*Unit Technologies (Numbers Correspond to Table 64447.3-B)*		
Combined radium-226 and radium-228	1, 2 ,3, 4, 5, 6, 7, 8, 9	1, 2 ,3, 4, 5, 6, 7, 8, 9	1, 2 ,3, 4, 5, 6, 7, 8, 9
Gross alpha particle activity	3, 4	3, 4	3, 4
Beta particle activity and photon radioactivity	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
Uranium	1, 2, 4, 10, 11	1, 2, 3, 4, 5, 10, 11	1, 2, 3, 4, 5, 10, 11

Article 5.5. Primary standards -- organic chemicals

§64444. Maximum Contaminant Levels – Organic Chemicals.

The MCLs for the primary drinking water chemicals shown in Table 64444-A shall not be exceeded in the water supplied to the public.

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Table 64444-A
Maximum Contaminant Levels
Organic Chemicals

Chemical	*Maximum Contaminant Level, mg/L*
(a) Volatile Organic Chemicals (VOCs)	
Benzene	0.001
Carbon Tetrachloride	0.0005
1,2-Dichlorobenzene	0.6
1,4-Dichlorobenzene	0.005
1,1-Dichloroethane	0.005
1,2-Dichloroethane	0.0005
1,1-Dichloroethylene	0.006
cis-1,2-Dichloroethylene	0.006
trans-1,2-Dichloroethylene	0.01
Dichloromethane	0.005
1,2-Dichloropropane	0.005
1,3-Dichloropropene	0.0005
Ethylbenzene	0.3
Methyl-*tert*-butyl ether	0.013
Monochlorobenzene	0.07
Styrene	0.1
1,1,2,2-Tetrachloroethane	0.001
Tetrachloroethylene	0.005
Toluene	0.15
1,2,4-Trichlorobenzene	0.005
1,1,1-Trichloroethane	0.200
1,1,2-Trichloroethane	0.005
Trichloroethylene	0.005
Trichlorofluoromethane	0.15
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.2
Vinyl Chloride	0.0005
Xylenes	1.750*

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Table 64444-A (continued)
Maximum Contaminant Levels
Organic Chemicals

Chemical	*Maximum Contaminant Level, mg/L*
(b) Non-Volatile Synthetic Organic Chemicals (SOCs)	
Alachlor	0.002
Atrazine	0.001
Bentazon	0.018
Benzo(a)pyrene	0.0002
Carbofuran	0.018
Chlordane	0.0001
2,4-D	0.07
Dalapon	0.2
Dibromochloropropane	0.0002
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate	0.004
Dinoseb	0.007
Diquat	0.02
Endothall	0.1
Endrin	0.002
Ethylene Dibromide	0.00005
Glyphosate	0.7
Heptachlor	0.00001
Heptachlor Epoxide	0.00001
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Methoxychlor	0.03
Molinate	0.02
Oxamyl	0.05
Pentachlorophenol	0.001
Picloram	0.5
Polychlorinated Biphenyls	0.0005
Simazine	0.004
Thiobencarb	0.07
Toxaphene	0.003
2,3,7,8-TCDD (Dioxin)	3×10^{-8}
2,4,5-TP (Silvex)	0.05

*MCL is for either a single isomer or the sum of the isomers.

§64445. Initial sampling - organic chemicals

(a) Each community and nontransient-noncommunity water system shall collect four quarterly samples during the year designated by the Department of each compliance period beginning with the compliance period starting January 1, 1993, from each water source at a site prior to any treatment and test for all applicable organic chemicals listed in Table 64444-A. The Department will designate the year based on historical monitoring frequency and laboratory capacity. For surface sources, the samples shall be taken at each water intake. For groundwater sources, the samples shall be taken at each well head. Where multiple intakes or wells draw from the same water supply, the Department will consider sampling of representative sources as a means of complying with this section. Selection of representative sources shall be based on evidence which includes a hydrogeological survey and sampling results. Wells shall be allowed to flow for a minimum of 15 minutes before sampling to insure that the samples reflect the water quality of the source. In place of water source samples, a supplier may collect samples at sites located at the entry points to the distribution system. The samples shall be representative of each source after treatment. The system shall collect each sample at the same sampling site, unless a change is approved by the Department.

(b) For any organic chemical added to Table 64444-A, the water system shall initiate the quarterly monitoring for that chemical in January of the calendar year after the effective date of the MCL.

(c) A water system may request approval from the Department to composite samples from up to five sampling sites, provided that the number of the sites to be composited is less than the ratio of the MCL to the DLR in §64445.1. Approval will be based on a review of three years of historical data, well construction and aquifer information for groundwater, and intake location, similarity of sources, and watershed characteristics for surface water. Compositing shall be done in the laboratory and analyses shall be conducted within 14 days of sample collection.

(1) Systems serving more than 3,300 persons shall composite only from sampling sites within a single system. Systems serving 3,300 persons or less may composite among different systems up to the 5-sample limit.

(2) If any organic chemical is detected in the composite sample, a follow-up sample shall be analyzed within 14 days from each sampling site included in the composite for the contaminants which were detected. The water supplier shall report the results to the Department within 14 days of the follow-up sample collection. If available, duplicates of the original sample taken from each sampling site used in the composite may be used instead of resampling.

(d) A water system may apply to the Department for a monitoring waiver for one or more of the organic chemicals on Table 64444-A in accordance with the following:

(1) A source may be eligible for a waiver if it can be documented that the chemical has not been previously used, manufactured, transported, stored, or disposed of within the watershed or zone of influence and therefore, that the source can be designated nonvulnerable.

(2) If previous use of the chemical locally is unknown or the chemical is known to have been used previously and the source cannot be designated nonvulnerable pursuant to Paragraph (d)(1), it may still be eligible for a waiver based on a review related to susceptibility to contamination. The application to the Department for a waiver based on susceptibility shall include the following:

(A) Previous monitoring results;
(B) user population characteristics;
(C) proximity to sources of contamination;
(D) surrounding land uses;
(E) degree of protection of the water source;
(F) environmental persistence and transport of the chemical in water, soil and air;
(G) elevated nitrate levels at the water supply source; and
(H) historical system operation and maintenance data including previous Departmental inspection results.

(3) To apply for a monitoring waiver for VOCs, the water system shall have completed the initial four quarters of monitoring pursuant to subsection (a) or three consecutive years of monitoring with no VOCs detected. If granted a waiver for VOC monitoring, a system using groundwater shall collect a minimum of one sample from every sampling site every six years and a system using surface water shall not be required to monitor for the term of the waiver. The term of a VOC waiver shall not exceed three years.

(4) To obtain a monitoring waiver for one or more of the SOCs, the water system may apply before doing the initial round of monitoring or shall have completed three consecutive years of annual monitoring with no detection of the SOC(s) listed. If the system is granted a waiver for monitoring for one or more SOC(s), no monitoring for the waived SOC(s) shall be required for the term of the waiver, which shall not exceed three years.

(e) For water sources designated by a water supplier as standby sources, the water supplier shall sample each source for any organic chemical added to Table 64444-A once within the three-year period beginning in January of the calendar year after the effective date of the MCL.

(f) Water quality data collected prior to January 1, 1988, for VOCs, or January 1, 1990, for SOCs, and/or data collected in a manner inconsistent with this section shall not be used in the determination of compliance with the monitoring requirements for organic chemicals.

(g) Data (i.e., a single sample) collected in a manner consistent with this section after January 1, 1998 in which no MTBE is detected, along with a designation of nonvulnerability pursuant to subsection (d), may be used to satisfy the initial lmonitoring requirements in subsection (a). If the requirements are satisfied in this way by a water system, the system shall begin annual monitoring pursuant to Section 64445.1(b)(1).

(h) Water quality data collected in compliance with the monitoring requirements of this section by a wholesaler agency providing water to a public water system shall be acceptable for use by that system for compliance with the monitoring requirements of this section.

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§64445.1. Monitoring and Compliance – Organic Chemicals.

(a) For the purposes of this article, detection shall be defined by the detection limits for purposes of reporting (DLRs) in Table 64445.1-A:

Table 64445.1-A
Detection Limits for Purposes of Reporting (DLRs)
for Regulated Organic Chemicals

Chemical	*Detection Limit for Purposes of Reporting (DLR)(mg/L)*
(a) All VOCs, except as listed	0.0005
Methyl-*tert*-butyl ether	0.003
Trichlorofluoromethane	0.005
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.01
(b) SOCs	
Alachlor	0.001
Atrazine	0.0005
Bentazon	0.002
Benzo(a)pyrene	0.0001
Carbofuran	0.005
Chlordane	0.0001
2,4-D	0.01
Dalapon	0.01
Dibromochloropropane (DBCP)	0.00001
Di(2-ethylhexyl)adipate	0.005
Di(2-ethylhexyl)phthalate	0.003
Dinoseb	0.002
Diquat	0.004
Endothall	0.045
Endrin	0.0001
Ethylene dibromide (EDB)	0.00002
Glyphosate	0.025
Heptachlor	0.00001
Heptachlor epoxide	0.00001
Hexachlorobenzene	0.0005
Hexachlorocyclopentadiene	0.001
Lindane	0.0002
Methoxychlor	0.01
Molinate	0.002
Oxamyl	0.02
Pentachlorophenol	0.0002
Picloram	0.001
Polychlorinated biphenyls (PCBs) (as decachlorobiphenyl)	0.0005

Chemical	*Detection Limit for Purposes of Reporting (DLR)(mg/L)*
Simazine	0.001
Thiobencarb	0.001
Toxaphene	0.001
2,3,7,8-TCDD (Dioxin)	5×10^{-9}
2,4,5-TP (Silvex)	0.001

(b) When organic chemicals are not detected pursuant to Table 64445.1-A.

(1) A water system which has not detected any of the VOCs on Table 64444-A during the initial four quarters of monitoring, shall collect and analyze one sample annually. After a minimum of three years of annual sampling with no detection of a VOC in Table 64444-A, a system using groundwater may reduce the monitoring frequency to one sample during each compliance period. A system using surface water shall continue monitoring annually.

(2) A system serving more than 3,300 persons which has not detected an SOC on Table 64444-A during the initial four quarters of monitoring shall collect a minimum of two quarterly samples for that SOC in one year during the year designated by the Department of each subsequent compliance period. The year will be designated on the basis of historical monitoring frequency and laboratory capacity.

(3) A system serving 3,300 persons or less which has not detected an SOC on Table 64444-A during the initial four quarters of monitoring shall collect a minimum of one sample for that SOC during the year designated by the Department of each subsequent compliance period. The year will be designated on the basis of historical monitoring frequency and laboratory capacity.

(c) When organic chemicals are detected pursuant to Table 64445.1-A.

(1) Prior to proceeding with the requirements of paragraphs (c)(2) through (7), the water supplier may first confirm the analytical result, as follows: Within seven days from the notification of an initial finding from a laboratory reporting the presence of one or more organic chemicals in a water sample, the water supplier shall collect one or two additional sample(s) to confirm the initial finding. Confirmation of the initial finding shall be shown by the presence of the organic chemical in either the first or second additional sample, and the detected level of the contaminant for compliance purposes shall be the average of the initial and confirmation sample(s). The initial finding shall be disregarded if two additional samples do not show the presence of the organic chemical.

(2) If one or both of the related organic chemicals heptachlor and heptachlor epoxide are detected, subsequent monitoring shall analyze for both chemicals until there has been no detection of either chemical for one compliance period.

(3) A groundwater sampling site at which one or more of the following chemicals has been detected shall be monitored quarterly for vinyl chloride: trichloroethylene, tetrachloroethylene,1,2-dichloroethane,1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene. If vinyl chloride is not detected in the first quarterly

sample, the sampling site shall be monitored once for vinyl chloride during each compliance period.\

(4) If the detected level of organic chemicals for any sampling site does not exceed any shown in Table 64444-A, the water source shall be resampled every three months and the samples analyzed for the detected chemicals. After one year of sampling an approved surface water system or two quarters of sampling a groundwater system, the Department will consider allowing the water supplier to reduce the sampling to once per year upon request, based on a review of previous sampling data. Systems shall monitor during the quarter(s) which previously yielded the highest analytical results.

(5) If the detected level of an organic chemical for any sampling site exceeds that listed in Table 64444-A, the water supplier shall report this information to the Department within 48 hours. Unless use of the contaminated source is discontinued, the water supplier shall resample the contaminated source as follows:

(A) Water systems serving more than 3,300 persons shall sample monthly for six months and shall submit the results to the Department as specified in §64451(a). A water source shall be deemed to be in compliance with §64444 if the average concentration of the initial finding, confirmation sample(s), and six subsequent monthly samples does not exceed the MCL shown in Table 64444-A. In such cases, the water supplier may reduce the sampling frequency to once every three months. If the average annual concentration of four quarterly samples exceeds the MCL, the water source shall be deemed to be in violation of §64444. If any sample would cause the annual average to exceed the MCL, then the system is out of compliance immediately.

(B) Water systems serving 3,300 persons or less shall sample quarterly for one year and shall submit the results to the Department as specified in §64451(a). Compliance with §64444 shall be based on the average concentration of the initial finding, confirmation sample(s) if collected, and three subsequent quarterly samples. If any sample would cause the annual average to exceed the MCL, then the system is out of compliance immediately. If the average concentration does not exceed the MCL in Table 64444-A, the water supplier may reduce the sampling frequency to once every year during the quarter that previously yielded the highest analytical result. If the average concentration exceeds the MCL in Table 64444-A, the water system shall be deemed to be in violation of §64444. Subsequently, compliance shall be determined on the basis of a running annual average of the most recent four quarters of sample results.

(6) If any resample, other than those taken in accordance with (c)(5) of this section, of a water sampling site shows that the concentration of any organic chemical exceeds a MCL shown in Table 64444-A, the water supplier shall proceed in accordance with (c)(1) and (c)(4), or (c)(5).

(7) If an organic chemical is detected and the concentration exceeds ten times the MCL, the water supplier shall notify the Department within 48 hours of the receipt of the results and the contaminated site shall be resampled within 48 hours to confirm the result. The water supplier shall notify the Department of the result of the confirmation sample(s) within 24 hours of the receipt of the confirmation result(s).

(A) If the average concentration of the original and confirmation sample(s) is less than ten times the MCL, the water supplier shall proceed in accordance with subsection (c)(5).

(B) If the average concentration of the original and confirmation samples exceeds ten times the MCL, use of the contaminated water source shall immediately be discontinued. Such a water source shall not be returned to service without written approval from the Department.

§64445.2. Sampling of Treated Water Sources.

(a) Each water supplier utilizing treatment to comply with any MCL for an organic chemical listed in Table 64444-A shall collect monthly samples of the treated water at a site prior to the distribution system. If the treated water exceeds the MCL, the water supplier shall resample the treated water to confirm the result and report the result to the Department within 48 hours of the confirmation.

(b) The Department will consider requiring more frequent monitoring based on an evaluation of (1) the treatment process used, (2) the treatment effectiveness and efficiency, and (3) the concentration of the organic chemical in the water source.

Article 12. Best available technologies (BAT)

§64447. Best available technologies (BAT) – Microbiological Contaminants.

The technologies identified by the Department as the best available technology, treatment techniques, or other means available for achieving compliance with the total coliform MCL are as follows:

(a) Protection of wells from coliform contamination by appropriate placement and construction;

(b) Maintenance of a disinfectant residual throughout the distribution system;

(c) Proper maintenance of the distribution system; and

(d) Filtration and/or disinfection of approved surface water, in compliance with Section 64650, or disinfection of groundwater.

§64447.2. Best available technologies (BAT) - inorganic chemicals

The technologies listed in Table 64447.2-A are the best available technology, treatment techniques, or other means available for achieving compliance with the MCLs in table 64431-A for inorganic chemicals.

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Table 64447.2-A
Best Available Technologies (BAT)
Inorganic Chemicals

Chemical	*Best Available Technologies (BATs)*
Aluminum	10
Antimony	2, 7
Arsenic	1, 2, 5, 6, 7
Asbestos	2, 3, 8
Barium	5, 6, 7, 9
Beryllium	1, 2, 5, 6, 7
Cadmium	2, 5, 6, 7
Chromium	2, 5, 6[a], 7
Cyanide	5, 7, 11
Fluoride	1
Mercury	2[b], 4, 6[b], 7[b]
Nickel	5, 6, 7
Nitrate	5, 7, 9
Nitrite	5, 7
Selenium	1, 2[c], 6, 7, 9
Thallium	1, 5

[a]BAT for Chromium III only.
[b]BAT only if influent mercury concentrations <10 ug/L.
[c]BAT for Selenium IV only.

Key to BATs in Table 64447.2:
1 = Activated Alumina
2 = Coagulation/Filtration (not BAT for systems < 500 service connections)
3 = Direct and Diatomite Filtration
4 = Granular Activated Carbon
5 = Ion Exchange
6 = Lime Softening (not BAT for systems < 500 service connections)
7 = Reverse Osmosis
8 = Corrosion Control
9 = Electrodialysis
10 = Optimizing treatment and reducing aluminum added
11 = Chlorine oxidation

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§64447.4. Best Available Technologies (BATs) - Organic Chemicals

The technologies listed in Table 64447.4-A are the best available technology, treatment technologies, or other means available for achieving compliance with the MCLs in Table 64444-A for organic chemicals.

Table 64447.4-A
Best Available Technologies (BATs)
Organic Chemicals

Chemical	*Best Available Technologies*		
	Granular Activated Carbon	Packed Tower Aeration	Oxidation
(a) Volatile Organic Chemicals (VOCs)			
Benzene	X	X	
Carbon Tetrachloride	X	X	
1,2-Dichlorobenzene	X	X	
1,4-Dichlorobenzene	X	X	
1,1-Dichloroethane	X	X	
1,2-Dichloroethane	X	X	
1,1-Dichloroethylene	X	X	
cis-1,2-Dichloroethylene	X	X	
trans-1,2-Dichloroethylene	X	X	
Dichloromethane		X	
1,2-Dichloropropane	X	X	
1,3-Dichloropropene	X	X	
Ethylbenzene	X	X	
Methyl-*tert*-butyl ether		X	
Monochlorobenzene	X	X	
Styrene	X	X	
1,1,2,2-Tetrachloroethane	X	X	
Tetrachloroethylene	X	X	
Toluene	X	X	
1,2,4-Trichlorobenzene	X	X	
1,1,1-Trichloroethane	X	X	
1,1,2-Trichloroethane	X	X	
Trichlorofluoromethane	X	X	
Trichlorotrifluoroethane	X	X	
Trichloroethylene	X	X	
Vinyl Chloride		X	

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Chemical	*Best Available Technology*		
	Granular Activated Carbon	Packed Tower Aeration	Oxidaton
Xylenes	X	X	
(b) Synthetic Organic Chemicals (SOCs)			
Alachlor	X	X	
Atrazine	X		
Bentazon		X	
Benzo(a)pyrene	X		
Carbofuran	X		
Chlordane	X		
2,4-D	X		
Dalapon	X		
Di(2-ethylhexyl)adipate	X	X	
Dinoseb	X		
Diquat	X		
1,2-Dibromo-3-chloropropane	X	X	
Di(2-ethylhexyl)phthalate	X		
Endothall	X		
Endrin	X		
Ethylene Dibromide	X	X	
Glyphosate			X
Heptachlor	X		
Heptachlor epoxide	X		
Hexachlorobenzene	X		
Hexachlorocyclopentadiene	X	X	
Lindane	X		
Methoxychlor	X		
Molinate	X		
Oxamyl	X		
Picloram	X		
Pentachlorophenol	X		
Polychlorinated Biphenyls	X		
Simazine	X		
Thiobencarb	X		
Toxaphene	X	X	
2,3,7,8-TCDD (Dioxin)	X		
2,4,5-TP (Silvex)	X		

Article 14. Treatment Techniques

§64448. Treatment Technique Requirements.

(a) A public water system which uses acrylamide and/or epichlorohydrin in drinking water treatment shall certify annually in writing to the Department that the combination of dose and monomer does not exceed the following levels:

(1) Acrylamide: 0.05% monomer in polyacrylamide dosed at 1 mg/L, or equivalent.

(2) Epichlorohydrin: 0.01% residual of epichlorohydrin dosed at 20 mg/L, or equivalent.

Article 16. Secondary Drinking Water Standards

§64449. Secondary Maximum Contaminant Levels and Compliance.

(a) The secondary MCLs shown in Tables 64449-A and 64449-B shall not be exceeded in the water supplied to the public, because these constitutents may adversely affect the taste, odor or appearance of drinking water.

Table 64449-A
Secondary Maximum Contaminant Levels
Consumer Acceptance Limits

Constituents	*Maximum Contaminant Levels/Units*
Aluminum	0.2 mg/L
Color	15 Units
Copper	1.0 mg/L
Corrosivity	Non-corrosive
Foaming Agents (MBAS)	0.5 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Methyl-tert-butyl ether (MTBE)	0.005 mg/L
Odor--Threshold	3 Units
Silver	0.1 mg/L
Thiobencarb	0.001 mg/L
Turbidity	5 Units
Zinc	5.0 mg/L

Table 64449-B
Secondary Maximum Contaminant Levels -- Ranges

	Maximum Contaminant Level Ranges		
Constituent, Units	*Recommended*	*Upper*	*Short Term*
Total Dissolved Solids, mg/L	500	1,000	1,500
or Specific Conductance,	900	1,600	2,200

micromhos			
Chloride, mg/L	250	500	600
Sulfate, mg/L	250	500	600

(b) The secondary MCLs listed in Table 64449-A shall not be exceeded in:
(1) New community water systems.
(2) New sources developed for existing community water systems.
(3) Existing community water systems.

(c) Community groundwater systems shall monitor every three years and approved surface water systems shall monitor annually for the following:
(1) Secondary MCLs listed in Tables 64449-A and 64449-B; and
(2) Bicarbonate, carbonate, and hydroxide alkalinity, calcium, magnesium, sodium, and total hardness.

(d) In existing community water systems, if any MCL in Table 64449-A is exceeded, the water supplier may be required, following an investigation by the Department, to conduct a study.
(1) The investigation by the Department shall determine the extent of:
(A) Noncompliance with the MCLs.
(B) Consumer dissatisfaction which is based upon the secondary drinking water standards.
(2) The study conducted by the water supplier shall:
(A) Be conducted in a manner and in accordance with a schedule acceptable to the Department and be completed in a period of time not to exceed one year.
(B) Be made by persons acceptable to the Department.
(C) Determine the degree of consumer acceptance of the water supply.
(D) Investigate the causes and methods of correction, and estimate the cost of one or more alternative solutions.
(3) The results of the study conducted by the water supplier shall be made available to the:
(A) Users at an appropriately noticed public meeting.
(B) Department.
(C) Public Utilities Commission, if appropriate.

(e) The requirements of (b)(2) and (3) may be waived by the Department following the completion of an investigation as required in (d) based upon, but not necessarily limited to:
(1) Consumer acceptance of water not meeting the MCLs shown in Table 64449-A.
(2) Economic considerations.

(f) For the constituents shown on Table 64449-B, no fixed consumer acceptance contaminant level has been established.

(1) Constituent concentrations lower than the Recommended contaminant level are desirable for a higher degree of consumer acceptance.

(2) Constituent concentrations ranging to the Upper contaminant level are acceptable if it is neither reasonable nor feasible to provide more suitable waters.

(3) Constituent concentrations ranging to the Short Term contaminant level are acceptable only for existing systems on a temporary basis pending construction of treatment facilities or development of acceptable new water sources.

(g) New services from systems serving water which carries constituent concentrations between the Upper and Short Term contaminant levels shall be approved only:

(1) If adequate progress is being demonstrated toward providing water of improved mineral quality.

(2) For other compelling reasons approved by the Department.

(h) A water system may apply to the Department for a waiver from the monitoring frequencies specified in subsection (c), if the system has conducted at least three rounds of monitoring (three periods for groundwater sources or three years for approved surface water sources) and these analytical results are less than the MCLs. The water system shall specify the basis for its request. A system with a waiver shall collect a minimum of one sample per source while the waiver is in effect and the term of the waiver shall not exceed one compliance cycle (i.e., nine years).

(i) Nontransient-noncommunity and transient-noncommunity water systems shall monitor for bicarbonate, carbonate, and hydroxide alkalinity, calcium, iron, magnesium, manganese, -pH, sodium, and total hardness, as follows:

(1) All systems shall monitor all sources at least once.

(2) Surface water sources for parks and other facilities with an average daily population use of more than 1000 people and/or which are determined to be subject to potential contamination based on a sanitary survey shall be monitored at the same frequency as community water systems.

§64449.5. Distribution System Physical Water Quality.

(a) The water supplier shall determine the physical water quality in the distribution system. This determination shall be based on one or more of the following:

(1) Main flushing operations and flushing records.

(2) Consumer complaint records showing location, nature and duration of the physical water quality problem.

(3) Other pertinent data relative to physical water quality in the distribution system.

(b) If the Department determines that a water system does not have sufficient data on physical water quality in the distribution system to make the determination required in paragraph (a), the water supplier shall collect samples for the following general physical analyses: color, odor, and turbidity. Samples shall be collected from representative points in the distribution system:

(1) For community water systems with 200 to 1,000 service connections: one sample per month.

(2) For community water systems with greater than 1,000 service connections: one sample for every four bacteriological samples required per month.

(3) For community water systems with less than 200 service connections: as established by the local health officer or the Department.

(c) Odor samples required as a part of general physical analyses may be examined in the field as per Section 64415(b).

(d) The distribution system water of public water systems shall be free from significant amounts of particulate matter.

Article 17. Special monitoring requirements for unregulated chemicals

§64450. Unregulated chemicals – Monitoring.

(a) Community water systems and nontransient-noncommunity water systems shall monitor for the chemicals in table 64450, pursuant to subsection (b):

Table 64450
Unregulated Chemicals

Chemical	*Synonyms*
(1) Boron	
(2) Chromium VI	Hexavalent chromium
(3) Dichlorodifluoromethane	Diflurorodichloromethane
(4) Ethyl-tert-butyl ether	ETBE
(5) Perchlorate	
(6) tert-Amyl-methyl ether	TAME
(7) tert-Butyl alcohol	TBA
(8) 1,2,3-Trichloropropane	TCP
(9) Vanadium	

(b) All vulnerable community and nontransient-noncommunity water systems shall conduct and complete one round of monitoring for hexavalent chromium by December 31, 2002, and for the other unregulated chemicals in table 64450 by December 31, 2003. Monitoring shall be conducted by collecting source water samples, or samples from the distribution entry points that are representative of typical operating conditions. At least one of the samples shall be collected during the period from May 1 through July 31 (vulnerable time), unless the Department specifies a different vulnerable time for the water system due to seasonal conditions related to use, manufacture and/or weather. Monitoring shall be as follows:

(1) Surface water systems shall collect four quarterly samples at each sample site; the system shall select either the first, second, or third month of a quarter and sample in that same month of each of four consecutive quarters.

(2) Ground water systems shall collect two samples in a single year, five to seven months apart.

(3) The water system shall collect each sample at the same sampling site, unless a change is approved by the Department.

(c) A water system may apply to the Department for a monitoring waiver for one or more of the chemicals on table 64450 in accordance with sections 64445(d)(1) and (2).

(d) If a system serves fewer than 150 service connections, it may be eligible for an exemption from the monitoring requirements of this section, based on a Departmental review of the previous five years of sampling data. To request an exemption, the system operator shall submit a written request to the Department that includes a statement that the system is available for sampling by the Department.

(e) A water system that has monitoring data collected after January 1, 1998, that meets the requirements in subsection (b) may use that data to comply with the monitoring requirements in this section.

Article 18. Records and Reporting

§64451. Reporting Requirements.

(a) Analytical results of all sample analyses completed in a calendar month shall be reported to the Department no later than the tenth day of the following month.

(b) Analytical results of all sample analyses completed by water wholesalers in a calendar month shall be reported to retail customers and the Department no later than the tenth day of the following month.

(c) Analytical results shall be reported to the Department electronically using the Electronic Deliverable Format as defined in The Electronic Deliverable Format [EDF] Version 1.2i Guidelines & Restrictions dated April 2001 and Data Dictionary dated April 2001.

§64453. Record Maintenance.

(a) Each water supplier shall maintain records on all water quality and system water outage complaints, both verbal and written, received and corrective action taken. These records shall be retained for a period of five years for Department review.

(b) Each water supplier shall retain, on or at a convenient location near the water utility premises, records as indicated below:

(1) Records of bacteriological analyses for at least the 5 most recent years and chemical analyses for at least the most recent 10 years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

(A) The date, place and time of sampling and identification of the person who collected the sample.

(B) Identification of the sample as a routine sample, check sample, raw or finished water or other special sample.

(C) Date of Report.

(D) Name of the laboratory and either the person responsible for performing the analysis or the laboratory director.

(E) The analytical technique or method used.

(F) The results of the analysis.

(2) Records and resultant corrective actions shall be kept not less than three years following the final action taken to correct a particular violation.

(3) Copies of any written reports, summaries or communications relating to sanitary surveys of the system conducted by the water supplier, a private consultant or any local, state or federal agency, for not less than 10 years following completion of the sanitary survey involved.

(4) Variances or exemptions granted to the system, for not less than five years following the expiration of such variance or exemption.

Article 19. Notification of the Department and Water Consumers

§64463.2. Reporting and Notification of Unregulated Organic Chemicals Monitoring.

(a) The owner or operator of a community water system or a non-transient, non-community water system shall notify persons served by the system of the availability of results of monitoring conducted pursuant to Article 5.7 by including a notice in the first set of water bills issued by the system after the receipt of the results or, in any case, by written notice within three months. The notice shall identify a person and supply the telephone number to contact for information on the monitoring results.

(b) The owner or operator of a community water system or a non-transient, non-community water system shall send a copy of results of monitoring conducted pursuant to Article 5.7 within 30 days of receipt and any public notice pursuant to subsection (a) to the Department.

§64464.1. Notification Methods.

(a) When a water supplier is required to provide notice pursuant to section 64464.3, or 64464.6, or 64465, then the notice shall be provided using one or more of the following methods as directed by the Department pursuant to sections 64464.3, 64464.6, or 64465:

(1) Method 1 (Electronic Media Notice) - Notice shall be given by furnishing a copy of the notice to the radio and television stations broadcasting in the area served by the system, as soon as possible but in no case later than 24 hours after being directed to do so by the Department.

(2) Method 2 (Daily Newspaper Notice of Water Quality Failure) - Notice shall be given once within 14 days after the violation or failure by publication in a daily newspaper of general circulation in the area served by the system.

(3) Method 3 (Weekly Newspaper Notice of Water Quality Failure) - Notice shall be given once within 14 days after the violation or failure by publication in a weekly newspaper of general circulation serving the area.

(4) Method 4 (Mail Delivery of Notice of Water Quality Failure) - Notice by direct mail or with the water bill shall be given once within 45 days after the violation or failure. The Department may waive the requirement for mail delivery if it determines that the violation or failure has been corrected within the 45 day period. If such a waiver is given it shall be given in writing within the 45 day period. Repeat notice by mail shall be given at least once every 3 months for as long as the violation or failure continues.

(5) Method 5 (Hand Delivery of Notice of Water Quality Failure) - Notice by hand delivery shall be given once within 45 days after the violation or failure. The Department may waive the requirement for hand delivery if it determines that the violation has been corrected within the 45 day period. If such a waiver is given it shall be given in writing within the 45 day period. Repeat notice by hand delivery shall be given at least once every 3 months for as long as the violation or failure continues.

(6) Method 6 (Expedited Hand Delivery of Notice of Water Quality Failure) - Notice by hand delivery shall be given once within 14 days after the violation or failure. Repeat notice by hand delivery shall be given at least once every 3 months for as long as the violation or failure continues.

(7) Method 7 (Continuous Posting of Notice of Water Quality Failure) - Notice by posting in conspicuous places within the area served by the system shall be initiated within 14 days after the violation or failure. Posting shall continue for as long as the violation or failure exists.

(8) Method 8 (Daily Newspaper Notice of Procedural Failure) - Notice shall be given once within three months of the violation or failure by publication in a daily newspaper of general circulation in the area served by the system.

(9) Method 9 (Weekly Newspaper Notice of Procedural Failure) - Notice shall be given once within three months of the violation or failure by publication in a weekly newspaper of general circulation serving the area.

(10) Method 10 (Mail Delivery of Notice of Procedural Failure) - Notice by direct mail or with the water bill shall be given at least once every three months for as long as the violation or failure continues.

(11) Method 11 (Hand Delivery of Notice of Procedural Failure) - Notice by hand delivery shall be given once within three months of the violation or failure. Repeat notice by hand delivery shall be given at least once every three months for as long as the violation or failure continues.

(12) Method 12 (Continuous Posting of Notice of Procedural Failure) - Notice by posting in conspicuous places within the area served by the system shall be initiated within 3 months of the violation or failure. Posting shall continue for as long as the violation or failure exists.

§64464.3. Public Notification - Water Quality Failure.

(a) Unless otherwise directed by the Department, the water supplier shall notify the Department and the persons served by the water system whenever any of the following occurs:

(1) The water supplied to the consumers exceeds the bacteriological quality limits specified in Section 64426.1, or exceeds the MCLs for inorganic chemicals, disinfection byproducts, radioactivity, or organic chemicals, as specified in Sections 64431, 64439, 64441, 64443, 64444, and 64533, or exceeds the MRDLs for disinfectants in Section 64533.5.

(2) The water supplier fails to comply with a prescribed treatment technique established in lieu of an MCL.

(3) The water supplier violates any schedule prescribed pursuant to a variance or exemption.

(b) The notice to the public required pursuant to paragraph (a) shall be given in accordance with the following methods which are described in 64464.1:

(1) For community water systems:

(A) By Method 2, and by Method 4 or 5; or

(B) If the Department finds that there is no daily newspaper of general circulation serving the area served by the system, by Method 3 and by Method 4 or 5; or

(C) If the Department finds that there is no daily or weekly newspaper of general circulation serving the area served by the system, then by Method 6 or 7 as directed by the Department based on the degree of health risk and the nature of the population served by the system;

(D) If the Department finds that, based on the degree of health risk and the nature of the population served, additional notification is necessary, then it may direct the community water system to carry out such notification required to adequately alert the public to the risk.

(2) For nontransient-noncommunity and transient-noncommunity water systems:

(A) By Method 2 and by Method 4 or 5; or

(B) If the Department finds that there is no daily newspaper in general circulation serving the area served by the water system, then by Method 3 and by Method 4 or 5; or

(C) By Method 6 or 7;

(D) If the Department finds that, based on the degree of health risk and the nature of the population served, additional notification is necessary, then it may direct the nontransient-noncommunity or transient-noncommunity water system to carry out such notification required to adequately alert the public to the risk

§64464.6. Public Notification - Procedural Failure.

(a) Unless otherwise directed by the Department, the water supplier shall notify the Department and the persons served by the water system whenever any of the following occurs:

(1) The water supplier fails to take and report the required number of bacteriological samples in accordance with an approved sample siting plan pursuant to Section 64422 and as specified in Sections 64423 and 64424 or fails to take and report the required number of inorganic chemical, organic chemical, ~~or~~ radiological, disinfectant, disinfection byproduct, or disinfection byproduct precursor samples, as specified in Sections 64432, 64432.1, 64432.2, 64439, 64441, 64443, 64445, 64445.1, 64445.2, ~~and~~ 64450.1, and 64534 through 64536.6; or

(2) The water supplier or its agent fails to comply with a testing procedure prescribed in 40 CFR part 141; or

(3) The water supplier is operating under a variance or exemption.

(b) The notice to the public required pursuant to paragraph (a) shall be given in accordance with the following methods, which are described in 64464.1:

(1) For community water systems:

(A) By Method 8 and by either Method 10 or 11; or

(B) If the Department finds that there is no daily newspaper of general circulation serving the area served by the system, then by Method 9 and by either Method 10 or 11; or

(C) If the Department finds that there is no daily or weekly newspaper of general circulation serving the area served by the system, then by Method 11 or 12 as directed by the Department based on the degree of health risk and the nature of the population served by the system;

(D) If the Department finds that, based on the degree of health risk and the nature of the population served, additional notification is necessary, then it may direct the community water system to carry out such notification required to adequately alert the public to the risk.

(2) For nontransient-noncommunity and transient-noncommunity water systems:

(A) By Method 8 and either Method 10 or 11; or

(B) If the Department finds that there is no daily newspaper in general circulation serving the area served by the water system, then by Method 9 and either Method 10 or 11; or

(C) By Method 11 or 12.

(D) If the Department finds that, based on the degree of health risk and the nature of the population served, additional notification is necessary, then it may direct the nontransient-noncommunity or transient-noncommunity water system to carry out such notification required to adequately alert the public to the risk.

§64465. Notification of An Acute Health Risk.

When the Department determines that the presence of any contaminant or residual disinfectant occurs at a level posing an acute risk to human health pursuant to Section 64400, the water supplier of a community water system shall give notice to persons served by the system by Section 64464.1(a) - Method 1.

§64466. Notification of New Users.
The water supplier shall give a copy of the most recent public notice required pursuant to section 64464.3 for any continuing violation or continuing failure of any primary drinking water standard, water treatment technique, or any variance or exemption schedule to all new billing units or new hookups prior to or at the time service begins.

§64467. Notice.
Any notice provided by the water supplier pursuant to Section 64464.3 or Section 64464.6 shall provide a clear and readily understandable explanation of the violation, the potential adverse health effects of contaminants present, the population at risk, the steps that the water supplier is taking to correct the violation, the necessity for seeking alternative water supplies, and any preventive measures the consumers should take until the violation is corrected. The notice shall be conspicuous and not contain unduly technical language, unduly small print or similar problems that frustrate the purpose of the notice. Each notice shall include a telephone number of the water supplier or designee to be contacted for obtaining additional information concerning the notice. When appropriate or directed by the Department, the notice shall be multilingual.

§64467.5. Wholesaler.
Public notification that involves a wholesaler and retailer water supply relationship shall be given by the retail water supplier unless the retailer makes arrangement for the wholesaler to provide the notification.

§64468.1. Health Effects Language -- Inorganic Chemicals.
Pursuant to Section 64467, the explanation of potential adverse health effects for inorganic chemicals shall include the following mandatory language for the designated contaminants:

(a) Antimony: "The California Department of Health Services (DHS) sets drinking water standards and has determined that antimony is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in soils, ground water and surface waters and is often used in the flame retardant industry. It is also used in ceramics, glass, batteries, fireworks and explosives. It may get into drinking water through natural weathering of rock, industrial production, municipal waste disposal or manufacturing processes. This chemical has been shown to decrease longevity, and altered blood levels of cholesterol and glucose in laboratory animals such as rats exposed to high levels during their lifetimes. DHS has set the drinking water standard for antimony at 0.006 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to antimony."

(b) Asbestos: "The California Department of Health Services (DHS) sets drinking water standards and has determined that asbestos fibers greater than 10 micrometers in length are a health concern at certain levels of exposure. Asbestos is a naturally occurring mineral. Most asbestos fibers in drinking water are less than 10 micrometers in length

and occur in drinking water from natural sources and from corroded asbestos-cement pipes in the distribution system. The major uses of asbestos were in the production of cements, floor tiles, paper products, paint, and caulking; in transportation-related applications; and in the production of textiles and plastics. Asbestos was once a popular insulating and fire retardant material. Inhalation studies have shown that various forms of asbestos have produced lung tumors in laboratory animals. The available information on the risk of developing gastrointestinal tract cancer associated with the ingestion of asbestos from drinking water is limited. Ingestion of intermediate-range chrysotile asbestos fibers greater than 10 micrometers in length is associated with causing benign tumors in male rats. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for asbestos at 7 million long fibers per liter to reduce the potential risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to asbestos."

(c) Barium: "The California Department of Health Services (DHS) sets drinking water standards and has determined that barium is a health concern at certain levels of exposure. This inorganic chemical occurs naturally in some aquifers that serve as sources of ground water. It is also used in oil and gas drilling muds, automotive paints, bricks, tiles and jet fuels. It generally gets into drinking water after dissolving from naturally occurring minerals in the ground. This chemical may damage the heart and cardiovascular system, and is associated with high blood pressure in laboratory animals such as rats exposed to high levels during their lifetimes. In humans, DHS believes that effects from barium on blood pressure should not occur below 2 parts per million (ppm) in drinking water. DHS has set the drinking water standard for barium at 1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to barium."

(d) Beryllium: "The California Department of Health Services (DHS) sets drinking water standards and has determined that beryllium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in soils, ground water and surface waters and is often used in electrical equipment and electrical components. It generally gets into water from runoff from mining operations, discharge from processing plants and improper water disposal. Beryllium compounds have been associated with damage to the bones and lungs and induction of cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. There is limited evidence to suggest that beryllium may pose a cancer risk via drinking water exposure. Therefore, DHS based the health assessment on noncancer effects with an extra uncertainty factor to account for possible carcinogenicity. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for beryllium at 0.004 part per million (ppm) to protect against the risk of these adverse health effects. Drinking

water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to beryllium."

(e) Cadmium: "The California Department of Health Services (DHS) sets drinking water standards and has determined that cadmium is a health concern at certain levels of exposure. Food and the smoking of tobacco are common sources of general exposure. This inorganic metal is a contaminant in the metals used to galvanize pipe. It generally gets into water by corrosion of galvanized pipes or by improper waste disposal. This chemical has been shown to damage the kidney in animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the kidney. DHS has set the drinking water standard for cadmium at 0.005 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to cadmium."

(f) Chromium: "The California Department of Health Services (DHS) sets drinking water standards and has determined that chromium is a health concern at certain levels of exposure. This inorganic metal occurs naturally in the ground and is often used in the electroplating of metals. It generally gets into water from runoff from old mining operations and improper waste disposal from plating operations. This chemical has been shown to damage the kidney, nervous system, and the circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels. Some humans who were exposed to high levels of this chemical suffered liver and kidney damage, dermatitis and respiratory problems. DHS has set the drinking water standard for chromium at 0.05 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to chromium."

(g) Copper: "The California Department of Health Services (DHS) sets drinking water standards and has determined that copper is a health concern at certain exposure levels. Copper, a reddish-brown metal, is often used to plumb residential and commercial structures that are connected to water distribution systems. Copper contaminating drinking water as a corrosion by-product occurs as the result of the corrosion of copper pipes that remain in contact with water for a prolonged period of time. Copper is an essential nutrient, but at high doses it has been shown to cause stomach and intestinal distress, liver and kidney damage, and anemia. Persons with Wilson's disease may be at a higher risk of health effects due to copper than the general public. DHS' primary drinking water regulation requires all public water systems to install optimal corrosion control to minimize copper contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have copper concentrations below 1.3 parts per million (ppm) in more than 90 percent of tap water samples (the "action level") are not required to install or improve their treatment. Any water system that exceeds the action level shall also monitor their source water to determine whether treatment to remove copper in source water is needed."

(h) Cyanide: "The California Department of Health Services (DHS) sets drinking water standards and has determined that cyanide is a health concern at certain levels of exposure. This inorganic chemical is used in electroplating, steel processing plastics, synthetic fabrics and fertilizer products. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the spleen, brain and liver of humans fatally poisoned with cyanide. DHS has set the drinking water standard for cyanide at 0.15 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to cyanide."

(i) Lead: "The California Department of Health Services (DHS) sets drinking water standards and has determined that lead is a health concern at certain exposure levels. Materials that contain lead have frequently been used in the construction of water supply distribution systems, and plumbing systems in private homes and other buildings. The most commonly found materials include service lines, pipes, brass and bronze fixtures, and solders and fluxes. Lead in these materials can contaminate drinking water as a result of the corrosion that takes place when water comes into contact with those materials. Lead can cause a variety of adverse health effects in humans. At relatively low levels of exposure, these effects may include interference with red blood cell chemistry, delays in normal physical and mental development in babies and young children, slight deficits in the attention span, hearing, and learning abilities of children, and slight increases in the blood pressure of some adults. DHS' primary drinking water regulation requires all public water systems to optimize corrosion control to minimize lead contamination resulting from the corrosion of plumbing materials. Public water systems serving 50,000 people or fewer that have lead concentrations below 15 parts per billion (ppb) in more than 90 percent of tap water samples (the "action level") have optimized their corrosion control treatment. Any water system that exceeds the action level shall also monitor their source water to determine whether treatment to remove lead in source water is needed. Any water system that continues to exceed the action level after installation of corrosion control and/or source water treatment shall eventually replace all lead service lines contributing in excess of 15 ppb of lead to drinking water. Any water system that exceeds the action level shall also undertake a public education program to inform consumers of ways they can reduce their exposure to potentially high levels of lead in drinking water."

(j) Mercury: "The California Department of Health Services (DHS) sets drinking water standards and has determined that mercury is a health concern at certain levels of exposure. This inorganic metal is used in electrical equipment and some water pumps. It usually gets into water as a result of improper waste disposal. This chemical has been shown to damage the kidney of laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. DHS has set the drinking water standard for mercury at 0.002 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to mercury."

(k) Nickel: "The California Department of Health Services (DHS) sets drinking water standards and has determined that nickel poses a health concern at certain levels of exposure. This inorganic metal occurs naturally in soils, ground water and surface waters and is often used in electroplating, stainless steel and alloy products. It generally gets into water from mining and refining operations. This chemical has been shown to damage the heart and liver in laboratory animals when the animals are exposed to high levels over their lifetimes. DHS has set the drinking water standard to 0.1 part per million (ppm) for nickel to protect against the risk of these adverse effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to nickel."

(l) Nitrate: "The California Department of Health Services (DHS) sets drinking water standards and has determined that nitrate poses an acute health concern at certain levels of exposure. Nitrate is used in fertilizer and is found in sewage and wastes from human and/or farm animals and generally gets into drinking water from those activities. Excessive levels of nitrate in drinking water have caused serious illness and sometimes death in infants under six months of age. The serious illness in infants is caused because nitrate is converted to nitrite in the body. Nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly in infants. In most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide infants with an alternate source of drinking water. Local and State health authorities are the best sources for information concerning alternate sources of drinking water for infants. DHS has set the drinking water standard at 10 parts per million (ppm) nitrate as nitrogen (equivalent to the 45 parts per million nitrate as nitrate drinking water standard) to protect against the risk of these adverse effects. DHS has also set a drinking water standard for nitrite at 1 ppm. To allow for the fact that the toxicity of nitrate and nitrite are additive, DHS has also established a standard for the sum of nitrate and nitrite at 10 ppm as nitrogen. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to nitrate."

(m)Nitrite: "The California Department of Health Services (DHS) sets drinking water standards and has determined that nitrite poses an acute health concern at certain levels of exposure. This inorganic chemical is used in fertilizers and is found in sewage and wastes from humans and/or farm animals and generally gets into drinking water as a result of those activities. While excessive levels of nitrite in drinking water have not been observed, other sources of nitrite have caused serious illness and sometimes death in infants under six months of age. The serious illness in infants is caused because nitrite interferes with the oxygen carrying capacity of the child's blood. This is an acute disease in that symptoms can develop rapidly. However, in most cases, health deteriorates over a period of days. Symptoms include shortness of breath and blueness of the skin. Clearly, expert medical advice should be sought immediately if these symptoms occur. The purpose of this notice is to encourage parents and other responsible parties to provide

infants with an alternate source of drinking water. Local and State health authorities are the best sources for information concerning alternate sources of drinking water for infants. DHS has set the drinking water standard at 1 part per million (ppm) as nitrogen for nitrite to protect against the risk of these adverse effects. DHS has also set a drinking water standard for nitrate (converted to nitrite in humans) at 10 ppm and for the sum of nitrate and nitrite at 10 ppm. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to nitrite."

(n) Selenium: "The California Department of Health Services (DHS) sets drinking water standards and has determined that selenium is a health concern at certain high levels of exposure. Selenium is also an essential nutrient at low levels of exposure. This inorganic chemical is found naturally in food and soils and is used in electronics, photocopy operations, the manufacture of glass, chemicals, drugs, and as a fungicide and a feed additive. In humans, exposure to high levels of selenium over a long period of time has resulted in a number of adverse health effects, including a loss of feeling and control in the arms and legs. DHS has set the drinking water standard for selenium at 0.05 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to selenium."

(o) Thallium: "The California Department of Health Services (DHS) sets drinking water standards and has determined that thallium is a health concern at certain high levels of exposure. This inorganic metal is found naturally in soils and is used in electronics, pharmaceuticals, and the manufacture of glass and alloys. This chemical has been shown to damage the kidney, liver, brain and intestines of laboratory animals when the animals are exposed at high levels over their lifetimes. DHS has set the drinking water standard for thallium at 0.002 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to thallium."

§64468.2. Health effects language - volatile organic chemicals

Pursuant to Section 64467, the explanation of potential adverse health effects for volatile organic chemicals shall include the following mandatory language for the designated contaminants:

(a) Benzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that benzene is a health concern at certain levels of exposure. This chemical is used as a solvent and degreaser of metals. It is also a major component of gasoline. Drinking water contamination generally results from leaking underground gasoline and petroleum tanks or improper waste disposal. This chemical has been associated with significantly increased risks of leukemia among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has also been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels

over long periods of time. DHS has set the enforceable drinking water standard for benzene at 0.001 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(b) Carbon tetrachloride: "The California Department of Health Services (DHS) sets drinking water standards and has determined that carbon tetrachloride is a health concern at certain levels of exposure. This chemical was once a popular household cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for carbon tetrachloride at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(c) 1,2-Dichlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that ortho-dichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent in the production of pesticides and dyes. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and the blood cells of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, nervous system, and circulatory system. DHS has set the drinking water standard for ortho-dichlorobenzene at 0.6 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to ortho-dichlorobenzene."

(d) para-Dichlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that para-dichlorobenzene is a health concern at certain levels of exposure. This chemical is a component of deodorizers, moth balls, and pesticides. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed to high levels of their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for para-dichlorobenzene at 0.005 part per million (ppm) to reduce the risk of these adverse effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(e) 1,2-Dichloroethane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,2-dichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaning fluid for fats, oils, waxes, and resins. It generally gets into drinking water from improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for 1,2-dichloroethane at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(f) 1,1-Dichloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,1-dichloroethylene is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been shown to cause liver and kidney damage in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals which cause adverse effects in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for 1,1-dichloroethylene at 0.006 part per million (ppm) to reduce the risk of these adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe."

(g) cis-1,2-Dichloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that cis-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. DHS has set the drinking water standard for cis-1,2-dichloroethylene at 0.006 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to cis-1,2-dichloroethylene."

(h) trans-1,2-Dichloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that trans-1,2-dichloroethylene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and intermediate in chemical production. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and

the circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. DHS has set the drinking water standard for trans-1,2-dichloroethylene at 0.01 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to trans-1,2-dichloroethylene."

(i) Dichloromethane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that dichloromethane (methylene chloride) is a health concern at certain levels of exposure. This organic chemical is a widely used solvent. It is used in the manufacture of paint remover, as a metal degreaser and as an aerosol propellant. It generally gets into drinking water after improper discharge of waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for dichloromethane at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to dichloromethane."

(j) 1,2-Dichloropropane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,2-dichloropropane is a health concern at certain levels of exposure. This organic chemical is used as a solvent and pesticide. When soil and climatic conditions are favorable, 1,2-dichloropropane may get into drinking water by runoff into surface water or by leaching into ground water. It may also get into drinking water through improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for 1,2-dichloropropane at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to 1,2-dichloropropane."

(k) Ethylbenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that ethylbenzene is a health concern at certain levels of exposure. This organic chemical is a major component of gasoline. It generally gets into water by improper waste disposal or leaking gasoline tanks. This chemical has been shown to damage the kidney, liver, and nervous system of laboratory animals such as rats exposed to high levels during their lifetimes. DHS has set the drinking water standard for ethylbenzene at 0.3 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is

associated with little to none of this risk and is considered safe with respect to ethylbenzene."

(l) Methyl-*tert*-butyl ether: "The California Department of Health Services (DHS) sets drinking water standards and has determined that Methyl-*tert*-butyl ether (MTBE) is a health concern at certain levels of exposure. This organic chemical is used in gasoline and in chemical laboratories. It generally gets into water from leaking underground gasoline storage tanks and pipelines. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for MTBE at 0.013 parts per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to MTBE."

(m) Monochlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that monochlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a solvent. It generally gets into water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. DHS has set the drinking water standard for monochlorobenzene at 0.07 parts per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to monochlorobenzene."

(n) Styrene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that styrene is a health concern at certain levels of exposure. This organic chemical is commonly used to make plastics and is sometimes a component of resins used for drinking water treatment. Styrene may get into drinking water from improper waste disposal. This chemical has been shown to damage the liver and nervous system in laboratory animals when exposed at high levels during their lifetimes. DHS has set the drinking water standard for styrene at 0.1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to styrene."

(o) Tetrachloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that tetrachloroethylene is a health concern at certain levels of exposure. This organic chemical has been a popular solvent, particularly for dry cleaning. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for

tetrachloroethylene at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to tetrachloroethylene."

(p) Toluene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that toluene is a health concern at certain levels of exposure. This organic chemical is used as a solvent and in the manufacture of gasoline for airplanes. It generally gets into water by improper waste disposal or leaking underground storage tanks. This chemical has been shown to damage the kidney, nervous system, and circulatory system of laboratory animals such as rats and mice exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the liver, kidney and nervous system. DHS has set the drinking water standard for toluene at 0.15 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to toluene."

(q) 1,2,4-Trichlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,2,4-trichlorobenzene is a health concern at certain levels of exposure. This organic chemical is used as a dye carrier and as a precursor in herbicide manufacture. It generally gets into drinking water by discharges from industrial activities. This chemical has been shown to cause damage to several organs, including the adrenal glands. DHS has set the drinking water standard for 1,2,4-trichlorobenzene 0.005 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to 1,2,4-trichlorobenzene."

(r) 1,1,1-Trichloroethane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,1,1-trichloroethane is a health concern at certain levels of exposure. This chemical is used as a cleaner and degreaser of metals. It generally gets into drinking water by improper waste disposal. This chemical has been shown to damage the liver, nervous system, and circulatory system of laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the liver, nervous system, and circulatory system. Chemicals which cause adverse effects among exposed industrial workers and in laboratory animals also may cause adverse health effects in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for 1,1,1-trichloroethane at 0.2 part per million (ppm) to protect against the risk of these adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to 1,1,1-trichloroethane."

(s) 1,1,2-Trichloroethane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 1,1,2-trichloroethane is a health concern at certain levels of exposure. This organic chemical is an intermediate in the production of 1,1-dichloroethylene. It generally gets into water by industrial discharges of wastes. This chemical has been shown to damage the kidney and liver of laboratory animals such as rats exposed to high levels during their lifetimes. DHS has set the drinking water standard for 1,1,2-trichloroethane at 0.005 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to 1,1,2-trichloroethane."

(t) Trichloroethylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that trichloroethylene is a health concern at certain levels of exposure. This chemical is a common metal cleaning and dry cleaning fluid. It generally gets into drinking water by improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set forth the enforceable drinking water standard for trichloroethylene at 0.005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to trichloroethane."

(u) Vinyl chloride: "The California Department of Health Services (DHS) sets drinking water standards and has determined that vinyl chloride is a health concern at certain levels of exposure. This chemical is used in industry and is found in drinking water as a result of the breakdown of related solvents. The solvents are used as cleaners and degreasers of metals and generally get into drinking water by improper waste disposal. This chemical has been associated with significantly increased risks of cancer among certain industrial workers who were exposed to relatively large amounts of this chemical during their working careers. This chemical has been shown to cause cancer in laboratory animals when the animals are exposed at high levels over their lifetimes. Chemicals that cause increased risk of cancer among exposed industrial workers and in laboratory animals also may increase the risk of cancer in humans who are exposed at lower levels over long periods of time. DHS has set the enforceable drinking water standard for vinyl chloride at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in humans and laboratory animals. Drinking water which meets this standard is associated with little to none of this risk and should be considered safe with respect to vinyl chloride."

(v) Xylene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that xylene is a health concern at certain levels of exposure. This organic chemical is used in the manufacture of gasoline for airplanes and as a solvent for pesticides, and as a cleaner and degreaser of metals. It usually gets into

water by improper waste disposal. This chemical has been shown to damage the liver, kidney and nervous system of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. DHS has set the drinking water standard for xylene at 1.750 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to xylene."

§64468.3. Health Effects Language - Synthetic Organic Chemicals.
Pursuant to Section 64467, the explanation of potential adverse health effects for synthetic organic chemicals shall include the following mandatory language for the designated contaminants:

(a) Alachlor: "The California Department of Health Services (DHS) sets drinking water standards and has determined that alachlor is a health concern at certain levels of exposure. This organic chemical is a widely used pesticide. When soil and climatic conditions are favorable, alachlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for alachlor at 0.002 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to alachlor."

(b) Atrazine: "The California Department of Health Services (DHS) sets drinking water standards and has determined that altrazine is a health concern at certain levels of exposure. This organic chemical is a herbicide. When soil and climatic conditions are favorable, atrazine may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to affect offspring of rats and the heart of dogs. DHS has set the drinking water standard for atrazine at 0.001 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to atrazine."

(c) Benzo[a]pyrene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that benzo[a]pyrene is a health concern at certain levels of exposure. Cigarette smoke and charbroiled meats are common source of general exposure. The major source of benzo[a]pyrene in drinking water is the leaching from coal tar lining and sealants in water storage tanks. This chemical has been shown to cause cancer in animals such as rats and mice when the animals are exposed at high levels. DHS has set the drinking water standard for benzo[a]pyrene at 0.0002 part per million (ppm) to protect against the risk of cancer. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to benzo[a]pyrene."

(d) Carbofuran: "The California Department of Health Services (DHS) sets drinking water standards and has determined that carbofuran is a health concern at certain levels of exposure. This organic chemical is a pesticide. When soil and climatic conditions are favorable, carbofuran may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the nervous and reproductive systems of laboratory animals such as rats and mice exposed at high levels over their lifetimes. Some humans who were exposed to relatively large amounts of this chemical during their working careers also suffered damage to the nervous system. Effects on the nervous system are generally rapidly reversible. DHS has set the drinking water standard for carbofuran at 0.018 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to carbofuran."

(e) Chlordane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that chlordane is a health concern at certain levels of exposure. This organic chemical is a pesticide used to control termites. Chlordane is not very mobile in soils. It usually gets into drinking water after application near water supply intakes or wells. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for chlordane at 0.0001 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to chlordane."

(f) 2,4-D: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 2,4-D is a health concern at certain levels of exposure. This organic chemical is used as a herbicide and to control algae in reservoirs. When soil and climatic conditions are favorable, 2,4-D may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system. DHS has set the drinking water standard for 2,4-D at 0.07 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to 2,4-D."

(g) Dalapon: "The California Department of Health Services (DHS) sets drinking water standards and has determined that dalapon is a health concern at certain levels of exposure. This organic chemical is a widely used herbicide. It may get into drinking water after application to control grasses in crops, drainage ditches and along railroads. This chemical has been shown to cause damage to the kidney and liver in laboratory animals when the animals are exposed to high levels over their lifetimes. DHS has set the

drinking water standard for dalapon at 0.2 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to dalapon."

(h) Dibromochloropropane (DBCP): "The California Department of Health Services (DHS) sets drinking water standards and has determined that DBCP is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, dibromochloropropane may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for DBCP at 0.0002 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to DBCP."

(i) Di(2-ethylhexyl)adipate: "The California Department of Health Services (DHS) sets drinking water standards and has determined that di(2-ethylhexyl)adipate is a health concern at certain levels of exposure. Di(2-ethylhexyl)adipate is a widely used plasticizer in a variety of products, including synthetic rubber, food packaging materials and cosmetics. It may get into drinking water after improper waste disposal. This chemical has been shown to damage liver and testes in laboratory animals such as rats and mice exposed to high levels. DHS has set the drinking water standard for di(2-ethylhexyl)adipate at 0.4 part per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the DHS standards is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)adipate."

(j) Di(2-ethylhexyl)phthalate: "The California Department of Health Services (DHS) sets drinking water standards and has determined that di(2-ethylhexyl)phthalate is a health concern at certain levels of exposure. Di(2-ethylhexyl)phthalate is a widely used plasticizer, which is primarily used in the production of polyvinyl chloride (PVC) resins. It may get into drinking water after improper waste disposal. This chemical has been shown to cause cancer in laboratory animals such as rats and mice exposed to high levels over their lifetimes. DHS has set the drinking water standard for di(2-ethylhexyl)phthalate at 0.004 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to di(2-ethylhexyl)phthalate."

(k) Dinoseb: "The California Department of Health Services (DHS) sets drinking water standards and has determined that dinoseb is a health concern at certain levels of exposure. Dinoseb is a widely used pesticide and generally gets into drinking water after application on orchards, vineyards and other crops. This chemical has been shown to

damage the thyroid and reproductive organs in laboratory animals such as rats exposed to high levels. DHS has set the drinking water standard for dinoseb at 0.007 part per million (ppm) to protect against the risk of adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to dinoseb."

(l) Diquat: "The California Department of Health Services (DHS) sets drinking water standards and has determined that diquat is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to damage the liver, kidney and gastrointestinal tract and causes cataract formation in laboratory animals such as dogs and rats exposed at high levels over their lifetimes. DHS has set the drinking water standard for diquat at 0.02 part per million (ppm) to protect against the risk of these adverse effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to diquat."

(m) Endothall: "The California Department of Health Services (DHS) sets drinking water standards and has determined that endothall is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control terrestrial and aquatic weeds. It may get into water by runoff into surface water. This chemical has been shown to damage the liver, kidney, gastrointestinal tract and reproductive system of laboratory animals such as rats and mice exposed at high levels over their lifetimes. DHS has set the drinking water standard for endothall at 0.1 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to endothall."

(n) Endrin: "The California Department of Health Services (DHS) sets drinking water standards and has determined that endrin is a health concern at certain levels of exposure. This organic chemical is a pesticide no longer registered for use in the United States. However, this chemical is persistent in treated soils and accumulates in sediments and aquatic and terrestrial biota. This chemical has been shown to cause damage to the liver, kidney and heart in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. DHS has set the drinking water standard for endrin at 0.002 part per million (ppm) to protect against the risk of these adverse health effects which have been observed in laboratory animals. Drinking water that meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to endrin."

(o) Ethylene dibromide (EDB): "The California Department of Health Services (DHS) sets drinking water standards and has determined that EDB is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, EDB may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause

cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for EDB at 0.00005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to EDB."

(p) Glyphosate: "The California Department of Health Services (DHS) sets drinking water standards and has determined that glyphosate is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control grasses and weeds. It may get into drinking water by runoff into surface water. This chemical has been shown to cause damage to the liver and kidneys in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. DHS has set the drinking water standard for glyphosate at 0.7 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to glyphosate."

(q) Heptachlor: "The California Department of Health Services (DHS) sets drinking water standards and has determined that heptachlor is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for heptachlor at 0.00001 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor."

(r) Heptachlor epoxide: "The California Department of Health Services (DHS) sets drinking water standards and has determined that heptachlor expoxide is a health concern at certain levels of exposure. This organic chemical was once a popular pesticide. When soil and climatic conditions are favorable, heptachlor expoxide may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for heptachlor expoxide at 0.00001 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to heptachlor epoxide."

(s) Hexachlorobenzene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that hexachlorobenzene is a health concern at certain levels of exposure. This organic chemical is produced as an impurity in the manufacture of certain solvents and pesticides. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed to high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for hexachlorobenzene at 0.001 part per million (ppm) to protect against the risk of cancer and other adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to hexachlorobenzene."

(t) Hexachlorocyclopentadiene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that hexachlorocyclopentadiene is a health concern at certain levels of exposure. This organic chemical is used as an intermediate in the manufacture of pesticides and flame retardants. It may get into water by discharge from production facilities. This chemical has been shown to damage the kidney and the stomach of laboratory animals when exposed to high levels over their lifetimes. DHS has set the drinking water standard for hexachlorocyclopentadiene at 0.05 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to hexachlorocyclopentadiene."

(u) Lindane: "The California Department of Health Services (DHS) sets drinking water standards and has determined that lindane is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, lindane may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver, kidney, nervous system, and immune system of laboratory animals such as rats, mice and dogs exposed at high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the nervous system and circulatory system. DHS has established the drinking water standard for lindane at 0.0002 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to lindane."

(v) Methoxychlor: "The California Department of Health Services (DHS) sets drinking water standards and has determined that methoxychlor is a health concern at certain levels of exposure. This organic chemical is used as a pesticide. When soil and climatic conditions are favorable, methoxychlor may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver, kidney, nervous system, and reproductive system of laboratory animals such as rats exposed at high levels during their lifetimes. It has also been shown to produce growth retardation in rats. DHS has set the drinking water standard for methoxychlor at 0.03 part per million (ppm) to protect against the risk of these adverse

health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to methoxychlor."

(w) Oxamyl: "The California Department of Health Services (DHS) sets drinking water standards and has determined that oxamyl is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for the control of insects and other pests. It may get into drinking water by runoff into surface water or leaching into ground water. This chemical has been shown to damage the kidneys of laboratory animals such as rats when exposed at high levels over their lifetimes. DHS has set the drinking water standard for oxamyl at 0.05 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to oxamyl."

(x) Pentachlorophenol: "The California Department of Health Services (DHS) sets drinking water standards and has determined that pentachlorophenol is a health concern at certain levels of exposure. This organic chemical is used as a wood preservative, herbicide, disinfectant, and defoliant. It generally gets into drinking water by runoff into surface water or leaching into ground water. This chemical has been shown to produce adverse reproductive effects and to damage the liver and kidneys of laboratory animals such as rats exposed to high levels during their lifetimes. Some humans who were exposed to relatively large amounts of this chemical also suffered damage to the liver and kidneys. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for pentachlorophenol at 0.001 part per million (ppm) to protect against the risk of cancer or other adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to pentachlorophenol."

(y) Picloram: "The California Department of Health Services (DHS) sets drinking water standards and has determined that picloram is a health concern at certain levels of exposure. This organic chemical is used as a pesticide for broadleaf weed control. It may get into drinking water by runoff into surface water or leaching into ground water as a result of pesticide application and improper waste disposal. This chemical has been shown to cause damage to the kidneys and liver in laboratory animals such as rats when the animals are exposed at high levels over their lifetimes. DHS has set the drinking water standard for picloram at 0.5 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to picloram."

(z) Polychlorinated biphenyls (PCBs): "The California Department of Health Services (DHS) sets drinking water standards and has determined that polychlorinated biphenyls (PCBs) are a health concern at certain levels of exposure. These organic chemicals were once widely used in electrical transformers and other industrial equipment. They generally get into drinking water by improper waste disposal or leaking

electrical industrial equipment. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for PCBs at 0.0005 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to PCBs."

(aa) Simazine: "The California Department of Health Services (DHS) sets drinking water standards and has determined that simazine is a health concern at certain levels of exposure. This organic chemical is a herbicide used to control annual grasses and broadleaf weeds. It may leach into ground water or run off into surface water after application. This chemical may cause cancer in laboratory animals such as rats and mice exposed at high levels during their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for simazine at 0.004 part per million (ppm) to reduce the risk of cancer or other adverse health effects. Drinking water which meets the DHS standard is associated with little to none of this risk and should be considered safe with respect to simazine."

(bb) Toxaphene: "The California Department of Health Services (DHS) sets drinking water standards and has determined that toxaphene is a health concern at certain levels of exposure. This organic chemical was once a pesticide widely used on cotton, corn, soybeans, pineapples and other crops. When soil and climatic conditions are favorable, toxaphene may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for toxaphene at 0.003 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water that meets this standard is associated with little to none of this risk and is considered safe with respect to toxaphene."

(cc) 2,3,7,8-TCDD (Dioxin): "The California Department of Health Services (DHS) sets drinking water standards and has determined that dioxin is a health concern at certain levels of exposure. This organic chemical is an impurity in the production of some pesticides. It may get into drinking water by industrial discharge of wastes. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for dioxin at 0.00000003 part per million (ppm) to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. Drinking water which meets this standard is

associated with little to none of this risk and should be considered safe with respect to dioxin."

(dd) 2,4,5-TP: "The California Department of Health Services (DHS) sets drinking water standards and has determined that 2,4,5-TP is a health concern at certain levels of exposure. This organic chemical is used as a herbicide. When soil and climatic conditions are favorable, 2,4,5-TP may get into drinking water by runoff into surface water or by leaching into ground water. This chemical has been shown to damage the liver and kidney of laboratory animals such as rats and dogs exposed to high levels during their lifetimes. Some industrial workers who were exposed to relatively large amounts of this chemical during working careers also suffered damage to the nervous system. DHS has set the drinking water standard for 2,4,5-TP at 0.05 part per million (ppm) to protect against the risk of these adverse health effects. Drinking water that meets the DHS standard is associated with little to none of this risk and is considered safe with respect to 2,4,5-TP."

§64468.4. Health Effects Language - Treatment Technique Chemicals.
Pursuant to Section 64467, the explanation of potential adverse health effects for treatment technique chemicals shall include the following mandatory language for the designated contaminants:

(a) Acrylamide: "The California Department of Health Services (DHS) sets drinking water standards and has determined that acrylamide is a health concern at certain levels of exposure. Polymers made from acrylamide are sometimes used to treat water supplies to remove particulate contaminants. Acrylamide has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. Sufficiently large doses of acrylamide are known to cause neurological injury. DHS has set the drinking water standard for acrylamide using a treatment technique to reduce the risk of cancer or other adverse health effects which have been observed in laboratory animals. This treatment technique limits the amount of acrylamide in the polymer and the amount of the polymer which may be added to drinking water to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to acrylamide."

(b) Epichlorohydrin: "The California Department of Health Services (DHS) sets drinking water standards and has determined that epichlorohydrin is a health concern at certain levels of exposure. Polymers made from epichlorohydrin are sometimes used in the treatment of water supplies as a flocculent to remove particulates. Epichlorohydrin generally gets into drinking water by improper use of these polymers. This chemical has been shown to cause cancer in laboratory animals such as rats and mice when the animals are exposed at high levels over their lifetimes. Chemicals that cause cancer in laboratory animals also may increase the risk of cancer in humans who are exposed over long periods of time. DHS has set the drinking water standard for epichlorohydrin using a treatment technique to reduce the risk of cancer or other adverse health effects which

have been observed in laboratory animals. This treatment technique limits the amount of epichlorohydrin in the polymer and the amount of the polymer which may be added to drinking water as a flocculent to remove particulates. Drinking water systems which comply with this treatment technique have little to no risk and are considered safe with respect to epichlorohydrin."

§64468.5. Health Effects Language – Disinfectants and Disinfection Byproducts.
Pursuant to Section 64467, the explanation of potential adverse health effects for disinfectants and disinfection byproducts shall include the following mandatory language for the designated contaminants:

(a) Chlorine: "The California Department of Health Services (DHS) sets drinking water standards and has determined that chlorine is a health concern at certain levels of exposure. Chlorine is added to drinking water as a disinfectant to kill bacteria and other disease-causing microorganisms and is also added to provide continuous disinfection throughout the distribution system. Disinfection is required for surface water systems. However, at high doses for extended periods of time, chlorine has been shown to affect blood and the liver in laboratory animals. DHS has set a drinking water standard for chlorine to protect against the risk of these adverse effects. Drinking water which meets this DHS standard is associated with little to none of this risk and should be considered safe with respect to chlorine."

(b) Chloramines: "The California Department of Health Services (DHS) sets drinking water standards and has determined that chloramines are a health concern at certain levels of exposure. Chloramines are added to drinking water as a disinfectant to kill bacteria and other disease-causing microorganisms and are also added to provide continuous disinfection throughout the distribution system. Disinfection is required for surface water systems. However, at high doses for extended periods of time, chloramines have been shown to affect blood and the liver in laboratory animals. DHS has set a drinking water standard for chloramines to protect against the risk of these adverse effects. Drinking water which meets this DHS standard is associated with little to none of this risk and should be considered safe with respect to chloramines."

(c) Chlorine Dioxide: "The California Department of Health Services (DHS) sets drinking water standards and has determined that chlorine dioxide is a health concern at certain levels of exposure. Chlorine dioxide is used in water treatment to kill bacteria and other disease-causing microorganisms and can be used to control tastes and odors. Disinfection is required for surface water systems. However, at high doses, chlorine dioxide-treated drinking water has been shown to affect blood in laboratory animals. Also, high levels of chlorine dioxide given to laboratory animals in drinking water have been shown to cause neurological effects on the developing nervous system. These neurodevelopmental effects may occur as a result of a short-term excessive chlorine dioxide exposure. To protect against such potentially harmful exposures, DHS requires chlorine dioxide monitoring at the treatment plant, where disinfection occurs, and at

representative points in the distribution system serving water users. DHS has set a drinking water standard for chlorine dioxide to protect against the risk of these adverse effects." **[In addition to this language, systems with a violation at the treatment plant, but not in the distribution system, shall include the language in paragraph (1); systems with a violation in the distribution system shall include the language in paragraph (2) and provide notification pursuant to section 64464.1(a) – Method 1.]**

(1) "The chlorine dioxide violations reported today are the result of exceedances at the treatment facility only, and do not include violations within the distribution system serving users of this water supply. Continued compliance with chlorine dioxide levels within the distribution system minimizes the potential risk of these violations to present consumers."

(2) "The chlorine dioxide violations reported today include exceedances of the DHS standard within the distribution system serving water users. Violations of the chlorine dioxide standard within the distribution system may harm human health based on short-term exposures. Certain groups, including pregnant women, infants, and young children, may be especially susceptible to adverse effects of excessive exposure to chlorine dioxide-treated water. The purpose of this notice is to advise that such persons should consider reducing their risk of adverse effects from these chlorine dioxide violations by seeking alternate sources of water for human consumption until such exceedances are rectified. The Local Health Department and DHS are the best sources for information concerning alternate sources of drinking water."

(d) Disinfection Byproducts and Treatment Technique for DBPs: "The California Department of Health Services (DHS) sets drinking water standards and requires the disinfection of drinking water. However, when used in the treatment of drinking water, disinfectants react with naturally-occurring organic and inorganic matter present in water to form chemicals called disinfection byproducts (DBPs). DHS has determined that a number of DBPs are a health concern at certain levels of exposure. Certain DBPs, including some trihalomethanes (THMs) and some haloacetic acids (HAAs), have been shown to cause cancer in laboratory animals. Other DBPs have been shown to affect the liver and the nervous system, and cause reproductive or developmental effects in laboratory animals. Exposure to certain DBPs may produce similar effects in people. DHS has set standards to limit exposure to THMs, HAAs, and other DBPs."

(e) Bromate: "The California Department of Health Services (DHS) sets drinking water standards and has determined that bromate is a health concern at certain levels of exposure. Bromate is formed as a byproduct of ozone disinfection of drinking water. Ozone reacts with naturally occurring bromide in the water to form bromate. Bromate has been shown to produce cancer in rats. DHS has set a drinking water standard to limit exposure to bromate."

(f) Chlorite: "The California Department of Health Services (DHS) sets drinking water standards and has determined that chlorite is a health concern at certain levels of exposure. Chlorite is formed from the breakdown of chlorine dioxide, a drinking water disinfectant. Chlorite in drinking water has been shown to affect blood and the

developing nervous system. DHS has set a drinking water standard for chlorite to protect against these effects. Drinking water which meets this standard is associated with little to none of these risks and should be considered safe with respect to chlorite."

§64469. Notice Pertaining to Lead.

(a) The water supplier of each community water system or non-transient non-community water system shall give notice to persons served by the system that their drinking water may be affected by lead contamination even if the water source does not violate the established maximum contaminant level for lead. This notice shall be completed by June 30, 1990. If a notice meeting the requirements of this section was issued prior to the effective date of these regulations, the water supplier shall be considered to be in compliance with this requirement when a copy of the notice has been filed with the department.

(b) The notice shall be given to persons served by the system either by (1) three newspaper notices (one for each of three consecutive months); or (2) once by direct mail; or (3) once by hand delivery. An additional alternative method of notice for non-transient non-community water systems is by posting a notice continuously for a period of three months in a conspicuous place in the area served by the system.

(c) The notice shall provide an explanation of the potential sources of lead in the drinking water, potential adverse health effects, available methods of mitigating known or potential lead content in drinking water, any steps the water system is taking to mitigate lead content in drinking water, and the necessity for seeking alternative water supplies, if any. The notice shall be reviewed and approved by the department. The notice shall include the following language concerning potential health effects:

"The United States Environmental Protection Agency (EPA) sets drinking water standards and has determined that lead is a health concern at certain levels of exposure. There is currently a standard of 0.050 parts per million (ppm). Based on new health information, EPA is likely to lower this standard significantly."Part of the purpose of this notice is to inform you of the potential adverse health effects of lead. This is being done even though your water may not be in violation of the current standard."EPA and others are concerned about lead in drinking water. Too much lead in the human body can cause serious damage to the brain, kidneys, nervous system, and red blood cells. The greatest risk, even with short-term exposure, is to young children and pregnant women."Lead levels in your drinking water are likely to be highest (1) if your home or water system has lead pipes, or (2) if your home has copper pipes with lead solder, and the home is less than five years old, or you have soft or acidic water, or the water sits in the pipes for several hours."

The notice shall also include advice on how to determine if materials containing lead have been used in the users' plumbing system or in the distribution system and how to minimize exposure to water likely to contain high levels of lead. The notice shall be conspicuous and shall not contain unduly technical language, unduly small print, or

similar problems that frustrate the purpose of the notice. Each notice shall contain the telephone number of the owner, operator, or designee of the public water system as a source of additional information concerning the notice. Where appropriate, the notice shall be multilingual.

§64470. Notification Language for Total Coliform MCL Violations.

(a) The following language shall be used when Section 64426.1(b)(1) or (2) has been violated but not Sections 64426.1(b)(3) and (4):

"The California Department of Health Services (Department) sets drinking water standards and has determined that the presence of total coliforms is a possible health concern. Total coliforms are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water, however, generally is a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. The Department has set an enforceable drinking water standard for total coliforms to reduce the risk of these adverse health effects. Under this standard, no more than 5.0 percent of the samples collected during a month can contain these bacteria, except that systems collecting fewer than 40 samples/month that have one total coliform-positive sample per month are not violating the standard. Drinking water which meets this standard is usually not associated with a health risk from disease-causing bacteria and should be considered safe."

(b) The following language shall be used when there has been a violation of Section 64426.1(b)(3) or (4), with or without a violation of Section 64426.1(b)(1) or (2):

"The California Department of Health Services (Department) sets drinking water standards and has determined that the presence of fecal coliforms or *E. coli* is a serious health concern. Fecal coliforms and *E. coli* are generally not harmful themselves, but their presence in drinking water is serious because they usually are associated with sewage or animal wastes. The presence of these bacteria in drinking water is generally a result of a problem with water treatment or the pipes which distribute the water, and indicates that the water may be contaminated with organisms that can cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and associated headaches and fatigue. These symptoms, however, are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. The Department has set an enforceable drinking water standard for fecal coliforms and *E. coli* to reduce the risk of these adverse health effects. Under this standard all drinking water samples must be free of these bacteria. Drinking water which meets this standard is associated with little or none of this risk and should be considered safe. The Department recommends that consumers take the

following precautions: (to be inserted by the water supplier according to instructions from the Department)."

Article 20. Consumer Confidence Report

§64480. Applicability and Distribution.

(a) Except as provided in subsection (b), each community and nontransient-noncommunity (NTNC) water system shall prepare and deliver the first Consumer Confidence Report by July 1, 2001, and subsequent reports by July 1 annually thereafter. The first Consumer Confidence Report shall contain data collected during, or prior to, calendar year 2000, as prescribed by section 64481(d)(1). Each Consumer Confidence Report thereafter shall contain data collected during, or prior to, the previous calendar year.

(b) A new community or NTNC water system shall deliver its first Consumer Confidence Report by July 1 of the year after its first full calendar year in operation and subsequent reports by July 1 annually thereafter.

(c) A community or NTNC water system that sells water to another community or NTNC water system shall deliver the applicable information required in section 64481 to the purchasing system by no later than April 1 of each year or on a date mutually agreed upon by the seller and the purchaser, and specifically included in a contract between the parties.

§64481. Content of the Consumer Confidence Report.

(a) Each Consumer Confidence Report shall contain information on the source of the water delivered, including:

(1) The type of water delivered by the water system, e.g., surface water, ground water; and the commonly used name (if any) and location of the body (or bodies) of water.

(2) If a source water assessment has been completed, notification that the assessment is available, how to obtain it, the date it was completed or last updated, and a brief summary of the system's vulnerability to potential sources of contamination, using language provided by the Department if the Department conducted the assessment.

(b) For any of the following terms used in the Consumer Confidence Report, the water system shall provide the specified language below:

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

(2) Maximum Contaminant Level or 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."

(3) Maximum Contaminant Level Goal or MCLG: "The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency."

(4) Public Health Goal or PHG: "The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency."

(5) Primary Drinking Water Standard or PDWS: "MCLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements."

(6) Treatment technique: "A required process intended to reduce the level of a contaminant in drinking water."

(7) Variances and exemptions: "Department permission to exceed an MCL or not comply with a treatment technique under certain conditions."

(c) If any of the following are detected, information for each pursuant to subsection (d) shall be included in the Consumer Confidence Report:

(1) Contaminants subject to an MCL, regulatory action level, or treatment technique (regulated contaminants), as specified in sections 64426.1, 64431, 64439, 64441, 64443, 64444, 64448, 64449, 64653 and 64672.3;

(2) Contaminants specified in section 64450 for which monitoring is required (unregulated contaminants); and

(3) Disinfection by-products or microbial contaminants detected in the finished water for which monitoring is required by 40 CFR §§141.142 and 141.143 (Information Collection Rule, Federal Register 61, p 24354, May 14, 1996;), except as provided under subsection (e).

(4) Sodium and hardness.

(d) For contaminants identified in subsection (c), the water system shall include in the Consumer Confidence Report one table or several adjacent tables that have been developed pursuant to this subsection. Any additional monitoring results that a water system chooses to include in its Consumer Confidence Report shall be displayed separately.

(1) The data in the table(s) shall be derived from data collected to comply with U.S. Environmental Protection Agency (USEPA) and Department monitoring and analytical requirements during calendar year 2000 for the first Consumer Confidence Report and subsequent calendar years thereafter except that:

(A) Where a system is allowed to monitor for regulated contaminants less often than once a year, the table(s) shall include the date and results of the most recent sampling and the Consumer Confidence Report shall include a brief statement indicating that the data presented in the table(s) are from the most recent testing done in accordance with the regulations. No data older than 9 years need be included.

(B) Results of monitoring in compliance with 40 CFR §§141.142 and 141.143 (Information Collection Rule, Federal Register 61, p 24354, May 14, 1996), need only be included in the table(s) for 5 years from the date of the last sampling or until any of the detected contaminants becomes regulated and subject to routine monitoring

requirements, whichever comes first. Both the average and range sample results for the most recent year of sampling shall be included for any detected contaminant.

(2) For detected regulated contaminants (listed in subsection (c)(1)), the table(s) shall include:

(A) The MCL expressed as a number equal to or greater than 1.0;

(B) For a primary MCL, the public health goal (PHG) in the same units as the MCL; or if no PHG has been set for the contaminant, the table shall include the USEPA maximum contaminant level goal in the same units as the MCL.

(C) For a detected contaminant that does not have an MCL, the table(s) shall indicate whether there is a treatment technique or specify the regulatory action level applicable to that contaminant, and the Consumer Confidence Report shall include the appropriate language specified in subsection (b);

(D) For detected contaminants subject to an MCL, except turbidity and total coliforms, the sample result(s) collected at compliance monitoring sampling points shall be reported in the same units as the MCL as follows:

1. When compliance is determined by the results of a single sample, an initial sample averaged with one or two confirmation sample(s), or an average of four quarterly or six monthly samples, results shall be reported as follows:

A. For a single sampling point, or multiple sampling points for which data is being individually listed on the Consumer Confidence Report: The sample result; if more than one sample was collected, the average and range of the sample results.

B. For more than one sampling point, each of which has been sampled only once and for which data is being summarized together on the Consumer Confidence Report: The average and range of the sample results. If the waters from the sampling points are entering the distribution system at the same point, a flow-weighted average may be reported.

C. For multiple sampling points, one or more of which has been sampled more than once and for which data is being summarized together on the Consumer Confidence Report: The average of the individual sampling point averages and range of all the sample results. If the waters from the sampling points are entering the distribution system at the same point, a flow-weighted average may be reported.

2. When compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point: The highest running annual average of the sampling point and the range of sample results or, if sampling points are summarized together for the Consumer Confidence Report, the highest running annual average of any of the sampling points and the range of sample results from all the sampling points.

3. When compliance with the MCL is determined on a system-wide basis by calculating a running annual average of all sampling point averages: The highest running annual average and the range of sample results from all the sampling points.

4. When compliance with the MCL is determined on the basis of monitoring after treatment installed to remove a contaminant: The average level detected in the water entering the distribution system and the range of sample results.

5. If an MCL compliance determination was made in the year for which sample results are being reported and that determination was based on an average of results from both the previous and reporting years, then the compliance determination average shall be reported, but the range shall be based only on results from the year for which data is being reported.

(E) For turbidity:

1. When it is reported pursuant to the requirements of section 64652.5 (filtration avoidance): The highest value.

2. When it is reported pursuant to section 64653 (filtration): The highest single measurement based on compliance reporting and the lowest monthly percentage of samples meeting the turbidity limits specified in section 64653 for the filtration technology being used.

(F) For lead and copper: the 90th percentile value of the most recent round of sampling, the number of sites sampled, and the number of sampling sites exceeding the action level.

(G) For total coliform:

1. The highest monthly number of positive samples for systems collecting fewer than 40 samples per month; or

2. The highest monthly percentage of positive samples for systems collecting at least 40 samples per month.

(H) For fecal coliform or E. coli: the total number of positive samples during the year.

(I) The likely source(s) of detected contaminants for any detected contaminant with an MCL. If the water system lacks specific information on the likely source, the table(s) shall include one or more of the typical sources for that contaminant listed in appendices 64481-A or 64481-B that are most applicable to the system.

(3) The table(s) shall clearly identify any data indicating violations of MCLs or treatment techniques and the Consumer Confidence Report shall give information on each violation including the length of the violation, potential adverse health effects (primary MCLs only), and actions taken by the system to address the violation. To describe the potential health effects, the system shall use the relevant language pursuant to appendices 64481-C through 64481-G.

(4) For detected unregulated contaminants for which monitoring is required (except Cryptosporidium), the table(s) shall contain the average and range at which the contaminant was detected.

(e) If the system has performed any monitoring for Cryptosporidium, including monitoring performed to satisfy the requirements of 40 CFR §141.143 (Information Collection Rule, Federal Register 61, p 24354, May 14, 1996), that indicates that Cryptosporidium may be present in the source water or the finished water, the Consumer Confidence Report shall include a summary of the monitoring results and an explanation of their significance.

(f) If the system has performed any monitoring for radon that indicates that radon is present in the finished water, the Consumer Confidence Report shall include the monitoring results and an explanation of their significance.

(g) For the year covered by the report, the Consumer Confidence Report shall note any violations of (1) through (7) and give related information, including any potential adverse health effects, and the steps the system has taken to correct the violation.

(1) Monitoring and reporting of compliance data.

(2) Filtration and disinfection prescribed by sections 64652, 64652.5, 64653, or 64654. For systems that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes that constitutes a violation, the Consumer Confidence Report shall include the following language as part of the explanation of potential adverse health effects: "Inadequately treated water may contain organisms that can cause illness when consumed. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches."

(3) One or more actions prescribed by the lead and copper requirements in sections 64673 through 64679. To address potential adverse health effects, the Consumer Confidence Report shall include the applicable language pursuant to appendix 64481-E for lead, copper, or both.

(4) Treatment technique requirements for Acrylamide and Epichlorohydrin in section 64448; to address potential adverse health effects, the Consumer Confidence Report shall include the relevant language from appendix 64481-G.

(5) Recordkeeping of compliance data.

(6) Special monitoring requirements prescribed by sections 64450.1, and 64449(c)(2) and (i).

(7) Terms of a variance, an exemption, or an administrative or judicial order.

(h) If a system is operating under the terms of a variance or an exemption issued under section 116430 or 116425 of the Health and Safety Code, the Consumer Confidence Report shall contain:

(1) An explanation of the reasons for the variance or exemption;

(2) The date on which the variance or exemption was issued;

(1) A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the terms and schedules of the variance or exemption; and

(2) A notice of any opportunity for public input in the review, or renewal, of the variance or exemption.

(i) The Consumer Confidence Report shall contain the language in paragraphs (1) through (4).

(1) "The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and,

in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity."

(2) "Contaminants that may be present in source water include:

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

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

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

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

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

(3) "In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Department of Health Services (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that provide the same protection for public health."

(4) "Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791)."

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

(k) The Consumer Confidence Report shall include the telephone number of the owner, operator, or designee of the water system as a source of additional information concerning the report.

(l) All Consumer Confidence Reports shall contain information in Spanish regarding the importance of the report or contain a telephone number or address where Spanish-

speaking residents may contact the system to obtain a translated copy of the report or assistance in Spanish. For each non-English speaking group other than Spanish-speaking that exceeds 1,000 residents or 10% of the residents in a community, whichever is less, the Consumer Confidence Report shall contain information in the appropriate language(s) regarding the importance of the report or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

(m)The Consumer Confidence Report shall include information (e.g., time and place of regularly scheduled board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

Appendix 64481-A.
Typical Origins of Contaminants with Primary MCLs

Contaminant	*Major origins in drinking water*
Microbiological	
Total coliform bacteria	Naturally present in the environment
Fecal coliform and E. coli	Human and animal fecal waste
Turbidity	Soil runoff
Radioactive	
Gross Beta particle activity	Decay of natural and man-made deposits
Strontium-90	Decay of natural and man-made deposits
Tritium	Decay of natural and man-made deposits
Gross Alpha particle activity	Erosion of natural deposits
Combined radium 226/228	Erosion of natural deposits
Uranium	Erosion of natural deposits
Inorganic	
Aluminum	Erosion of natural deposits; residue from some surface water treatment processes
Antimony	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Asbestos	Internal corrosion of asbestos cement water mains; erosion of natural deposits
Barium	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Beryllium	Discharge from metal refineries, coal-burning factories,

	and electrical, aerospace, and defense industries
Cadmium	Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and metal refineries; runoff from waste batteries and paints
Chromium	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Copper	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Cyanide	Discharge from steel/metal, plastic and fertilizer factories
Fluoride	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Lead	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Mercury	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and cropland
Nickel	Erosion of natural deposits; discharge from metal factories
Nitrate	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrite	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Selenium	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
Thallium	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

Synthetic organic

2,4-D	Runoff from herbicide used on row crops, range land, lawns, and aquatic weeds
2,4,5-TP (Silvex)	Residue of banned herbicide
Acrylamide	Added to water during sewage/wastewater treatment
Alachlor	Runoff from herbicide used on row crops
Atrazine	Runoff from herbicide used on row crops and along railroad and highway right-of-ways
Bentazon	Runoff/leaching from herbicide used on beans, peppers, corn, peanuts, rice, and ornamental grasses
Benzo(a)pyrene [PAH]	Leaching from linings of water storage tanks and

	distribution mains
Carbofuran	Leaching of soil fumigant used on rice and alfalfa, and grape vineyards
Chlordane	Residue of banned insecticide
Dalapon	Runoff from herbicide used on right-of-ways, and crops and landscape maintenance
Dibromochloropropane (DBCP)	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit
Di(2-ethylhexyl) adipate	Discharge from chemical factories
Di(2-ethylhexyl) phthalate	Discharge from rubber and chemical factories; inert ingredient in pesticides
Dinoseb	Runoff from herbicide used on soybeans, vegetables, and fruits
Dioxin [2,3,7,8-TCDD]	Emissions from waste incineration and other combustion; discharge from chemical factories
Diquat	Runoff from herbicide use for terrestrial and aquatic weeds
Endothall	Runoff from herbicide use for terrestrial and aquatic weeds; defoliant
Endrin	Residue of banned insecticide and rodenticide
Epichlorohydrin	Discharge from industrial chemical factories; impurity of some water treatment chemicals
Ethylene dibromide (EDB)	Discharge from petroleum refineries; underground gas tank leaks; banned nematocide that may still be present in soils due to runoff and leaching from grain and fruit crops
Glyphosate	Runoff from herbicide use
Heptachlor	Residue of banned insecticide
Heptachlor epoxide	Breakdown of heptachlor
Hexachlorobenzene	Discharge from metal refineries and agricultural chemical factories; byproduct of chlorination reactions in wastewater
Hexachlorocyclo-pentadiene	Discharge from chemical factories
Lindane	Runoff/leaching from insecticide used on cattle, lumber, gardens
Methoxychlor	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Molinate [Ordram]	Runoff/leaching from herbicide used on rice
Oxamyl [Vydate]	Runoff/leaching from insecticide used on field crops, fruits and ornamentals, especially apples, potatoes, and tomatoes
Pentachlorophenol	Discharge from wood preserving factories, cotton and

	other insecticidal/herbicidal uses
Picloram	Herbicide runoff
Polychlorinated biphenyls [PCBs]	Runoff from landfills; discharge of waste chemicals
Simazine	Herbicide runoff
Thiobencarb	Runoff/leaching from herbicide used on rice
Toxaphene	Runoff/leaching from insecticide used on cotton and cattle

Volatile organic

Benzene	Discharge from plastics, dyes and nylon factories; leaching from gas storage tanks and landfills
Carbon tetrachloride	Discharge from chemical plants and other industrial activities
1,2-Dichlorobenzene	Discharge from industrial chemical factories
1,4-Dichlorobenzene	Discharge from industrial chemical factories
1,1-Dichloroethane	Extraction and degreasing solvent; used in manufacture of pharmaceuticals, stone, clay and glass products; fumigant
1,2-Dichloroethane	Discharge from industrial chemical factories
1,1-Dichloroethylene	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene	Discharge from industrial chemical factories; major biodegradation byproduct of TCE and PCE groundwater contamination
trans-1,2-Dichloroethylene	Discharge from industrial chemical factories; minor biodegradation byproduct of TCE and PCE groundwater contamination
Dichloromethane	Discharge from pharmaceutical and chemical factories; insecticide
1,2-Dichloropropane	Discharge from industrial chemical factories; primary component of some fumigants
1,3-Dichloropropene	Runoff/leaching from nematocide used on croplands
Ethylbenzene	Discharge from petroleum refineries; industrial chemical factories
Monochlorobenzene	Discharge from industrial and agricultural chemical factories and drycleaning facilities
Styrene	Discharge from rubber and plastic factories; leaching from landfills
1,1,2,2-Tetrachloroethane	Discharge from industrial and agricultural chemical factories; solvent used in production of TCE, pesticides, varnish and lacquers
Tetrachloroethylene (PCE)	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
1,2,4-Trichlorobenzene	Discharge from textile-finishing factories

1,1,1-Trichloroethane	Discharge from metal degreasing sites and other factories; manufacture of food wrappings
1,1,2-Trichloroethane	Discharge from industrial chemical factories
Trichloroethylene (TCE)	Discharge from metal degreasing sites and other factories
TTHMs [total trihalomethanes]	By-product of drinking water chlorination
Toluene	Discharge from petroleum and chemical factories; underground gas tank leaks
Trichlorofluoromethane	Discharge from industrial factories; degreasing solvent; propellant and refrigerant
1,1,2-Trichloro-1,2,2-Trifluoroethane	Discharge from metal degreasing sites and other factories; drycleaning solvent; refrigerant
Vinyl chloride	Leaching from PVC piping; discharge from plastics factories; biodegradation byproduct of TCE and PCE groundwater contamination
Xylenes	Discharge from petroleum and chemical factories; fuel solvent

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Appendix 64481-B.
Typical Origins of Contaminants with Secondary MCLs

Contaminant	*Major origins in drinking water*
Aluminum	Erosion of natural deposits; residual from some surface water treatment processes
Color	Naturally-occurring organic materials
Corrosivity	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors.
Foaming Agents (MBAS)	Municipal and industrial waste discharges
Iron	Leaching from natural deposits; industrial wastes
Manganese	Leaching from natural deposits
Methyl-tert-butyl ether (MTBE)	Leaking underground storage tanks; discharge from petroleum and chemical factories;
Odor--Threshold	Naturally-occurring organic materials
Silver	Industrial discharges
Thiobencarb	Runoff/leaching from rice herbicide
Turbidity	Soil runoff
Zinc	Runoff/leaching from natural deposits; industrial wastes
Total dissolved solids	Runoff/leaching from natural deposits
Specific conductance	Substances that form ions when in water; seawater influence
Chloride	Runoff/leaching from natural deposits; seawater influence

Appendix 64481-C.
Health Effects Language for the Consumer Confidence Report – Microbiological Contaminants

Contaminant	*Health Effects language*
Total Coliform	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.
Fecal coliform/E.Coli	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, and people with severely compromised immune systems.
Turbidity	Turbidity has no health effects. However, high levels of

	turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Appendix 64481-D.
Health Effects Language for the Consumer Confidence Report – Radioactive Contaminants

Contaminant	*Health Effects Language*
Gross Beta particle activity	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Strontium-90	Some people who drink water containing strontium-90 in excess of the MCL over many years may have an increased risk of getting cancer.
Tritium	Some people who drink water containing tritium in excess of the MCL over many years may have an increased risk of getting cancer.
Gross Alpha particle activity	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Combined Radium 226/228	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
Uranium	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.

Appendix 64481-E.
Health Effects Language for the Consumer Confidence Report – Inorganic Contaminants

Contaminant	*Health Effects Language*
Aluminum	Some people who drink water containing aluminum in excess of the MCL over many years may experience short-term gastrointestinal tract effects.
Antimony	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	Some people who drink water containing arsenic in excess of the MCL over many years may experience skin damage or circulatory system problems, and may have an increased risk of getting cancer.
Asbestos	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.
Barium	Some people who drink water containing barium in excess of the MCL over many years may experience an increase in blood pressure.
Beryllium	Some people who drink water containing beryllium in excess of the MCL over many years may develop intestinal lesions.
Cadmium	Some people who drink water containing cadmium in excess of the MCL over many years may experience kidney damage.
Chromium	Some people who use water containing chromium in excess of the MCL over many years may experience allergic dermatitis.
Copper	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.
Cyanide	Some people who drink water containing cyanide in excess of the MCL over many years may experience nerve damage or thyroid problems.
Fluoride	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 who drink water containing fluoride in excess of the state MCL of 2 mg/L may get mottled teeth.
Lead	Infants and children who drink water containing lead in excess of 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 this water over many years may

	develop kidney problems or high blood pressure.
Mercury	Some people who drink water containing mercury in excess of the MCL over many years may experience mental disturbances, or impaired physical coordination, speech and hearing.
Nickel	Some people who drink water containing nickel in excess of the MCL over many years may experience liver and heart effects.
Nitrate	Infants below the age of six months who drink water containing nitrate in excess of the MCL may quickly become seriously ill and, if untreated, may die because high nitrate levels can interfere with the capacity of the infant's blood to carry oxygen. Symptoms include shortness of breath and blueness of the skin. High nitrate levels may also affect the oxygen-carrying ability of the blood of pregnant women.
Nitrite	Infants below the age of six months who drink water containing nitrite in excess of the MCL may become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blueness of the skin.
Selenium	Selenium is an essential nutrient. However, some people who drink water containing selenium in excess of the MCL over many years may experience hair or fingernail losses, numbness in fingers or toes, or circulation system problems.
Thallium	Some people who drink water containing thallium in excess of the MCL over many years may experience hair loss, changes in their blood, or kidney, intestinal, or liver problems.

Appendix 64481-F.
Health Effects Language for the Consumer Confidence Report – Volatile Organic Contaminants

Contaminant	*Health Effects Language*
Benzene	Some people who use water containing benzene in excess of the MCL over many years may experience anemia or a decrease in blood platelets, and may have an increased risk of getting cancer.
Carbon Tetrachloride	Some people who use water containing carbon tetrachloride in excess of the MCL over many years may experience liver problems and may have an increased risk of getting cancer.
1,2-Dichlorobenzene	Some people who drink water containing 1,2-

	dichlorobenzene in excess of the MCL over many years may experience liver, kidney, or circulatory system problems.
1,4-Dichlorobenzene	Some people who use water containing 1.4-dichlorobenzenein in excess of the MCL over many years may experience anemia, liver, kidney, or spleen damage, or changes in their blood.
1,1-Dichloroethane	Some people who use water containing 1,1-dichloroethane in excess of the MCL over many years may experience nervous system or respiratory problems.
1,2-Dichloroethane	Some people who use water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.
1,1-Dichloroethylene	Some people who use water containing 1,1-dichloroethylene in excess of the MCL over many years may experience liver problems.
cis-1,2-Dichloroethylene	Some people who use water containing cis-1,2-dichloroethylene in excess of the MCL over many years may experience liver problems.
trans-1,2-Dichloroethylene	Some people who drink water containing trans-1,2-dichloroethylene in excess of the MCL over many years may experience liver problems.
Dichloromethane	Some people who drink water containing dichloromethane in excess of the MCL over many years may experience liver problems and may have an increased risk of getting cancer.
1,2-Dichloropropane	Some people who use water containing 1,2-dichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.
1,3-Dichloropropene	Some people who use water containing 1,3-dichloropropene in excess of the MCL over many years may have an increased risk of getting cancer.
Ethylbenzene	Some people who use water containing ethylbenzene in excess of the MCL over many years may experience liver or kidney problems.
Monochlorobenzene	Some people who use water containing chlorobenzene in excess of the MCL over many years may experience liver or kidney problems.
Styrene	Some people who drink water containing styrene in excess of the MCL over many years may experience liver, kidney, or circulatory system problems.
1,1,2,2-Tetrachloroethane	Some people who drinking water containing 1,1,2,2-tetrachloroethane in excess of the MCL over many years may experience liver or nervous system problems.

Tetrachloroethylene	Some people who use water containing tetrachloroethylene in excess of the MCL over many years may experience liver problems, and may have an increased risk of getting cancer.
1,2,4-Trichlorobenzene	Some people who use water containing 1,2,4-trichlorobenzene in excess of the MCL over many years may experience adrenal gland changes.
1,1,1,-Trichloroethane	Some people who use water containing 1,1,1-trichloroethane in excess of the MCL over many years may experience liver, nervous system, or circulatory system problems.
1,1,2-Trichloroethane	Some people who use water containing 1,1,2-trichloroethane in excess of the MCL over many years may experience liver, kidney, or immune system problems.
Trichloroethylene (TCE)	Some people who use water containing trichloroethylene in excess of the MCL over many years may experience liver problems and may have an increased risk of getting cancer.
TTHMs [Total Trihalomethanes]:	Some people who use water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.
Toluene	Some people who use water containing toluene in excess of the MCL over many years may experience nervous system, kidney, or liver problems.
Trichlorofluoro-methane	Some people who use water containing trichlorofluoromethane in excess of the MCL over many years may experience liver problems.
1,1,2-Trichloro-1,2,2-trifluoroethane	Some people who use water containing 1,1,2-trichloro-1,2,2-trichloroethane in excess of the MCL over many years may experience liver problems.
Vinyl Chloride	Some people who use water containing vinyl chloride in excess of the MCL over many years may have an increased risk of getting cancer.
Xylenes	Some people who use water containing xylenes in excess of the MCL over many years may experience nervous system damage.

Appendix 64481-G.
Health Effects Language for the Consumer Confidence Report – Synthetic Organic Contaminants

Contaminant	*Health Effects Language*

2,4-D	Some people who use water containing the weed killer 2,4-D in excess of the MCL over many years may experience kidney, liver, or adrenal gland problems.
2,4,5-TP (Silvex)	Some people who drink water containing Silvex in excess of the MCL over many years may experience liver problems.
Acrylamide	Some people who drink water containing high levels of acrylamide over a long period of time may experience nervous system or blood problems, and may have an increased risk of getting cancer.
Alachlor	Some people who use water containing alachlor in excess of the MCL over many years may experience eye, liver, kidney, or spleen problems, or experience anemia, and may have an increased risk of getting cancer.
Atrazine	Some people who use water containing atrazine in excess of the MCL over many years may experience cardiovascular system problems or reproductive difficulties.
Bentazon	Some people who drink water containing bentazon in excess of the MCL overy many year may experience prostate and gastrointestinal effects.
Benzo(a)pyrene [PAH]	Some people who use water containing benzo(a)pyrene in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
Carbofuran	Some people who use water containing carbofuran in excess of the MCL over many years may experience problems with their blood, or nervous or reproductive system problems.
Chlordane	Some people who use water containing chlordane in excess of the MCL over many years may experience liver or nervous system problems, and may have an increased risk of getting cancer.
Dalapon	Some people who drink water containing dalapon in excess of the MCL over many years may experience minor kidney changes.
Dibromochloro-propane (DBCP)	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.
Di (2-ethylhexyl) adipate	Some people who drink water containing di(2-ethylhexyl) adipate in excess of the MCL over many years may experience general toxic effects or reproductive difficulties.

Di (2-ethylhexyl) phthalate	Some people who use water containing di(2-ethylhexyl) phthalate in excess of the MCL over many years may experience liver problems or reproductive difficulties, and may have an increased risk of getting cancer.
Dinoseb	Some people who drink water containing dinoseb in excess of the MCL over many years may experience reproductive difficulties.
Dioxin (2,3,7,8-TCDD):	Some people who use water containing dioxin in excess of the MCL over many years may experience reproductive difficulties and may have an increased risk of getting cancer.
Diquat	Some people who drink water containing diquat in excess of the MCL over many years may get cataracts.
Endothall	Some people who drink water containing endothall in excess of the MCL over many years may experience stomach or intestinal problems.
Endrin	Some people who drink water containing endrin in excess of the MCL over many years may experience liver problems.
Epichlorohydrin	Some people who drink water containing high levels of epichlorohydrin over a long period of time may experience stomach problems, and may have an increased risk of getting cancer.
Ethylene dibromide (EDB)	Some people who use water containing ethylene dibromide in excess of the MCL over many years may experience liver, stomach, reproductive system, or kidney problems, and may have an increased risk of getting cancer.
Glyphosate	Some people who drink water containing glyphosate in excess of the MCL over many years may experience kidney problems or reproductive difficulties.
Heptachlor	Some people who use water containing heptachlor in excess of the MCL over many years may experience liver damage and may have an increased risk of getting cancer.
Heptachlor epoxide	Some people who use water containing heptachlor epoxide in excess of the MCL over many years may experience liver damage, and may have an increased risk of getting cancer.
Hexachlorobenzene	Some people who drink water containing hexachlorobenzene in excess of the MCL over many years may experience liver or kidney problems, or adverse reproductive effects, and may have an increased risk of getting cancer.

Hexachlorocyclo-pentadiene	Some people who use water containing hexachlorocyclopentadiene in excess of the MCL over many years may experience kidney or stomach problems.
Lindane	Some people who drink water containing lindane in excess of the MCL over many years may experience kidney or liver problems.
Methoxychlor	Some people who drink water containing methoxychlor in excess of the MCL over many years may experience reproductive difficulties.
Molinate (Ordram)	Some people who use water containing molinate in excess of the MCL over many years may experience reproductive effects.
Oxamyl [Vydate]:	Some people who drink water containing oxamyl in excess of the MCL over many years may experience slight nervous system effects.
PCBs [Polychlorinated biphenyls]:	Some people who drink water containing PCBs in excess of the MCL over many years may experience changes in their skin, thymus gland problems, immune deficiencies, or reproductive or nervous system difficulties, and may have an increased risk of getting cancer.
Pentachlorophenol	Some people who use water containing pentachlorophenol in excess of the MCL over many years may experience liver or kidney problems, and may have an increased risk of getting cancer.
Picloram	Some people who drink water containing picloram in excess of the MCL over many years may experience liver problems.
Simazine	Some people who use water containing simazine in excess of the MCL over many years may experience blood problems.
Thiobencarb	Some people who use water containing thiobencarb in excess of the MCL over many years may experience body weight and blood effects.
Toxaphene	Some people who use water containing toxaphene in excess of the MCL over many years may experience kidney, liver, or thyroid problems, and may have an increased risk of getting cancer.
Sulfate	Runoff/leaching from natural deposits; industrial wastes

§64482. Required Additional Health Information.

(a) A system that detects arsenic at levels above 25 ug/L, but below the MCL, shall include the following in its Consumer Confidence Report: "The U.S. Environmental Protection Agency is reviewing the drinking water standard for arsenic because of special

concerns that the standard may not be stringent enough. Arsenic is a naturally-occurring mineral known to cause cancer in humans at high concentrations."

(b) A system that detects nitrate at levels above 23 mg/L (as nitrate), but below the MCL, shall include the following in its Consumer Confidence Report: "Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider. If a system cannot demonstrate to the Department with at least five years of the most current monitoring data that its nitrate levels are stable, it shall also add the following language to the preceding statement on nitrate: "Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity."

(c) A system that detects lead above the action level in more than 5%, and up to and including 10%, of sites sampled, shall include the following in its Consumer Confidence Report: "Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and/or flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the USEPA Safe Drinking Water Hotline (1-800-426-4791)."

(d) A community water system serving 10,000 or more people that has a running annual average for total trihalomethanes compliance determined pursuant to section 64439 that exceeds 0.080 mg/L, but does not exceed the total trihalomethanes MCL, shall include the health effects language in table 64481-F in its Consumer Confidence Report.

§64483. Consumer Confidence Report Delivery and Recordkeeping.

(a) Each water system shall mail or directly deliver one copy of the Consumer Confidence Report to each customer.

(b) The system shall make a good faith effort to reach consumers who are served by the water system but are not bill-paying customers, such as renters or workers, using a mix of methods appropriate to the particular system such as: Posting the Consumer Confidence Reports on the Internet; mailing to postal patrons in metropolitan areas; advertising the availability of the Consumer Confidence Report in the news media; publication in a local newspaper; posting in public places such as cafeterias or lunch rooms of public buildings; delivery of multiple copies for distribution by single-biller customers such as apartment buildings or large private employers; and delivery to community organizations.

(c) No later than the date the water system is required to distribute the Consumer Confidence Report to its customers, each water system shall mail a copy of the report to the Department, followed within 3 months by a certification that the report has been distributed to customers, and that the information is correct and consistent with the compliance monitoring data previously submitted to the Department.

(d) No later than the date the water system is required to distribute the Consumer Confidence Report to its customers, each privately-owned water system shall mail a copy of the report to the California Public Utilities Commission.

(e) Each water system shall make its Consumer Confidence Report available to the public upon request.

(f) Each water system serving 100,000 or more persons shall post its current year's Consumer Confidence Report on a publicly-accessible site on the Internet.

(g) Each water system shall retain copies of its Consumer Confidence Reports for no less than 5 years.

(h)

CHAPTER 15.5 DISINFECTANT RESIDUALS, DISINFECTION BYPRODUCTS, AND DISINFECTION BYPRODUCT PRECURSORS

ARTICLE 1. General Requirements and Definitions

§64530. Applicability of this Chapter.

(a) Community water systems and nontransient, noncommunity water systems that treat their water with a chemical disinfectant in any part of the treatment process or which provide water that contains a chemical disinfectant shall comply with the requirements of this chapter beginning on the dates specified in paragraphs (1) or (2).

(1) Systems using approved surface water and serving 10,000 or more persons shall comply beginning January 1, 2002.

(2) Systems using approved surface water and serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water shall comply beginning January 1, 2004.

(b) Transient noncommunity water systems using chlorine dioxide shall comply with the requirements for chlorine dioxide in this chapter beginning on the dates specified in paragraphs (1) or (2).

(1) Systems using approved surface water and serving 10,000 or more persons shall comply beginning January 1, 2002.

(2) Systems using approved surface water and serving fewer than 10,000 persons and systems using only ground water not under the direct influence of surface water shall comply beginning January 1, 2004.

§64531. Definitions Governing Terms Used in this Chapter.
The definitions in sections 64400 through 64402.20 of chapter 15 and sections 64651.10 through 64651.93 of chapter 17 shall govern the interpretation of terms used in this chapter.

NOTE: This publication is meant to be an aid to the staff of the CDHS Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law. Refer to the published codes whenever specific citations are required.

ARTICLE 2. Maximum Contaminant Levels for Disinfection Byproducts and Maximum Residual Disinfectant Levels

§ 64533. Maximum Contaminant Levels for Disinfection Byproducts.

(a) Using the monitoring and calculation methods specified in sections 64534, 64534.2, 64535, and 64535.2, the primary MCLs for the disinfection byproducts shown in table 64533-A shall not be exceeded in drinking water supplied to the public.

Table 64533-A

Maximum Contaminant Levels and Detection Limits for Purposes of Reporting Disinfection Byproducts

Disinfection Byproduct	Maximum Contaminant Level (mg/L)	Detection Limit for Purposes of Reporting (mg/L)
Total trihalomethanes (TTHM)	0.080	
Bromodichloromethane		0.0005
Bromoform		0.0005
Chloroform		0.0005
Dibromochloromethane		0.0005
Haloacetic acids (five) (HAA5)	0.060	
Monochloroacetic Acid		0.002
Dichloroacetic Acid		0.001
Trichloroacetic Acid		0.001
Monobromoacetic Acid		0.001
Dibromoacetic Acid		0.001
Bromate	0.010	0.005
Chlorite	1.0	0.02

(b) A system installing GAC, membranes, or other technology to limit disinfectant byproducts to comply with this section may apply to the Department for an extension up to December 31, 2003. Applications for extensions shall include the results of disinfection byproduct monitoring, a description of the technology being installed and how it is expected to affect future disinfection byproduct levels, and a proposed schedule for compliance. If granted an extension, a system shall meet the schedule and interim treatment and monitoring requirements established by the Department.

(c) The best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for disinfection byproducts are identified in table 64533-B.

Table 64533-B
Best Available Technology
Disinfection Byproducts

Disinfection Byproduct	**Best Available Technology**
TTHM and HAA5	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant
Bromate	Control of ozone treatment process to reduce production of bromate
Chlorite	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels

§64533.5. Maximum Residual Disinfectant Levels.

(a) Using the monitoring and calculation methods specified in sections 64534, 64534.4, 64535, and 64535.4, the MRDLs for the disinfectants shown in table 64533.5-A shall not be exceeded in drinking water supplied to the public.

Table 64533.5-A
Maximum Residual Disinfectant Level

Disinfectant Residual	*MRDL (mg/L)*
Chlorine	4.0 (as Cl_2)
Chloramines	4.0 (as Cl_2)
Chlorine dioxide	0.8 (as ClO_2)

(b) Notwithstanding subsection (a), systems may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system in excess of the levels specified in table 64533.5-A in order to protect public health, to address specific microbiological contamination problems caused by circumstances such as, but not limited to**,** distribution line breaks, storm run-off events, source water contamination events, natural disasters, or cross-connection events. In such circumstances, systems shall immediately notify the Department of the source and cause of contamination, the levels of residual disinfectant, other actions being taken to correct the problem, and the expected duration of the exceedance.

(c) The best technologies, treatment techniques, or other means available for achieving compliance with the maximum residual disinfectant levels in this section are control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels.

ARTICLE 3. Monitoring requirements

§64534. General Monitoring Requirements.

(a) Analyses required pursuant to this chapter shall be performed by laboratories certified to perform those analyses by the Department, pursuant to section 116390, Health and Safety Code. Analyses shall be made in accordance with EPA approved methods as prescribed in Section 141.131 of Title 40, Code of Federal Regulations, as published in the December 16, 1998, Federal Register (Vol. 63, No. 241) and revised in the January 16, 2001, Federal Register (Vol. 66, No. 10).

(b) Sample collection, and field tests including pH, alkalinity, and chlorine, chloramines, and chlorine dioxide residual disinfectants, shall be performed by a water treatment or distribution operator certified by the Department pursuant to section 106875 of the Health and Safety Code or by personnel trained to collect samples and/or perform these tests by the Department, a certified laboratory, or a certified operator.

(c) Systems shall take all samples during normal operating conditions, which exclude those circumstances covered under section 64533.5(b).

(d) A system may apply to the Department for approval to consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required. In order to qualify for this reduction in monitoring requirements a system shall demonstrate to the Department that the multiple wells produce water from the same aquifer. To make this demonstration, a system shall submit information to the Department regarding the location, depth, construction, and geologic features of each well, and water quality information for each well. The Department will use this information to determine whether the wells produce water from a single aquifer.

(e) Systems shall use only data collected under the provisions of this chapter or 40 CFR Part 141 Subpart M (Information Collection Rule), as published in the May 14, 1996 Federal Register (Vol. 61, No. 94), to qualify for reduced monitoring pursuant to this article.

§64534.2. Disinfection Byproducts Monitoring.

(a) Community and nontransient noncommunity water systems shall monitor for TTHM and HAA5 at the frequencies and locations indicated in table 64534.2-A.

Table 64534.2-A
Routine and Increased Monitoring Frequency for TTHM and HAA5

COLUMN A *Type of System*	COLUMN B *Persons Served*	COLUMN C *Minimum monitoring frequency*	COLUMN D *Sample location in the distribution system & increased monitoring frequencies*
Systems using approved surface water	≥10,000	Four samples per quarter per treatment plant	At least 25 percent of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods[1].
	500 - 9,999	One sample per quarter per treatment plant	Locations representing maximum residence time[1].
	< 500	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system shall increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until system meets reduced monitoring criteria in paragraph (3) of this subsection.
Systems using only ground water not under direct influence of surface	≥10,000	One sample per quarter per treatment plant	Locations representing maximum residence time[1].

water and using chemical disinfectant			
	<10,000	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time[1]. If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system shall increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the maximum residence time in the distribution system, until system meets reduced monitoring criteria in paragraph (3) of this subsection.

[1] If a system elects to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) shall be taken at locations that represent the maximum residence time of the water in the distribution system. The remaining samples shall be taken at locations representative of at least average residence time in the distribution system.

(1) Systems may apply to the Department to monitor at a reduced frequency in accordance with table 64534.2-B. The application shall include the results of all TOC, TTHM, and HAA5 monitoring conducted in the previous 12 months and the proposed revised monitoring plan as required by section 64534.8. The Department will evaluate data submitted with the application to determine whether or not the system is eligible for the reduced monitoring specified in table 64534.2-B.

NOTE: This publication is meant to be an aid to the staff of the CDHS Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law. Refer to the published codes whenever specific citations are required.

Table 64534.2-B
Reduced Monitoring Frequency for TTHM and HAA5

If the system is a(n) ...	*serving...*	*the system may reduce monitoring if it has monitored at least one year and...*	*to this level*
Approved surface water system which has a source water TOC[1] level, before any treatment, ≤ 4.0 mg/L	≥10,000	TTHM[1] ≤0.040 mg/L and HAA5[1] ≤0.030 mg/L	One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
	500-9,999	TTHM[1] ≤0.040 mg/L and HAA5[1] ≤0.030 mg/L	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
System using only ground water not under direct influence of surface water and using chemical disinfectant	≥10,000	TTHM[1] ≤0.040 mg/L and HAA5[1] ≤0.030 mg/L	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
	<10,000	TTHM[1] ≤0.040 mg/L and HAA5[1] ≤0.030 mg/L for two consecutive years OR TTHM[1] ≤0.020 mg/L and HAA5[1] ≤0.015 mg/L for one year	One sample per treatment plant per three-year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following the quarter in which system qualifies for reduced monitoring.

[1] TOC, TTHM, and HAA5 values based on annual averages.

(2) Systems on reduced monitoring shall resume monitoring at the frequency specified in column C of table 64534.2-A in the quarter immediately following the quarter in which the system exceeds 0.060 mg/L for the TTHM annual average or 0.045 mg/L for the HAA5 annual average. For systems using only ground water not under the direct influence of surface water and serving fewer than 10,000 persons or systems using approved surface water and serving fewer than 500 persons, if either the TTHM annual average is >0.080 mg/L or the HAA5 annual average is >0.060 mg/L, the system shall go to increased monitoring identified in column D of table 64534.2-A in the quarter immediately following the quarter in which the system exceeds 0.080 mg/L or 0.060 mg/L for the TTHM and HAA5 annual averages, respectively.

(3) Systems on increased monitoring pursuant to column D of table 64534.2-A may return to routine monitoring specified in column C of table 64534.2-A if, after at least one year of monitoring, TTHM annual average is ≤0.060 mg/L and HAA5 annual average is ≤0.045 mg/L.

(b) Community and nontransient noncommunity water systems using chlorine dioxide shall conduct monitoring for chlorite as follows:

(1) Systems shall take daily samples at the entrance to the distribution system. For any daily sample that exceeds the chlorite MCL, the system shall take three additional chlorite distribution system samples the following day (in addition to the daily sample required at the entrance to the distribution system) at these locations: As close to the first customer as possible, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system.

(2) Systems shall take a three-sample set each month in the distribution system. The system shall take one sample at each of the following locations: As close to the first customer as possible, at a location representative of average residence time, and at a location reflecting maximum residence time in the distribution system. Any additional routine sampling shall be conducted in the same manner (as three-sample sets, at the specified locations). The system may use the results of additional monitoring conducted under paragraph (1) to meet the monitoring requirement in this paragraph.

(3) Systems may apply to the Department to reduce monthly chlorite monitoring in the distribution system pursuant to paragraph (2) to one three-sample set per quarter after one year of monitoring during which no individual chlorite sample taken in the distribution system has exceeded the chlorite MCL and the system has not been required to conduct additional monitoring under paragraph (1). The application shall include the results of all chlorite monitoring conducted in the previous 12 months and the proposed revised monitoring plan as required by section 64534.8. The Department will evaluate data submitted with the application and determine whether or not the system is eligible to reduce monitoring to one three-sample set per quarter. The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under paragraph (2) exceeds the chlorite MCL or the system is required to conduct additional monitoring under paragraph (1), at which time the system shall revert to routine monitoring.

(c) Community and nontransient noncommunity systems using ozone shall monitor for bromate as follows:

(1) Systems shall take one sample per month for each treatment plant in the system using ozone. Samples shall be taken at the entrance to the distribution system while the ozonation system is operating under normal conditions.

(2) Systems may reduce bromate monitoring from monthly to once per quarter, if the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly bromide measurements for one year. The system shall continue monthly bromide monitoring of the source water to remain on reduced bromate monitoring. If the running annual average source water bromide concentration, computed quarterly, is equal to or greater than 0.05 mg/L based upon representative monthly measurements, the system shall resume routine bromate monitoring pursuant to paragraph (1).

§64534.4. Disinfectant Residuals Monitoring.

(a) Community and nontransient noncommunity water systems that use chlorine or chloramines shall measure the residual disinfectant levels at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in section 64421. Systems using approved surface water may use the results of residual disinfectant concentration sampling conducted under section 64656, in lieu of taking separate samples.

(b) Public water systems that use chlorine dioxide shall monitor for chlorine dioxide daily at the entrance to the distribution system. For any daily sample that exceeds the MRDL, the system shall take three chlorine dioxide distribution system samples the following day as follows:

(1) If chlorine dioxide or chloramines are used to maintain a disinfectant residual in the distribution system, or if chlorine is used to maintain a disinfectant residual in the distribution system and there are no disinfection addition points after the entrance to the distribution system (i.e., no booster chlorination), the system shall take three samples as close to the first customer as possible, at intervals of at least six hours.

(2) If chlorine is used to maintain a disinfectant residual in the distribution system and there are one or more disinfection addition points after the entrance to the distribution system (i.e., booster chlorination), the system shall take one sample at each of the following locations: As close to the first customer as possible, in a location representative of average residence time, and as close to the furthest customer as possible (reflecting maximum residence time in the distribution system).

§64534.6. Disinfection Byproduct Precursors (DBPP) Monitoring.

(a) Systems that use approved surface water and conventional filtration treatment (as defined in section 64651.23) shall take one paired TOC sample (source water and treated water) and one source water alkalinity sample per month per treatment plant at a time representative of normal operating conditions and influent water quality. TOC and alkalinity in the source water shall be monitored prior to any treatment and at the same

time as TOC monitoring in the treated water. TOC in the treated water shall be monitored no later than the point of combined filter effluent turbidity monitoring and shall be representative of the treated water.

(b) Systems using approved surface water with an annual average treated water TOC of less than 2.0 mg/L for two consecutive years, or less than 1.0 mg/L for one year, may reduce monitoring for both TOC and alkalinity to one paired sample and one source water alkalinity sample per plant per quarter. The system shall revert to monitoring pursuant to subsection (a) in the first month following the quarter that the annual average treated water TOC is equal to or greater than 2.0 mg/L.

§64534.8. Monitoring Plans.
Each system shall develop and submit to the Department a monitoring plan. The system shall implement the plan after Department review and approval. The system shall maintain the plan and make it available for inspection by the general public no later than 30 days following the applicable compliance date in section 64530(a) or (b). The Department will evaluate the plan based on the following required elements:

(a) Specific locations and schedules for collecting samples for any parameters included in this chapter, including seasonal variations if applicable.

(b) How the system will calculate compliance with MCLs, MRDLs, and treatment techniques.

ARTICLE 4. Compliance requirements

§64535. General Requirements for Determining Compliance.

(a) All samples taken and analyzed in accordance with section 64534.8 shall be included in determining compliance, pursuant to sections 64535.2, 64535.4, and 64536.4.

(b) For violations of the MCLs in section 64533 or MRDLs in section 64533.5 that may pose an acute risk to human health, notification shall be pursuant to section 64465.

§64535.2. Determining Disinfection Byproducts Compliance.

(a) During the first year of monitoring for disinfection byproducts under section 64534.2 the system shall comply with the following:

(1) The average of the first quarter's results shall not exceed four times the MCLs specified in section 64533.

(2) The average of the first and second quarter's results shall not exceed two times the MCLs specified in section 64533.

(3) The average of the first, second, and third quarter's results shall not exceed 1.33 times the MCLs specified in section 64533.

(b) TTHM and HAA5 MCL compliance is determined as follows:

(1) For systems monitoring quarterly, the running annual arithmetic average, computed quarterly, of quarterly arithmetic averages of all samples collected pursuant to section 64534.2(a) shall not exceed the MCLs specified in section 64533.

(2) For systems monitoring less frequently than quarterly, the average of samples collected that calendar year pursuant to section 64534.2(a) shall not exceed the MCLs specified in section 64533. If the average of the samples collected under section 64534.2(a) exceeds the MCL, the system shall increase monitoring to once per quarter per treatment plant. Compliance with the MCL shall then be determined by the average of the sample that triggered the quarterly monitoring and the following three quarters of monitoring, unless the result of fewer than four quarters of monitoring will cause the running annual average to exceed the MCL, in which case the system is in violation at the end of that quarter. After monitoring quarterly for four consecutive quarters (including the quarter that triggered the quarterly monitoring), and until such time as monitoring returns to routine monitoring pursuant to section 64534.2(a)(3), compliance shall be determined pursuant to paragraph (1).

(3) If the running annual arithmetic average of quarterly averages covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

(4) If a public water system fails to complete four consecutive quarters of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.

(c) Compliance for bromate shall be based on a running annual arithmetic average, computed quarterly, of monthly samples (or, for months in which the system takes more than one sample, the average of all samples taken during the month) collected by the system as prescribed by section 64534.2(c). If the average of samples covering any consecutive four-quarter period exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6. If a public water system fails to complete 12 consecutive months of monitoring, compliance with the MCL for the last four-quarter compliance period shall be based on an average of the available data.

(d) Compliance for chlorite shall be based on an arithmetic average of each three-sample set taken in the distribution system as prescribed by sections 64534.2(b)(1), (2) and (3). If the arithmetic average of any three-sample set exceeds the MCL, the system is in violation of the MCL and shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

§64535.4. Determining Disinfectant Residuals Compliance.

(a) During the first year of monitoring for disinfection residuals under section 64534.4 the system shall comply with the following:

(1) The average of the first quarter's results shall not exceed four times the MRDLs specified in section 64533.5.

(2) The average of the first and second quarter's results shall not exceed two times the MRDLs specified in section 64533.5.

(3) The average of the first, second, and third quarter's results shall not exceed 1.33 times the MRDLs specified in section 64533.5.

(b) Chlorine and chloramines MRDL compliance is determined as follows:

(1) Compliance shall be based on a running annual arithmetic average, computed quarterly, of monthly averages of all samples collected by the system under section 64534.4(a). If the average covering any consecutive four-quarter period exceeds the MRDL, the system is in violation of the MRDL and shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

(2) In cases where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance shall be determined by including together all monitoring results of both chlorine and chloramines. Reports submitted pursuant to sections 64537 through 64537.6 shall clearly indicate which residual disinfectant was analyzed for each sample.

(c) Compliance for chlorine dioxide shall be based on consecutive daily samples collected by the system under section 64534.4(b).

(1) If any daily sample taken at the entrance to the distribution system exceeds the MRDL, and one (or more) of the three samples taken in the distribution system exceed the MRDL, the system is in violation of the MRDL and shall take immediate corrective action to lower the level of chlorine dioxide below the MRDL. The system shall notify the Department within 48 hours of the determination, notify the public pursuant to the procedures for acute health risks in section 64465, including language in section 64468.5(c), in addition to reporting to the Department pursuant to sections 64537 through 64537.6. Failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the entrance to the distribution system is also an MRDL violation and the system shall notify the public pursuant to the procedures for acute health risks in section 64465, including language in section 64468.5(c), in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

(2) If any two consecutive daily samples taken at the entrance to the distribution system exceed the MRDL and all distribution system samples taken are below the MRDL, the system is in violation of the MRDL and shall take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling. The system shall notify the public pursuant to the procedures for nonacute health risks in section 64464.3, including language in section 64468.5(c), in addition to reporting to the Department pursuant to sections 64537 through 64537.6. Failure to monitor at the entrance to the distribution system the day following an exceedance of the chlorine dioxide MRDL at this site is also an MRDL violation and the system shall notify the

public pursuant to the procedures for nonacute health risks in section 64464.3, including language in section 64468.5(c), in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

ARTICLE 5. Treatment technique for control of disinfection byproduct precursors (DBPP)

§64536. Alternative Compliance Criteria to the Enhanced Coagulation and Enhanced Softening Performance Requirements.

(a) Systems using approved surface water and conventional filtration treatment shall meet any one of the alternative compliance criteria in paragraphs (1) through (6) to comply with this article or comply with the requirements of section 64536.2. Systems that meet one of the criteria in paragraphs (1) through (6) shall still comply with monitoring requirements in section 64534.6.

(1) The system's source water TOC level is less than 2.0 mg/L, calculated quarterly as a running annual average.

(2) The system's treated water TOC level is less than 2.0 mg/L, calculated quarterly as a running annual average.

(3) The system's source water TOC level is less than 4.0 mg/L, calculated quarterly as a running annual average; the source water alkalinity is greater than 60 mg/L (as $CaCO_3$), calculated quarterly as a running annual average; and either

(A) The TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively; or

(B) Prior to the applicable compliance date in section 64530(a) or (b), the system has applied to the Department for the approval of, and committed funds to the installation of, technologies that will limit the levels of TTHM and HAA5 to no more than 0.040 mg/L and 0.030 mg/L, respectively. The application to the Department shall include a description of the technology to be installed, evidence of a commitment to complete the installation, such as a signed contract, bid solicitation, or approved bond measure, and a schedule containing milestones and periodic progress reports for installation and operation of the technology. These technologies shall be installed and operating not later than June 30, 2005.

(4) The TTHM and HAA5 running annual averages are no greater than 0.040 mg/L and 0.030 mg/L, respectively, and the system uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

(5) The system's source water SUVA, prior to any treatment and measured monthly, is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.The system's finished water SUVA, measured monthly, is less than or equal to 2.0 L/mg-m, calculated quarterly as a running annual average.

(b) Systems using approved surface water and conventional filtration treatment and practicing softening that cannot achieve the TOC removal required by section 64536.2(a) shall meet any one of the criteria in paragraphs (1) through (2) below or any one of the criteria in section 64536(a), paragraphs (1) through (6) to comply with this article. Systems that meet one of the criteria in paragraphs (1) through (2) below or one of the criteria in section 64536(a), paragraphs (1) through (6) shall still comply with the monitoring requirements in section 64534.6.

(1) Softening that results in lowering the treated water alkalinity to less than 60 mg/L (as $CaCO_3$), measured monthly and calculated quarterly as a running annual average; or

(2) Softening that results in removing at least 10 mg/L of magnesium hardness (as $CaCO_3$), measured monthly and calculated quarterly as an annual running average.

§64536.2. Enhanced Coagulation and Enhanced Softening Performance Requirements.

(a) Systems using approved surface water and conventional filtration treatment (as defined in section 64651.23) shall operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels specified in this section, unless the system meets at least one of the alternative compliance criteria listed in section 64536(a) or (b).

(b) Systems shall achieve the Step 1 percent reduction of TOC specified in table 64536.2-A between the source water and the combined filter effluent, unless the Department approves a system's request for alternate minimum TOC removal (Step 2) requirements under subsection (c). Systems practicing softening shall meet the Step 1 TOC removals in the far-right column (Source water alkalinity >120 mg/L) of table 64536.2-A for the specified source water TOC:

Table 64536.2-A

Step 1 Required Removal of TOC by Enhanced Coagulation and Enhanced Softening Systems Using Conventional Treatment[1, 2]

	Required Removal of TOC		
Source-Water TOC, mg/L	*Source-Water Alkalinity, mg/L as $CaCO_3$*		
	0-60	*>60-120*	*>120*
>2.0-4.0	35.0%	25.0%	15.0%
>4.0-8.0	45.0%	35.0%	25.0%
>8.0	50.0%	40.0%	30.0%

[1] Systems that meet one of the criteria in section 64536(a), paragraphs (1) through (6) do not have to operate with enhanced coagulation.

[2] Softening systems that meet one of the criteria in section 64536(b), paragraphs (1) through (2) do not have to operate with enhanced softening.

(c) Systems using approved surface water and conventional treatment that cannot achieve the Step 1 TOC removals required by subsection (b) due to water quality parameters or operational constraints shall apply to the Department, within three months of failure to achieve the TOC removals required by subsection (b), for approval of Step 2 removal requirements. If the Department approves the Step 2 removal requirements

pursuant to subsection (d), and the system conducted monthly TOC monitoring beginning one year prior to the compliance date specified in section 64530, the Step 2 removal requirements will be retroactive to the compliance date for the purposes of determining compliance.

(d) Applications made to the Department by systems using enhanced coagulation for approval of Step 2 removal requirements under subsection (c) shall include, as a minimum, results of bench-scale or pilot-scale testing conducted under paragraph (1) of this subsection that were used to determine the alternate enhanced coagulation level.

(1) Alternate enhanced coagulation level is defined as coagulation at a coagulant dose and pH as determined by the method described in paragraphs (1) through (4) such that an incremental addition of 10 mg/L of alum (or equivalent addition of iron coagulant) results in a TOC removal of ≤ 0.3 mg/L. The percent removal of TOC at this point on the "TOC removal versus coagulant dose" curve is then defined as the Step 2 removal requirement for the system. Once approved by the Department, this Step 2 removal requirement supersedes the minimum TOC removal required by subsection 64536.2(b). This requirement shall be effective until such time as the Department approves a new value based on the results of a new bench-scale or pilot-scale test.

(2) Bench-scale or pilot-scale testing of enhanced coagulation shall be conducted by using representative water samples and adding 10 mg/L increments of alum (or equivalent addition of iron coagulant) until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in table 64536.2-B.

Table 64536.2-B
Enhanced Coagulation Step 2 Target pH

Alkalinity mg/L as $CaCO_3$	*Target PH*
0-60	5.5
>60-120	6.3
>120-240	7.0
>240	7.5

(3) For waters with alkalinities of less than 60 mg/L for which the addition of small amounts of alum (or equivalent addition of iron coagulant) drives the pH below 5.5 before significant TOC removal occurs, the system shall add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/L per 10 mg/L alum added (or equivalent addition of iron coagulant) is reached.

(4) If the TOC removal is consistently less than 0.3 mg/L of TOC per 10 mg/L of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the system is eligible to apply for a waiver of enhanced coagulation requirements. The application shall include, as a minimum, the results of bench-scale or pilot-scale testing conducted under paragraph (1) of this subsection.

§64536.4. Disinfection Byproduct Precursor Compliance Calculations.

(a) Systems not meeting any of the criteria identified in sections 64536(a) or (b) shall comply with requirements contained in sections 64536.2(a) or (b) and shall calculate compliance quarterly, beginning after the system has collected 12 months of data, by determining an annual average using the following method:

(1) Determine actual monthly TOC percent removal, equal to: (1 - [treated water TOC/source water TOC]) x 100.

(2) Determine the required monthly TOC percent removal (from either table 64536.2-A or from section 64536.2(c)).

(3) Divide the value in paragraph(a)(1) by the value in paragraph(a)(2).

(4) Add together the results of paragraph(a)(3) for the last 12 months and divide by 12.

(5) If the value calculated in paragraph(a)(4) is less than 1.00, the system is not in compliance with the TOC percent removal requirements.

(b) In any month that one or more of the conditions of sections 64536.4(b)(1) through (b)(6) are met, the system may assign a monthly value of 1.0 (in lieu of the value calculated in section 64536.4(a)(3)) when calculating compliance under the provisions of subsection (a).

(1) The system's source water TOC level, prior to any treatment, is less than or equal to 2.0 mg/L.

(2) The system's treated water TOC level is less than or equal to 2.0 mg/L.

(3) The system's source water SUVA, prior to any treatment, is less than or equal to 2.0 L/mg-m.

(4) The system's finished water SUVA is less than or equal to 2.0 L/mg-m.

(5) A system practicing softening removes at least 10 mg/L of magnesium hardness (as $CaCO_3$).

(6) A system practicing enhanced softening lowers alkalinity below 60 mg/L (as $CaCO_3$).

§64536.6. Disinfection Byproduct Precursors (DBPP) Public Notification Requirements.

For systems using conventional treatment, enhanced coagulation or enhanced softening are identified as treatment techniques to control the level of disinfection byproduct precursors in drinking water treatment and distribution systems. If a system fails to comply with the enhanced coagulation or enhanced softening requirements established in this article the system shall notify the public pursuant to sections 64464.3 and 64467, including language in section 64468.5, in addition to reporting to the Department pursuant to sections 64537 through 64537.6.

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ARTICLE 6. Reporting and recordkeeping requirements

§64537. General Reporting Requirements.

Systems required to sample quarterly or more frequently, pursuant to section 64534.2, 64534.4, or 64534.6, shall report to the Department within 10 days after the end of each quarter in which samples were collected according to section 64451(c), notwithstanding the provisions of sections 64451(a) and (b). Systems required to sample less frequently than quarterly shall report to the Department within 10 days after the end of each monitoring period in which samples were collected. Systems shall report information to the Department in conformance with the requirements of sections 64537.2, 64537.4, and 64537.6.

§64537.2. Disinfection Byproducts Reporting.

Systems shall report to the Department the information specified in table 64537.2-A.

Table 64537.2-A
Disinfection Byproducts Reporting

If the system is monitoring under the requirements of section 64534.2 for...		*The system shall report...*
TTHM and HAA5	(a) on a quarterly or more frequent basis	(1) The number of samples taken during the last quarter. (2) The location, date, and result of each sample taken during the last quarter. (3) The arithmetic average of all samples taken in the last quarter. (4) The annual arithmetic average of the quarterly arithmetic averages of the samples for the last four quarters. (5) Whether, based on section 64535.2(b), the MCL was violated.
	(b) less frequently than quarterly (but at least annually)	(1) The number of samples taken during the last year. (2) The location, date, and result of each sample taken during the last monitoring period. (3) The arithmetic average of all samples taken over the last year. (4) Whether, based on section 64535.2(b), the MCL was violated.
	(c) less frequently than annually	(1) The location, date, and result of the last sample taken. (2) Whether, based on section 64535.2(b), the MCL was violated.

Chlorite	(1) The number of entry point samples taken each month for the last 3 months. (2) The location, date, and result of each sample (both entry point and distribution system) taken during the last quarter. (3) For each month in the reporting period, the arithmetic average of all samples taken in each three sample set taken in the distribution system. (4) Whether, based on section 64535.2(d), the MCL was violated, in which month it was violated, and how many times it was violated in each month.
Bromate	(1) The number of samples taken during the last quarter. (2) The location, date, and result of each sample taken during the last quarter. (3) The arithmetic average of the monthly arithmetic averages of all samples taken in the last year. (4) Whether, based on section 64535.2(c), the MCL was violated.

§64537.4. Disinfectants Reporting.

Systems shall report to the Department the information specified in table 64537.4-A

Table 64537.4-A
Disinfectants Reporting

If the system is monitoring under the requirements of section 64534.4 for...	*The system shall report...*
Chlorine or chloramines	(1) The number of samples taken during each month of the last quarter. (2) The monthly arithmetic average of all samples taken in each month for the last 12 months. (3) The arithmetic average of all monthly averages for the last 12 months. (4) Whether, based on section 64535.4(b), the MRDL was violated.
Chlorine dioxide	(1) The dates, results, and locations of samples taken during the last quarter. (2) Whether, based on section 64535.4(c), the MRDL was violated.

(3) Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute or nonacute.

§64537.6. Disinfection Byproduct Precursors and Enhanced Coagulation or Enhanced Softening Reporting.

(a) Systems required to meet the enhanced coagulation or enhanced softening requirements in section 64536.2(a) or (b) shall report the following:

(1) The number of paired (source water and treated water) samples taken during the last quarter.

(2) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter.

(3) For each month in the reporting period that paired samples were taken, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal.

(4) Calculations for determining compliance with the TOC percent removal requirements, as provided in section 64536.4(a).

(5) Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in section 64536.2 for the last four quarters.

(b) Systems meeting one or more of the alternative compliance criteria in section 64536(a) or (b), in lieu of meeting the requirements in section 64536.2(a) or (b), shall report the following:

(1) The alternative compliance criterion that the system is using.

(2) The number of paired samples taken during the last quarter.

(3) The location, date, and result of each paired sample and associated alkalinity taken during the last quarter.

(4) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in sections 64536(a)(1) or (3) or of treated water TOC for systems meeting the criterion in section 64536(a)(2).

(5) The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in section 64536(a)(5) or of treated water SUVA for systems meeting the criterion in section 64536(a)(6).

(6) The running annual average of source water alkalinity for systems meeting the criterion in section 64536(a)(3) and of treated water alkalinity for systems meeting the criterion in section 64536(b)(1).

(7) The running annual average for both TTHM and HAA5 for systems meeting the criterion in section 64536(a)(3) or (4).

(8) The running annual average of the amount of magnesium hardness removal (as $CaCO_3$, in mg/L) for systems meeting the criterion in section 64536(b)(2).

(9) Whether the system is in compliance with the particular alternative compliance criterion in section 64536(a) or (b).

CHAPTER 16. CALIFORNIA WATERWORKS STANDARDS

Article 1. Applicability, Responsibility and Definitions

§64555. Definitions.

(a) "Asphalt Institute Standard" means a standard or specification issued by the Asphalt Institute.

(b) "ASTM Standard" means a standard issued by the American Society for Testing and Materials (ASTM).

(c) "AWWA Standard" means a standard adopted by the American Water Works Association (AWWA).

(d) "Federal Specification" means a standard approved by the United States General Services Agency for use by federal agencies.

(e) "Flat Rate Water System" means a public water system where water deliveries to at least 50 percent of the service connections are not metered.

(f) "Metered Water System" means a public water system that is not a flat rate water system.

Article 2. General Requirements

§64560. Basic Design.

(a) Additions to or changes in distribution systems shall be designed and constructed to:

(1) Be free of structural and sanitary hazards.

(2) Protect the quality of the water delivered to users at all times.

(3) Protect the distribution system against contamination by backflow.

(4) Provide adequate size and capacity to meet the requirements of Sections 64562 and 64566.

(5) Withstand, with ample safety factors, the physical stresses imposed during normal operation.

(6) Minimize the effects of events such as power supply, equipment, and structural failures, earthquakes, fires, floods and sabotage that are reasonably foreseeable.

(7) Protect against unauthorized entry and/or vandalism.

(8) Protect against adverse effects in areas subject to freezing weather.

§64562. Quantity of Supply.

(a) Sufficient water shall be available from the water sources and distribution reservoirs to supply adequately, dependably and safely the total requirements of all users

under maximum demand conditions before agreement is made to permit additional service connections to a system.

(b) To ascertain this, first determine the total capacity of the existing source by procedures prescribed in Section 64563 and determine the total storage volume of the existing distribution reservoirs. Then determine the needed source capacity and the needed storage volume by procedures prescribed in Section 64564. The total available source capacity shall not be less than the needed source capacity.

(c) The requirements of this section shall apply to an entire public water system and to each pressure zone within a public water system.

(1) Requirements for an entire public water system shall be determined from the total source capacity, total storage volume and the total number of service connections.

(2) Requirements for a particular pressure zone shall be determined from the total water supply available from the water sources and interzonal transfers directly supplying the zone, from the total storage volume within the zone and from the number of service connections within the zone.

§64563. Procedures for Determining Source Capacity.

(a) The source capacity of a well shall be based on the sustained yield of the well or pump output, whichever is less.

(1) Sustained yield of a well shall be determined from a pump test or from historical records.

(2) The conditions of a pump test used to determine sustained yield of a well shall be acceptable to the Department and shall include:

(A) Constant rate of water discharge from the well during the pump test.

(B) Continuation of the pump test until at least four consecutive measurements of water level drawdown in the well and the elapsed time since the beginning of the pump test yield a straight line when the drawdown is plotted against the logarithm of the elapsed time.

(b) The source capacity of a surface water supply or a spring shall be the lowest anticipated daily yield, based on adequately supported and documented data.

(c) The source capacity of a purchased water connection between two public water systems shall be included in the total source capacity of the purchaser if the purchaser has sufficient storage or standby source capacity to meet user requirements during reasonably foreseeable shutdowns by the supplier.

(d) Where the capacity of a source varies seasonally, the source capacity shall be the capacity at the time of maximum day demand.

§64564. Procedures for Determining Needed Source Capacity and Needed Storage Volume.

(a) Whenever possible, needed source capacity and needed storage volume shall be determined from existing water use records of the water system.

The records used shall clearly indicate total source capacity, total storage volume and maximum day demand of previous years.

The existing records of the water system may be supplemented as needed by the records of a similar water system acceptable to either the Department or a qualified registered engineer.

(b) When the existing records of the water system are inadequate to determine these values and no records of a similar water system can be found to supplement the existing records, the maximum day demand, the needed source capacity and the needed storage volume for typical residential and general commercial areas (without provisions for fire flow) shall be determined as follows:

(1) Determine the maximum day demand (Qo) from Chart 1 or Chart 2.

(2) When the total capacity of the existing sources equals the maximum day demand (Qo), the needed storage volume (Vo) to meet peak demand during the day shall be determined from Chart 3 or Chart 4.

(3) When the total storage volume of the existing reservoirs (V) is less than the needed storage volume (Vo), the existing sources shall be supplemented so that the needed source capacity (Q) is met. For a metered water system, $Q = Qo\ (2.5-1.5V/Vo)$ or for a flat rate water system, $Q = Qo\ (2-V/Vo)$.

(c) The needed source capacity and needed storage volume determined under (b) may be modified, with the approval of the Department, to reflect local conditions such as climate, community type and kinds of users. Unless the Department's written approval is obtained, the needed source capacity shall not be less than the maximum day demand.

(d) The data used and the calculation made by the water supplier to determine whether sufficient water is available to accommodate additions to the systems must be kept and are subject to the Department review and approval at its discretion.

NOTE: This publication is meant to be an aid to the staff of the CDHS Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law. Refer to the published codes whenever specific citations are required.

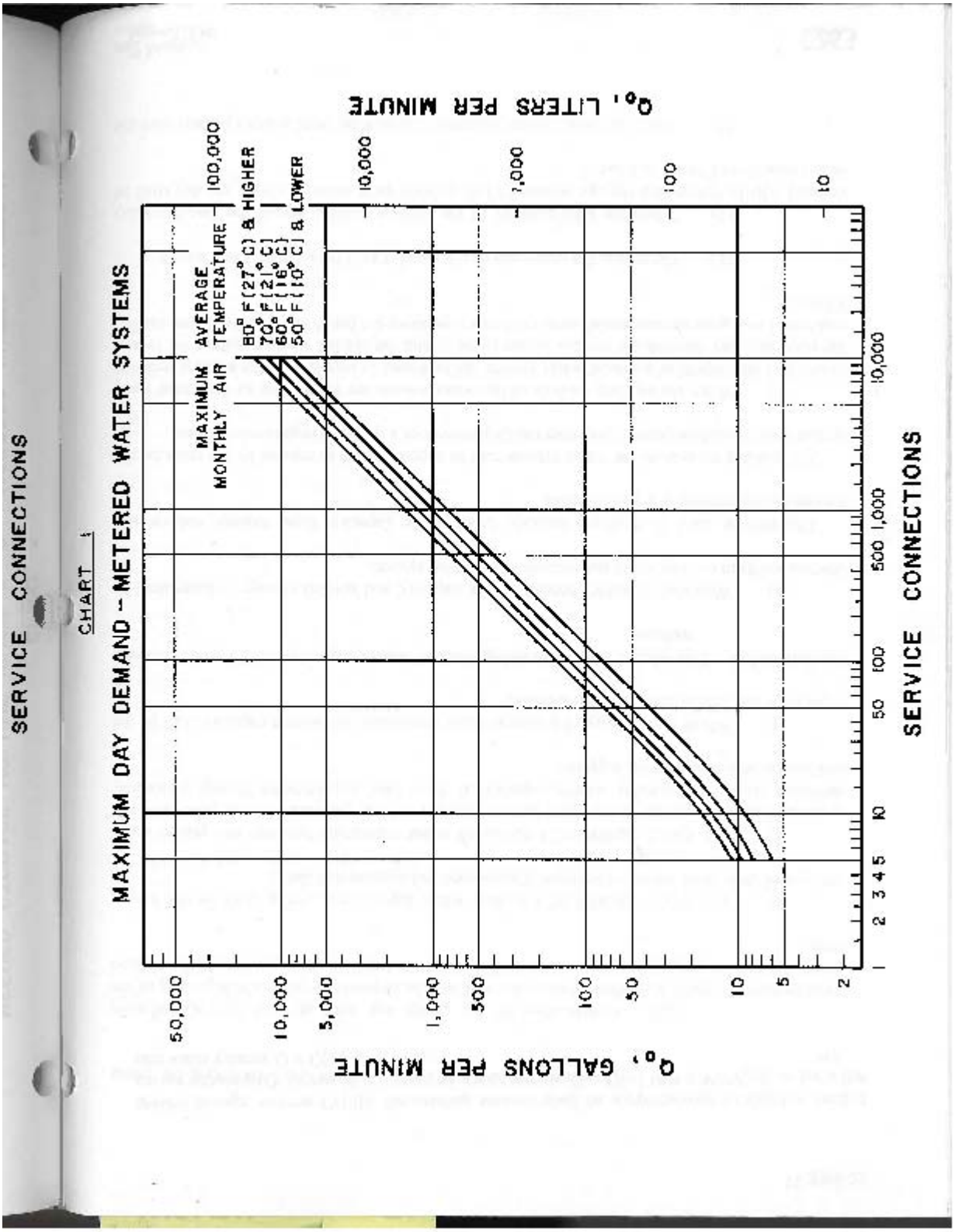

CHART 2

MAXIMUM DAY DEMAND - FLAT RATE WATER SYSTEMS

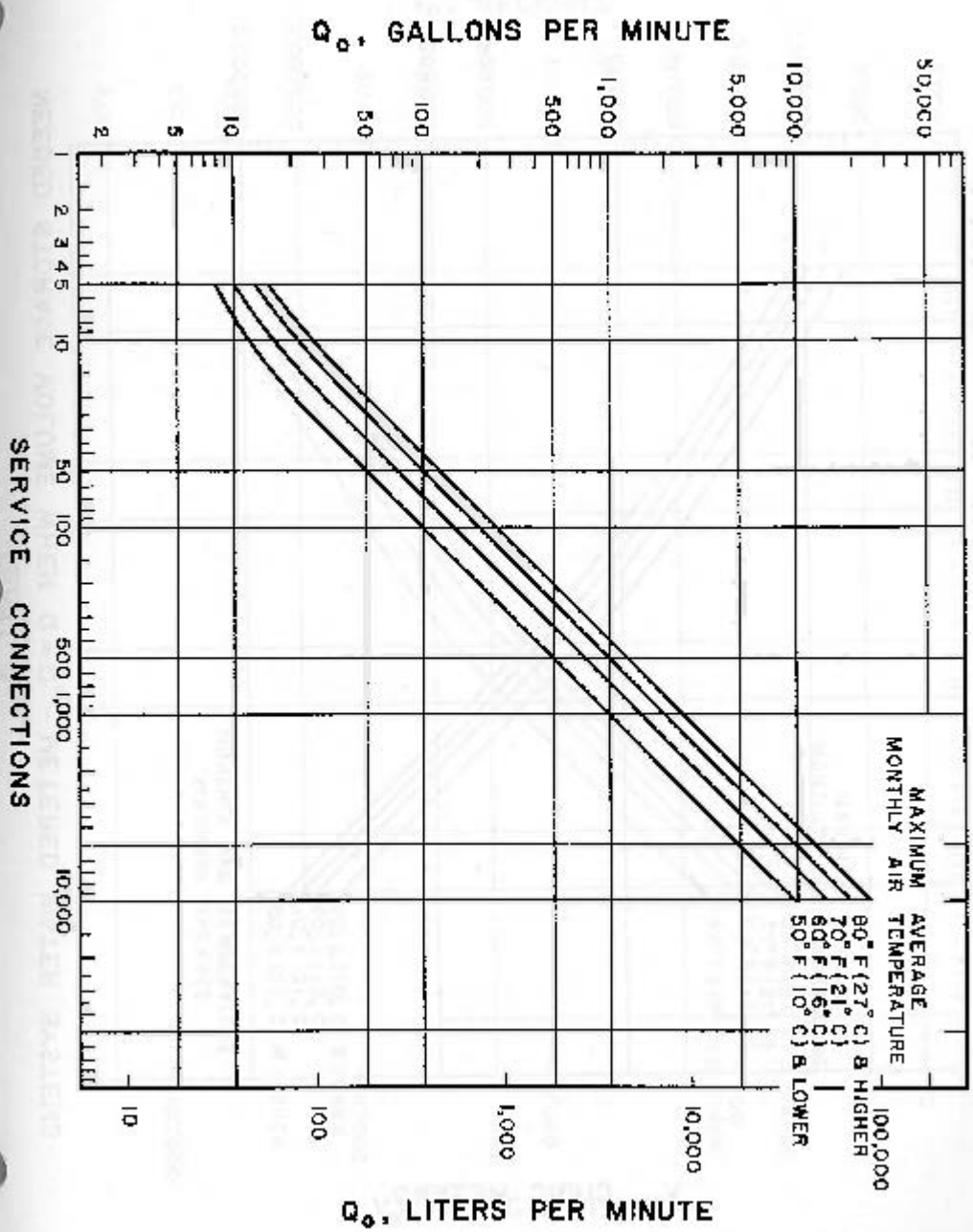

CHART 1

NOTE: This publication is meant to be an aid to the staff of the CDHS Drinking Water Program and cannot be relied upon by the regulated community as the State of California's representation of the law. The published codes are the only official representation of the law. Refer to the published codes whenever specific citations are required.

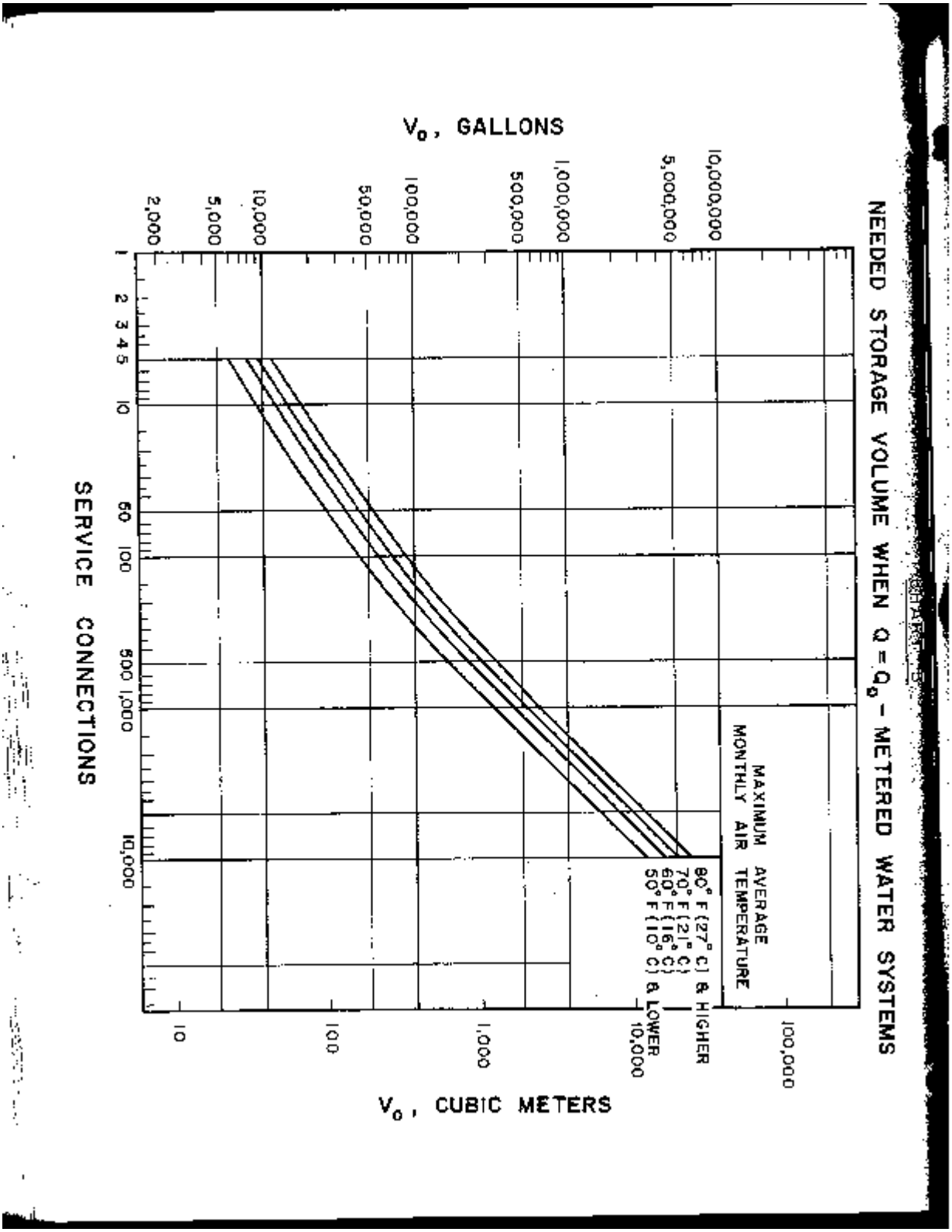

CHART 4

NEEDED STORAGE VOLUME WHEN $Q = Q_0$ - FLAT RATE WATER SYSTEMS

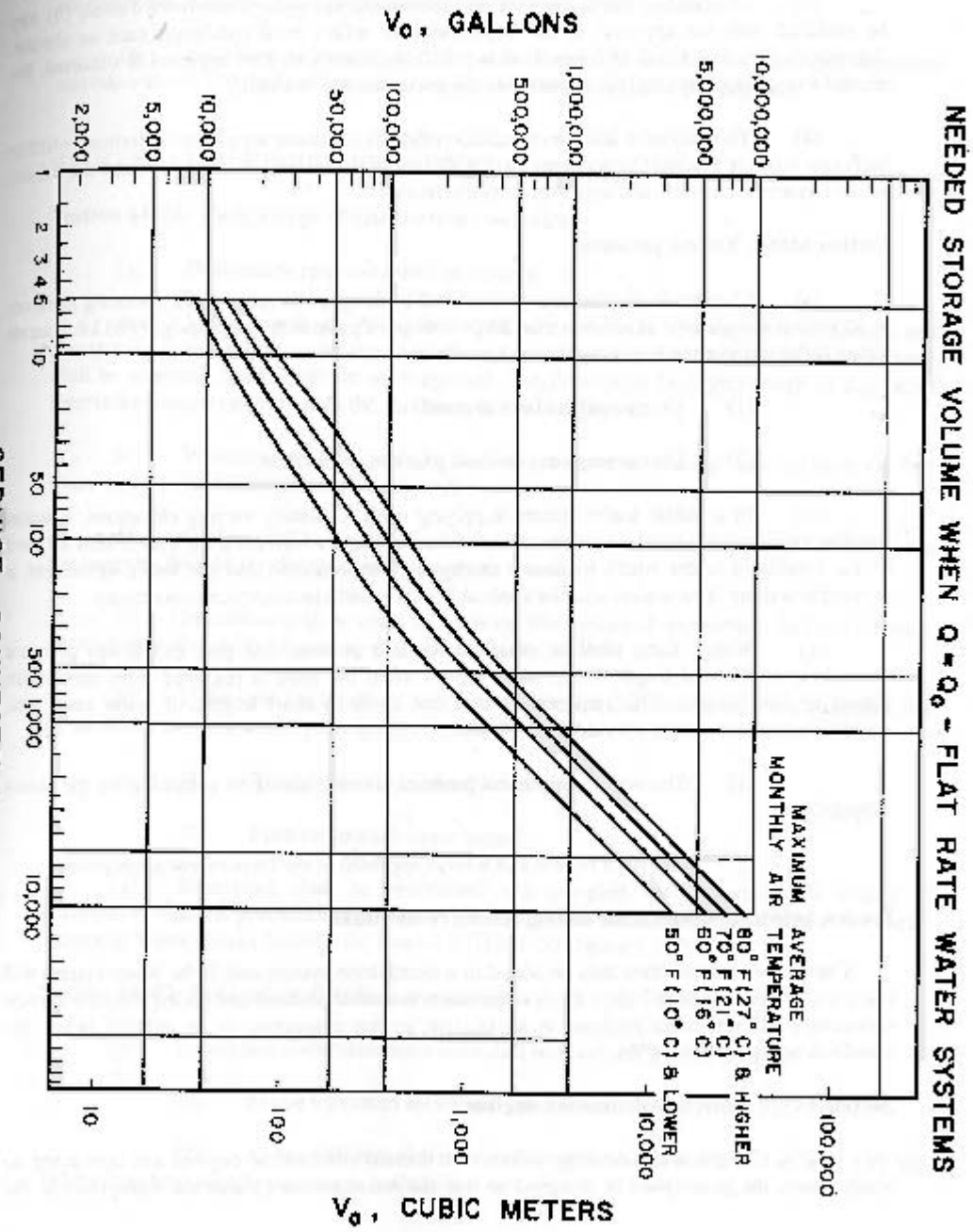

CHART 3

NEEDED STORAGE VOLUME WHEN $Q = Q_0$ - METERED WATER SYSTEMS

§64566. System Pressure.

(a) Changes in distribution systems shall be designed to maintain an operating pressure at all service connections of not less than 20 pounds per square inch gauge (psig) (140 kiloPascals gauge (kPag)) under the following demand conditions:

(1) User maximum hour demand.

(2) User average day demand plus design fire flow.

(b) In a public water system supplying users at widely varying elevations, a water supplier may furnish a service to a user which does not comply with (a) if the user is fully advised of the conditions under which minimum service may be expected and the user's agreement is secured in writing. This waiver shall be applicable only to individual service connections.

(c) Water mains shall be designed to have at least five psig (35 kPag) pressure throughout any buried length of the main except when the main is removed from service for repairs or maintenance. This requirement shall not apply to short lengths of water main near reservoir inlets and outlets provided:

(1) The water main is on premises owned, leased or controlled by the water supplier; or

(2) The prior review and written approval of the Department is obtained.

§64568. Conditions for Adding Service Connections.

A new service connection may be added to a distribution system only if the water system will comply with Section 64562 after the new service connection is added and adding the new service connection will not cause pressure at an existing service connection to be reduced below the standards set in Section 64566.

§64570. Internal Combustion Engines.

(a) Where water cooling jackets for internal combustion engines are connected to water mains, the jacket shall be designed so that the water pressure inside the water main at the cooling jacket will at all times be greater than the engine coolant pressure.

(b) Backflow protection of the public water system shall be provided wherever makeup water is supplied to the cooling system of an internal combustion engine.

Article 3. Distribution Reservoirs

§64600. Basic Design of Distribution Reservoirs.

(a) Distribution reservoirs shall be covered.

(b) Vents, overflows, drain outlets and other reservoir openings shall be located and constructed to protect the water stored in the reservoir from contamination. Vents and

overflows shall be screened. Vents shall not open upward. Overflows shall be large enough to dispose of reservoir overflow rates equal to the maximum reservoir filling rate.

(c) Provisions shall be made to facilitate removal of floating material from the free water surface and for dewatering the reservoir.

(d) Outlets shall be designed and constructed to minimize movement of sediment from the reservoir floor to the distribution system water mains.

(e) Provisions shall be made for isolating reservoirs and appurtenant facilities from the distribution system without causing violation of Section 64566.

(f) Unless the Department's approval is obtained, distribution reservoir sites shall not be used for nonwater works purposes that would:

(1) Result in unrestricted public access.

(2) Create a contamination hazard.

(g) Reservoirs shall be disinfected and sampled for bacteriological quality in accordance with the procedures described in "Methods for Disinfecting Tanks and Reservoirs," American Water Works Association Journal, 71(1):49-50 (January 1979).

§64602. Subsurface Distribution Reservoirs.

(a) Subsurface distribution reservoirs shall be lined and shall be located:

(1) Above maximum anticipated ground water level.

(2) At least 50 feet (15 meters) from the nearest sewer and at least 150 feet (45 meters) from all other sewerage facilities.

(b) The land adjacent to a subsurface distribution reservoir shall be graded to route surface water away from the reservoir.

§64604. Corrosion Protection.

Paints or other protective coatings shall comply with AWWA Standard D102-78.

Article 4. Pumping Stations

§64612. Water Sealed Pumps.

Seal water for water sealed pumps shall meet the water quality requirements of the Domestic Water Quality and Monitoring Regulations, Title 22, California Administrative Code, Chapter 15. Adequate drainage shall be provided for disposal of used seal water.

Article 5. Water Mains and Appurtenances

§64622. Water Main Materials.

(a) Water main materials shall meet the applicable standards listed in Table I.

(b) Cast iron and ductile iron pipe shall be cement mortar lined in accordance with AWWA Standard C104/A21.4-80.

(c) Steel pipe shall be protected from internal and external corrosion. Table II lists various acceptable protective coatings and linings with appropriate standards.

Table I
Material Standards

Pipe Material	*Standard*
Abestos-Cement	AWWA C400-80 or C402-77
Cast Iron	AWWA C106-75
Ductile Iron	AWWA C151/A21.51-81
Steel	AWWA C200-80
Copper	AWWA C800-66
Concrete	AWWA C300-82, C301-79, C302-74 or C303-78
Polybutylene	AWWA C902-78
Polyethylene	AWWA C901-78
Polyvinyl Chloride	AWWA C900-81
Glass Reinforced Thermosetting Resin	AWWA C950-81

Table II
Steel Pipe Coatings and Linings

Type of Coating or Lining	*Standard*
Cement Mortar Coating or Lining	AWWA C205-80 or Federal Specification SS-P-385a
Coal Tar Coating, Lining or Wrapping	AWWA C203-78
Asphalt Mastic Coating	Asphalt Institute M-2 CS-96
Extruded Plastic Coating	Federal Specification L-C-530B (1972)
Rubber-Alkyd Paint Coating	AWWA C204-75
Cold Applied Tape Coating	AWWA C209-76
Coal Tar-Epoxy Coating	AWWA C210-78
Asphalt Coating and Wrapping	Standard Specifications for Public Works Construction (1973), Section 207-10.4.4

§64624. Water Main Selection and Installation.

(a) Steel pipe shall be selected and installed in accordance with American Water Works Association (AWWA) Manual M-11 (1964), "Steel Pipe--Design and Installation." The design shall comply with Sections 6.1 and 6.2 of the manual, except that the minimum design pressure shall be at least the maximum anticipated system pressure, but in no case less than 150 psig (1,030 kPag).

(b) Asbestos-cement, cast iron and ductile iron pipe shall be selected and installed in accordance with the standards listed in Table III.

(c) Polyvinyl chloride pipe shall be selected and installed in accordance with Appendix A of AWWA Standard C900-81.

(d) Polybutylene pipe shall be selected and installed in accordance with Appendix A of AWWA Standard C902-81.

(e) Polyethylene pipe shall be selected and installed in accordance with Appendix A of AWWA Standard C901-81.

(f) Plastic pipe shall not be used in areas subject to contamination by petroleum distillates.

Table III
Pipe Selection and Installation Standards

Type of Pipe	*Standards*
Asbestos-Cement	AWWA C401-83, C403-78 and C603-78
Cast Iron	AWWA C600-82
Ductile Iron	AWWA C150/A21.5-81 and C600-82

§64626. Layout of Water Mains.

(a) Water mains should be laid out only in segmented grids and loops and should be located within streets. Dead-end water mains shall be installed only if:

(1) Looping or gridding is impractical due to topography, geology, pressure zone boundaries, unavailability of easements or locations of users; or

(2) The main is to be extended in the near future and the planned extension will eliminate the dead-end conditions.

§64628. Minimum Water Main Diameter and Length of Run.

(a) Water mains shall have a nominal inside diameter of at least four inches (100 mm).

(b) Dead-end water mains exceeding 1,000 feet (300 meters) in length shall be constructed of pipe with a nominal inside diameter of at least 6 inches (150 mm).

(c) Dead-end water mains exceeding 2,000 feet (600 meters) in length shall be constructed of pipe with a nominal inside diameter of at least 8 inches (200 mm).

(d) The requirements of (a), (b) and (c) shall not apply to water main installations meeting one of the following criteria:

(1) The installation is designed under the direction of a qualified registered engineer to meet the requirements of Section 64566.

(2) The installation is approved by the Department prior to construction.

§64630. Water Main Installation.

(a) Water mains shall be installed below the frost line or shall otherwise be protected to prevent freezing.

(b) Water mains shall not have less than 30 inches (0.75 meters) of cover over the top of the pipe except where necessary to avoid underground obstructions or rocky conditions.

(c) Water mains shall be installed at least:

(1) Ten feet (3 meters) horizontally from and 1 foot (0.3 meters) higher than sanitary sewers located parallel to the main.

(2) One foot (0.3 meters) higher than sanitary sewers crossing the main.

(3) Ten feet (3 meters), and preferably 25 feet (7.5 meters), horizontally from sewage leach fields, cesspools, seepage pits and septic tanks.

(d) Separation distances specified in (c) shall be measured from the nearest edges of the facilities.

(e) Where the requirements of (c) and (d) cannot be met due to topography, inadequate right-of-way or easements or conflicts with other provisions of these regulations, lesser separation is permissible if:

(1) The water main and the sewer are located as far apart as feasible within the conditions listed above.

(2) The water main and the sewer are not installed within the same trench.

(3) The water main is appropriately constructed to prevent contamination of the water in the main by sewer leakage.

(f) Water mains shall be disinfected according to AWWA Standard C601-81 before being placed in service.

(g) Installation of water mains near the following sources of potential contamination shall be subject to written approval by the Department on a case-by-case basis:

(1) Storage ponds or land disposal sites for waste water or industrial process water containing toxic materials or pathogenic organisms.

(2) Solid waste disposal sites.

(3) Facilities such as storage tanks and pipelines where malfunction of the facility would subject the water in the main to toxic or pathogenic contamination.

§64632. Water Main Valve Locations.

Sufficient valves shall be provided on water mains to minimize inconvenience and sanitary hazards during repairs. In general, valves on water mains of 12 inches (300 mm)

and smaller diameter should be located such that water main lengths of not more than 1,000 feet (300 meters) can be isolated by valve closures.

§64634. Water Main Valve Construction Standards.

(a) Water main valves of the types listed in Table IV shall conform to the standards shown in Table IV.

(b) A valve box shall be installed over each valve stem to aid in locating and operating the valve.

Table IV
Water Main Valve Construction Standards

Type of Valve	*Construction Standard*
Gate Valve	AWWA C550-80
Butterfly Valve	AWWA C504-80
Ball Valve	AWWA C507-73
Swing Check Valve	AWWA C508-82

§64636. Air and Vacuum Relief and Air Release Valves.

(a) Vent openings for air and vacuum relief and air release valves shall be:

(1) Extended at least one foot (0.3 meters) above grade and above maximum recorded high water.

(2) Provided with a screened, downward facing vent opening.

(b) Where the requirements of (a) (1) cannot be practicably met, vent openings may be located in a subsurface chamber or pit under the following conditions:

(1) The pit is adequately drained.

(2) The pit drain is not connected by pipe or other closed conduit to a sewer or storm drain without an air gap separation.

§64638. Water Main Joints.

Joints and appurtenances shall safely withstand the same working pressures for which the water main is designed. Jute shall not be used as a backup gasket material.

§64640. Fire Hydrants.

Fire hydrant laterals shall be provided with shutoff valves.

§64642. Flushing Valves and Blowoffs.

(a) A flushing valve or blowoff shall be installed at the end of each dead-end water main where stagnant conditions are likely to develop.

(b) Flushing valves and blowoffs shall be capable of establishing the minimum continuous flushing flow in the main indicated by Table V.

(c) Flushing valves and blowoffs shall not discharge to a sewer without an air gap separation.

Table V
Minimum Water Main Flushing Flow

Nominal Inside Diameter		*Minimum Flushing Flow*	
Inches	*Millimeters*	*Gallons/Milnute*	*Liters/Second*
2	50	25	1.5
3	75	50	3.4
4	100	100	6.3
6	150	225	14
8	200	400	25
10	250	600	38

§64644. Service Connection Pipe.
Service connection pipe and fittings shall be designed for cold water working pressures of not less than 150 psig (1,030 kPag). Copper tubing shall be commercial designation type K or L. Plastic tubing and fittings shall be products tested and certified as suitable for use in potable water piping systems by the National Sanitation Foundation Testing Laboratory, the Canadian Standards Association Testing Laboratory or another testing agency acceptable to the Department.

CHAPTER 17. SURFACE WATER TREATMENT

Article 1. General Requirements and Definitions

§64650. General Requirements.

(a) For a supplier using an approved surface water, as defined in section 64651.10, this chapter establishes treatment techniques in lieu of maximum contaminant levels for turbidity and the following microbial contaminants: Giardia lamblia (cysts), viruses, heterotrophic plate count bacteria, and Legionella.

(b) Each supplier using an approved surface water shall provide multibarrier treatment necessary to reliably protect users from the adverse health effects of microbiological contaminants and to comply with the requirements and performance standards prescribed in this chapter. A supplier that meets the requirements of section 64652.5 and wishes to not be required to provide multibarrier treatment shall submit an application to the Department. That application shall consist of comprehensive documentation that either demonstrates current compliance with the requirements in section 64652.5 or demonstrates that the water system will be in compliance within fifteen months from application submittal. Within 30 days, the Department will review the application and inform the applicant in writing that the application is complete and accepted for filing, or that the application is deficient and what specific information is required. Within 90 days from the date the application is accepted for filing, the

Department will complete its review of the documentation, determine whether to approve the application, and notify the water supplier. If at any time the Department determines that a water supplier is not in compliance with the requirements of this chapter, the Department will notify the supplier of that determination within 30 days of its being made.

(c) Except as provided for existing treatment plants in section 64652(c), within 90 days from the date of notification by the Department pursuant to subsection (b), the supplier shall submit for Department approval a plan and schedule to modify its system to meet the requirements of this chapter.

(d) If the supplier disagrees with the Department's notification specified in subsection (b), then the supplier shall submit reasons for its disagreement within 30 days from the receipt of the notification. The Department shall notify the supplier of its final determination in writing within 30 days of receipt of the supplier's reasons for disagreement. If the Department's final determination is that the supplier does not meet the requirements of this chapter, then the supplier shall comply with provisions of subsection (c) within 90 days of receipt of the Department's final determination.

§64651.10. Approved Surface Water.
"Approved surface water" means a surface water or groundwater under the direct influence of surface water that has received permit approval from the Department in accordance with sections 4011 through 4016 of the Health and Safety Code.

§64651.16. Coagulant Chemical.
"Coagulant chemical" means a floc-forming agent that has been demonstrated to provide coagulation.

§64651.20. Coagulation.
"Coagulation" means a process using coagulant chemicals and rapid mixing, by which colloidal and suspended material are destabilized and agglomerated into settleable and/or filterable flocs.

§64651.23. Conventional Filtration Treatment.
"Conventional filtration treatment" means a series of treatment processes which includes coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal.

§64651.26. Diatomaceous Earth Filtration.
"Diatomaceous earth filtration" means a process resulting in particulate removal in which a precoat cake of graded diatomaceous earth filter media is deposited on a support membrane (septum) and, while the water is being filtered by passing through the cake on the septum, additional filter media known as body feed is continuously added to the feed water to maintain the permeability of the filter cake.

§64651.30. Direct Filtration Treatment.
"Direct filtration treatment" means a series of processes including coagulation, flocculation, and filtration but excluding sedimentation.

§64651.32. Disinfectant Contact Time.
"Disinfectant contact time" means the time in minutes that it takes for water to move from the point of disinfectant application or a previous point of disinfectant residual measurement to a point before or at the point where residual disinfectant concentration is measured. Disinfectant contact time in pipelines is calculated by dividing the internal volume of the pipe by the flow rate through the pipe. Disinfectant contact time within mixing basins and storage reservoirs is determined by tracer studies or an equivalent demonstration to the Department.

§64651.33. Disinfection.
"Disinfection" means a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents.

§64651.36. Engineering Report.
"Engineering report" means a water treatment technical report prepared by a qualified engineer.

§64651.40. Filter-To-Waste.
"Filter-to-waste" means a provision in a filtration process to allow the first filtered water, after backwashing a filter, to be wasted or reclaimed.

§64651.43. Filtration.
"Filtration" means a process for removing particulate matter from water by passage through porous media.

§64651.46. Flocculation.
"Flocculation" means a process to enhance agglomeration or collection of smaller floc particles into larger, more easily settleable or filterable particles through gentle stirring by hydraulic or mechanical means.

§64651.50. Groundwater Under the Direct Influence of Surface Water.
"Groundwater under the direct influence of surface water" means any water beneath the surface of the ground with significant occurrence of insects or other macroorganisms, algae or large diameter pathogens such as Giardia lamblia, or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity or pH which closely correlate to climatological or surface water conditions.

§64651.53. Legionella.
"Legionella" means a genus of bacteria, some species of which have caused a type or pneumonia called Legionnaires disease.

§64651.56. Multibarrier Treatment.
"Multibarrier treatment" means a series of water treatment processes that provide for both removal and inactivation of waterborne pathogens.

§64651.60. NTU (Nephelometric Turbidity Unit).
"Nephelometric Turbidity Unit (NTU)" means a measurement of the turbidity of water as determined by the ratio of the intensity of light scattered by the sample to the intensity of incident light, using instrumentation and methods as set forth in "Standard Methods for the Examination of Water and Wastewater," 1985, American Public Health Association, et al., 16th edition, pages 134-136.

§64651.63. Pressure Filter.
"Pressure filter" means a pressurized vessel containing properly sized and graded granular media.

§64651.66. Qualified Engineer.
"Qualified engineer" means a Civil Engineer, registered in the State of California, with 3 years experience in water treatment design, construction, operation, and watershed evaluations.

§64651.70. Residual Disinfectant Concentration.
"Residual disinfectant concentration" means the concentration of the disinfectant in milligrams per liter (mg/l) in a representative sample of water.

§64651.73. Sedimentation.
"Sedimentation" means a process for removal of settleable solids before filtration by gravity or separation.

§64651.76. Slow Sand Filtration.
"Slow sand filtration" means a process involving passage of raw water through a bed of sand at rates not to exceed 0.10 gallons per minute per square foot resulting in substantial particulate removal by physical and biological mechanisms.

§64651.80. Supplier.
"Supplier," for the purpose of this chapter, means the owner or operator of a water system for the provision to the public of piped water for human consumption, provided such system has at least 15 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

§64651.83. Surface Water.
"Surface water" means all water open to the atmosphere and subject to surface runoff. For purposes of this chapter, water runoff originating from the lined walls and other man-made appurtenant structures of treated water distribution reservoirs, is excluded from the definition of surface water.

§64651.86. Turbidity Level.
"Turbidity level" means the value in NTU obtained by measuring the turbidity of a representative grab sample of water at a specified regular interval of time. If continuous turbidity monitoring is utilized, the turbidity level is the discrete turbidity value at a given time.

§64651.90. Virus.
"Virus" means a virus of fecal origin which is infectious to humans by waterborne transmissions.

§64651.91. Waterborne Microbial Disease Outbreak.
"Waterborne microbial disease outbreak" means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a public water system which is deficient in treatment, as determined by a County Health Officer or the Department.

§64651.93. Watershed.
"Watershed" means the area contained in a drainage basin which is tributary to a water supply diversion point.

Article 2. Treatment Requirements, Watershed Protection Requirements, and Performance Standards

§64652. Treatment Requirements and Compliance Options.

(a) Each supplier using an approved surface water shall provide multibarrier treatment that meets the requirements of this chapter and reliably ensures at least:

(1) A total of 99.9 percent reduction of Giardia cysts through filtration and disinfection; and

(2) A total of 99.99 percent reduction or viruses through filtration and disinfection.

(b) Suppliers meeting the requirements of section 64654 in combination with either section 64652.5 or 64653 shall be deemed to be in compliance with the minimum reduction requirements specified in section 64652(a).

(c) For treatment plants existing as of June 13, 1990, which do not consist of the approved technologies specified in section 64653(a), or are not in compliance with the design criteria specified in section 64658, the supplier shall submit a report demonstrating that the plant can be operated to reliably produce water meeting the performance requirements of sections 64653 and 64654. This demonstration shall be a presentation and analysis of the latest 12 months of operating data, and special studies conducted to test the performance of the plant under adverse water quality conditions or other means. The supplier shall submit the required report within 15 months of being notified by the Department pursuant to section 64650(b) that their plant does not consist of the approved technologies.

(d) No variances from the requirements in this section are permitted.

§64652.5. Criteria for Avoiding Filtration.

(a) A public water system that uses an approved surface water shall meet all of the requirements of this section to avoid the necessity of providing filtration. Within 18 months of the failure of a system using an approved surface water to meet any one of the requirements of Subsections (b) through (l), the system shall have installed filtration and meet the requirements for filtered systems specified in sections 64653, 64658, 64659, 64660, and 64661.

(b) The approved surface water quality shall be monitored downstream of all surface water and groundwater under the influence of surface water contributions and upstream of the first or only point of disinfectant application, as follows:

(1) For fecal or total coliform density at the following minimum frequency each week:

System size (persons served)	*Samples/week*
<UN-> 500	1
501-3,300	2*
3,301-10,000	3*
10,001-25,000	4*
> 25,000	5*

*Shall be taken on separate days.

(2) For fecal or total coliform density, once every day the turbidity of the source water exceeds 1 NTU unless the Department determines that the system, for logistical reasons outside the system's control, is unable to have the sample analyzed within 30 hours of collection. If collected, these samples count toward the weekly coliform sampling requirement.

(3) For turbidity at a minimum frequency of once every four hours. A supplier may substitute continuous turbidity monitoring for grab sample monitoring if, at regular intervals, it validates the accuracy of the continuous measurement using a protocol approved by the Department.

(c) The approved surface water quality monitored pursuant to Subsection (b) shall meet the following criteria:

(1) The fecal coliform concentration shall be equal to or less than 20/100 ml, or the total coliform concentration shall be equal to or less than 100/100 ml, in representative samples of the approved surface water in at least 90 percent of the measurements made for the six previous months that the system served unfiltered approved surface water to the public on an ongoing basis. If a system measures both fecal

and total coliforms, the fecal coliform criterion, not the total coliform criterion, in this paragraph shall be met.

(2) The turbidity level shall not exceed 5 NTU in representative samples of the approved surface water unless:

(A) The Department determines that any such event was caused by circumstances that were unusual and unpredictable; and

(B) As a result of any such event, there have not been more than two events in the past 12 months the system served unfiltered approved surface water to the public, or more than five events in the past 120 months the system served unfiltered approved surface water to the public, in which the turbidity level exceeded 5 NTU. An "event" is one day or a series of consecutive days during which at least one turbidity measurement each day exceeds 5 NTU.

(d) Water quality information collected pursuant to subsection (a) shall be reported to the Department in conformance with the requirements of 40 CFR section 141.75(a)(1) (54 Fed. Reg. 27535, June 29, 1989).

(e) The supplier shall maintain a watershed control program which minimizes the potential for contamination by Giardia cysts and viruses in the source water. The adequacy of a program to limit potential contamination by Giardia cysts and viruses shall be determined by: the comprehensiveness of the watershed review; the effectiveness of the supplier's program to monitor and control detrimental activities occurring in the watershed; and the extent to which the water system has maximized land ownership and/or controlled land use within the watershed. At a minimum, the watershed control program shall:

(1) Characterize the watershed hydrology and land ownership;

(2) Identify watershed characteristics and activities which may have an adverse effect on water quality;

(3) Monitor the occurrence of activities which may have an adverse effect on water quality. The supplier shall demonstrate through ownership and/or written agreements with landowners within the watershed that it can control all human activities which may have an adverse impact on the microbiological quality of the water. The supplier shall submit an annual report to the Department that identifies any special concerns about the watershed and how they are being handled; describes activities in the watershed that affect water quality; and projects what adverse activities are expected to occur in the future and how the public water system expects to address them; and

(4) Monitor the presence of Giardia cysts in the approved surface water whenever agricultural grazing, water oriented recreation, or point source domestic wastewater discharges occur on the watershed. At a minimum the monitoring shall measure the Giardia cyst concentration monthly at a point immediately prior to the first or only point of disinfectant application. The monitoring results shall be included in an annual report to the Department. This monitoring requirement may be waived after one year for suppliers serving fewer than 500 persons when the monitoring results indicate a mean Giardia cyst concentration of 1 cyst per 100 litres or less.

(f) The water system shall be subject to an annual on-site inspection to assess the watershed control program and disinfection treatment process. Either the Department or a party approved by the Department shall conduct the on-site inspection. The inspection shall be conducted by competent individuals who have a sound understanding of public health principles and waterborne diseases, such as sanitary engineers, civil engineers, environmental health specialists, or technicians who have experience and knowledge about the operation and maintenance of a public water system. A report of the on-site inspection summarizing all findings shall be prepared every calendar year and submitted to the Department, if not conducted by the Department, by December 31 of that year. The on-site inspection shall be comprehensive to enable the Department to determine whether the watershed control program and disinfection treatment process are adequately designed and maintained. The on-site inspection shall include:

(1) A review of the effectiveness of the watershed control program;

(2) A review of the physical condition of the source intake and how well it is protected;

(3) A review of the supplier's equipment maintenance program to ensure there is low probability for failure of the disinfection process;

(4) An inspection of the disinfection equipment for physical deterioration;

(5) A review of operating procedures;

(6) A review of data records to ensure that all required tests are being conducted and recorded and disinfection is effectively practiced; and

(7) Identification of any improvements which are needed in the equipment, system maintenance and operation, or data collection.

(g) The water system shall not have been identified as a source of a waterborne microbial disease outbreak, or if it has been so identified, the system shall have been modified sufficiently to prevent another such occurrence, as determined by the Department.

(h) The water system shall comply with the total coliform maximum contaminant level (MCL) specified in 22 CCR section 64426.1 at least 11 of the 12 previous months that the system served water to the public on an ongoing basis, unless the Department determines that failure to meet this requirement was not caused by the unfiltered approved surface water.

(i) The water system shall comply with the requirements for trihalomethanes specified in 22 CCR section 64439 unless the Department determines that failure to meet this requirement was not caused by a deficiency in treatment of the unfiltered approved surface water.

(j) The supplier shall provide to the Department an annual report, by December 31st of each year, which summarizes its compliance with all the watershed control program requirements.

(k) The water system shall meet the following special disinfection requirements:

(1) The water system shall not fail to provide disinfection treatment sufficient to ensure at least a 99.9 percent inactivation of Giardia cysts and a 99.99 percent inactivation of viruses for more than one day in any month the water system served unfiltered approved surface water. The means used to demonstrate the required percent inactivation with disinfection shall be as identified in 40 CFR sections 141.72(a)(1), and 141.74(b)(3) and (b)(4). Disinfection information collected pursuant to this subsection shall be reported to the Department in conformance with the requirements of 40 CFR section 141.75(a)(2). The necessity to install filtration as a result of a failure to meet the requirements in subsection (c) will not apply if:

(A) Either the supplier meets the requirements of subsection (c) at least 11 of the 12 previous months that the system served unfiltered approved surface water to the public on an ongoing basis, or

(B) The system fails to meet the requirements of subsection (c) during 2 of the 12 previous months that the system served unfiltered approved surface water to the public, and

(C) The Department determines that failure to meet the requirements in subsection (c) for at least one of these months was caused by circumstances that were unusual and unpredictable.

(2) The disinfection system shall have either:

(A) Redundant components, including an auxiliary power supply with automatic start-up and alarm to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system; or

(B) Automatic shut-off of delivery of water to the distribution system whenever there is less than 0.2 mg/l of residual disinfectant concentration in the water.

(3) The water system shall meet the requirements of section 64654(b)(1) at all times the system serves unfiltered approved surface water to the public unless the Department determines that any such failure was caused by circumstances that were unusual and unpredictable.

(4) The water system shall meet the requirements of section 64654(b)(2) on an ongoing basis unless the Department determines that failure to meet these requirements was not caused by a deficiency in treatment of the unfiltered approved surface water.

(l) Whenever the monitoring of the quality of the approved surface water indicates the turbidity exceeds 5.0 NTU, or the fecal coliform level exceeds 20/100 mL or the total coliform concentration exceeds 100/100 mL in 10 percent or more of the samples collected in the previous six months during which the system served unfiltered approved surface water to the public on an ongoing basis, the source shall be removed from service. The source may be returned to service when monitoring subsequent to removing the source from service demonstrates that the turbidity is less than or equal to 5.0 NTU and the fecal coliform level is less than or equal to 20/100 mL or the total coliform level is less than or equal to 100/100 mL for two consecutive days, and Giardia monitoring results indicate 1 cyst per 100 liters or less. If a system measures both fecal and total coliforms, the fecal coliform criterion, not the total coliform criterion, in this subsection shall be met.

§64653. Filtration.

(a) All approved surface water utilized by a supplier shall be treated using one of the following filtration technologies unless an alternative process has been approved by the Department pursuant to subsections (f), (g) and (h):

(1) Conventional filtration treatment
(2) Direct filtration treatment
(3) Diatomaceous earth filtration
(4) Slow sand filtration

(b) Conventional filtration treatment shall be deemed to be capable of achieving at least 99.7 percent removal of Giardia cysts and 99 percent removal of viruses when in compliance with operation criteria specified in section 64660 and performance standards specified in subsection (c). Direct filtration treatment, diatomaceous earth filtration and slow sand filtration shall be deemed to be capable of achieving at least 99 percent removal of Giardia cysts and a 90 percent removal of viruses when in compliance with operation criteria specified in section 64660 and performance standards specified in subsections (c) and (d).

(c) Conventional filtration, direct filtration, or diatomaceous earth filtration shall comply with the following performance standards for each treatment plant:

(1) The turbidity level of the filtered water shall be equal to or less than 0.5 NTU in 95 percent of the measurements taken each month and shall not exceed 5.0 NTU at any time.

(2) For those suppliers using a grab sampling monitoring program the turbidity level of the filtered water shall not exceed 1.0 NTU in more than two samples taken consecutively while the plant is in operation. For those suppliers using a continuous monitoring program the turbidity level of the filtered water shall not exceed 1.0 NTU for more than eight consecutive hours while the plant is in operation.

(d) Slow sand filtration shall comply with the following performance standards for each treatment plant:

(1) The turbidity level of the filtered water shall be less than or equal to 1.0 NTU in 95 percent of the measurements taken each month. However, filtered water from the treatment plant may exceed 1.0 NTU, provided the filter effluent prior to disinfection meets the maximum contaminant level for total coliforms as specified in 22 CCR section 64426.1.

(2) The turbidity level of the filtered water shall not exceed 5.0 NTU at any time.

(e) In order to obtain approval for a higher removal efficiency than that specified in subsection (b), a water supplier shall demonstrate to the Department that the higher removal efficiency can be reliably obtained.

(f) An alternative to the filtration technologies specified in subsection (a) may be used provided that the supplier demonstrates to the Department that the alternative technology provides a minimum of 99 percent Giardia cyst removal and 90 percent virus removal for suppliers serving more than 500 persons, or 90 percent Giardia cyst removal for suppliers serving 500 or fewer persons and meets the turbidity performance standards established in subsection (d). The demonstration shall be based on the results from a prior equivalency demonstration or a testing of a full scale installation that is treating a water with similar characteristics and is exposed to similar hazards as the water proposed for treatment. A pilot plant test of the water to be treated may also be used for this demonstration if conducted with the approval of the Department. The demonstration shall be presented in an engineering report prepared by a qualified engineer.

(g) Suppliers proposing to use an alternative filtration technology may request from the Department a waiver to comply with the requirements of subsection (f) to demonstrate 90 percent virus removal. The request shall be based on a watershed sanitary survey conducted in accordance with section 64665, within 12 months of the date of the request, that demonstrates a lack of virus hazard in the watershed.

(h) The Department's approval of alternative filtration technologies, including establishment of performance standards and monitoring requirements, shall be done in accordance with the permit process specified in sections 116525 through 116550 of the Health and Safety Code.

(i) Within 60 days following the first full year of operation of a new alternative filtration treatment process approved by the Department, the supplier shall submit an engineering report prepared by a qualified engineer describing the effectiveness of the plant operation. The report shall include results of all water quality tests performed and shall evaluate compliance with established performance standards under actual operating conditions. It shall also include an assessment of problems experienced, corrective actions needed, and a schedule for providing needed improvements.

§64654. Disinfection.

(a) All approved surface water utilized by a supplier shall be provided with continuous disinfection treatment sufficient to insure that the total treatment process provides inactivation of Giardia cysts and viruses, in conjunction with the removals obtained through filtration, to meet the reduction requirements specified in section 64652(a).

(b) Disinfection treatment shall comply with the following performance standards:

(1) Water delivered to the distribution system shall not contain a disinfectant residual of less than 0.2 mg/l for more than four hours in any 24 hour period.

(2) The residual disinfectant concentrations of samples collected from the distribution system shall be detectable in at least 95 percent of the samples taken each month, during each and every two consecutive months that the system serves water to the public, except as provided in subsection (c). At any sample point in the distribution

system, the presence of heterotrophic plate count (HPC) at concentrations less than or equal to 500 colony forming units per milliliter shall be considered equivalent to a detectable disinfectant residual.

(c) Paragraph (b)(2) shall not apply to suppliers serving fewer than 500 persons provided:

(1) The system is in compliance with 17 CCR sections 7583 through 7605, and with 22 CCR sections 64566 and 64630; and

(2) The supplier has no means for having a sample transported and analyzed for HPC by a certified laboratory under the appropriate time and temperature conditions and

(3) the supplier is providing adequate disinfection in the distribution system.

(d) No exemptions from the requirement in paragraph (b)(1) are permitted.

Article 3. Monitoring Requirements

§64655. Filtration.

(a) Each supplier using an approved surface water source shall monitor the turbidity level of each raw water supply by the taking and analyzing of daily grab samples.

(b) To determine compliance with the performance standards specified in section 64653, each supplier shall determine the turbidity level of representative samples of the combined filter effluent, prior to clearwell storage, at least once every four hours that the system is in operation, except as provided in subsection (d). Monitoring shall be conducted in accord with the operation plan required by section 64661.

(c) Continuous turbidity measurements may be substituted for grab sample monitoring provided the supplier validates the accuracy of the measurements on a weekly basis.

(d) Suppliers using slow sand filtration or serving 500 or fewer persons which are in compliance with performance standards specified in section 64653, may reduce turbidity monitoring to one grab sample per day.

§64656. Disinfection.

(a) To determine compliance with disinfection inactivation requirements specified in section 64654(a), each supplier shall develop and conduct a monitoring program to measure those parameters that affect the performance of the disinfection process. This shall include but not be limited to the temperature of the disinfected water, the pH(s) of the disinfected water if chlorine is used as a disinfectant, the disinfectant contact time(s) and the residual disinfectant concentration(s) before or at the first customer. The monitoring program shall be described in the operations plan required by section 64661.

(b) To determine compliance with the performance standard specified in section 64654(b)(1), the disinfectant residual concentration of the water being delivered to the distribution system shall be measured and recorded continuously except as provided in subsection (f).

(c) To determine compliance with section 64654(b)(2), the residual disinfectant concentration must be measured at least at the same points in the distribution system and at the same time as total coliforms are sampled in accordance with 22 CCR section 64421, and described in the operations plan required by section 64661, except as provided in subsection (d).

(d) For suppliers that use both an approved surface water and a groundwater, the Department shall approve a request to take disinfectant residual samples at points other than those specified in subsection (c) provided the supplier demonstrates that such sampling points are representative of the disinfected approved surface water in the distribution system.

(e) If there is a failure of continuous disinfectant residual monitoring equipment, grab sampling every four hours may be conducted in lieu of continuous monitoring, but for no more than five working days following the failure of the equipment.

(f) Suppliers serving 3,300 or fewer persons may collect and analyze grab samples of disinfectant residual each day as shown below in lieu of the continuous monitoring specified in subsection (b), provided that any time the residual disinfectant falls below 0.2 mg/l, the supplier shall take a grab sample every four hours until the residual concentration is equal to or greater than 0.2 mg/l:

System size by population	*Samples/day*
less than or equal to 500	1
501 - 1,000	2
1,001 - 2,500	3
2,501 - 3,300	4

(g) Suppliers shall describe the location and frequency of sampling to comply with subsection (f) in the operations plan required by section 64661.

Article 4. Design Standards

§64658. New Treatment Plants.

(a) Suppliers which propose to construct new filtration and disinfection treatment facilities or to modify or make additions to existing treatment facilities which require permit approval from the Department pursuant to Health and Safety Code sections 4011

through 401614 shall submit an engineering report to the Department describing how the proposed new treatment facilities will be designed to comply with the treatment, design, performance and reliability provisions required pursuant to this chapter. Modifications requiring permit approval include those that have a significant effect on plant performance, change the plant design rating or capacity, or change a major treatment process.

(b) All new filtration and disinfection facilities shall be designed and constructed to comply with the following criteria:

(1) Achieve an average daily effluent turbidity goal of 0.2 NTU when using conventional, direct, and diatomaceous earth filtration plants.

(2) Be free of structural and sanitary hazards.

(3) Protect against contamination by backflow.

(4) Meet the capacity and pressure requirements prescribed in 22 CCR sections 64562 and 64566.

(5) Provide flow measuring and recording equipment.

(6) Take into consideration the effects of events such as earthquakes, fires, floods, freezing, and sabotage that are reasonably foreseeable.

(7) Provide reasonable access for inspection, maintenance, and monitoring of all unit processes.

(8) Provide for filter-to-waste for each filter unit or addition of coagulant chemicals to the water used for backwashing.

(9) Provide backwash rates and surface or subsurface wash facilities using air, water or a combination thereof to clean the filter after use to its original condition.

(10) Provide solids removal treatment for filter backwash water if it is recycled into the treatment process. Recycled backwash water shall be returned to the headworks of the treatment plant.

(11) Provide for the future addition of pretreatment facilities in the design of direct filtration, slow sand, or diatomaceous earth filtration plants.

(12) Provide disinfection equipment sized for the full range of flow conditions expected and capable of feeding accurately at all flow rates.

(13) Provide for treatment plant operation without frequent shutdowns and startups or rapid changes in filtration rates.

(c) Whenever a coagulation process is used, the process selection shall be based on pilot plant or laboratory scale (jar test) or equivalent results that demonstrate effectiveness of the coagulant chemicals over the full range of water quality conditions expected.

§64659. Reliability.

(a) The following reliability features shall be included in the design and construction of all new and existing surface water treatment plants:

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14 Sections 4011 through 4016 have been recodified to 116525 through 116550. OAL has been notified of this by request for a "change without regulatory effect".

(1) Alarm devices to provide warning of coagulation, filtration, and disinfection failures. All devices shall warn a person designated by the supplier as responsible for taking corrective action, or have provisions to shut the plant down until corrective action can be taken.

(2) Standby replacement equipment available to assure continuous operation and control of unit processes for coagulation, filtration and disinfection.

(3) A continuous turbidity monitoring and recording unit on the combined filter effluent prior to clearwell storage.

(4) Multiple filter units which provide redundant capacity when filters are out of service for backwash or maintenance.

(b) Alternatives to the requirements specified in section 64659(a) shall be accepted provided the water supplier demonstrates to the satisfaction of the Department that the proposed alternative will assure an equal degree of reliability.

Article 5. Operation

§64660. Operating Criteria.

(a) All treatment plants utilizing an approved surface water shall be operated by operators certified by the Department in accordance with Health and Safety Code section 106885.

(b) Filtration facilities shall be operated in accordance with the following requirements:

(1) Conventional and direct filtration plants shall be operated at flow rates not to exceed 3.0 gallons per minute per square foot (gpm/sq. ft.) for simple media filters and 6.0 gpm/sq. ft. for deep bed, dual or mixed media filters under gravity flow conditions. For pressure filters, filtration rates shall not exceed 2.0 gpm/sq. ft. for simple media filters and 3.0 gpm/sq. ft. for dual, mixed media, or deep bed filters.

(2) Slow sand filters shall be operated at filtration rates not to exceed 0.10 gallon per minute per square foot. The filter bed shall not be dewatered except for cleaning and maintenance purposes.

(3) Diatomaceous earth filters shall be operated at filtration rates not to exceed 1.0 gallon per minute per square foot.

(4) In order to obtain approval for filtration rates higher than, but not more than twice, those specified in section 64660(b)(1), (b)(2), and (b)(3), a water supplier shall demonstrate to the Department that the filters can comply with the performance requirements of section 64653.

(5) In order to obtain approval for filtration rates greater than twice those specified in paragraphs (b)(1), (b)(2), and (b)(3), a water supplier shall demonstrate to the Department that the filters do the following:

(A) Provide a minimum of 99 percent Giardia cyst removal and 90 percent virus removal; and

(B) Meet the turbidity performance standards established in section 64653(c).

(6) Filtration rates shall be increased gradually when placing filters back into service following backwashing or any other interruption in the operation of the filter.

(7) When any individual filter in a conventional or direct filtration plant is placed back into service following backwashing or other interruption event, the filtered water turbidity of the effluent from that filter shall not exceed any of the following:

(A) 2.0 NTU at any time during the first four hours of filter operation following all interruption events.

(B) 1.0 NTU at any time during the first four hours of filter operation following at least 90 percent of the interruption events during any consecutive 12 month period.

(C) 0.5 NTU at the time that the filter has been in operation for 4 hours.

(8) Pressure filters shall be physically inspected and evaluated annually for such factors as media condition, mudball formation, and short circuiting. A written record of the inspection shall be maintained at the treatment plant.

(9) Coagulation and flocculation unit processes shall be in use at all times during which conventional and direct filtration treatment plants are in operation. The effectiveness of these processes shall be demonstrated by either at least an 80 percent reduction through the filters of the monthly average raw water turbidity or jar testing, pilot testing or other means to demonstrate that optimum coagulation is being achieved.

(10) The filtered water turbidity level from each filter unit shall be monitored with a continuous turbidity meter and recorder, or with a grab sampling program designed to identify compliance with the requiremeents of paragraph (b)(7) and approved by the Department. If this monitoring indicates that any filter unit in a conventional or direct filtration plant is not performing as required in paragraph (b)(7), the filter shall be taken out of service and inspected to determine the cause of its inadequate performance. The filter unit shall not be returned to service until deficiencies have been corrected and operations tests demonstrate that the filter unit is meeting the requirements of paragraph (b)(7).

(c) Disinfection facilities shall be operated in accordance with the following requirements:

(1) A supply of chemicals necessary to provide continuous operation of disinfection facilities shall be maintained as a reserve or demonstrated to be available.

(2) An emergency plan shall be developed prior to initiating operation of the disinfection facilities. The plan shall be implemented in the event of disinfection failure to prevent delivery to the distribution system of any undisinfected or inadequately disinfected water. The plan shall be posted in the treatment plant or other place readily accessible to the plant operator.

§64661. Operations Plan.

(a) With a permit application for a new treatment plant, suppliers shall submit for Department review and approval an operations plan for each treatment plant that treats an approved surface water. The Department shall review the operations plan to determine if it includes those items required in subsection (b). The operations plan shall be designed

to produce the optimal water quality from the treatment process. The supplier shall operate its treatment plant in accordance with the approved plan.

(b) The operations plan shall consist of a description of the utility's treatment plant performance monitoring program, unit process equipment maintenance program, operating personnel, including numbers of staff, certification levels and responsibilities; how and when each unit process is operated; laboratory procedures; procedures used to determine chemical dose rates; records; response to plant and watershed emergencies; and reliability features.

§64662. Records.

(a) The supplier shall maintain accurate and complete operation records for each treatment plant that treats an approved surface water. The records shall include but not be limited to the following:

(1) The results of all monitoring conducted in accordance with sections 64655, 64656, and 64660.

(2) Dates on which filter maintenance and inspections were performed and the results of any inspections including pressure filter evaluations required by section 64660(b)(7).

(3) Quantity of water produced, plant flow rates, filtration rates, hours of operation, and backwash rates.

(4) Dates and description of major equipment and process failures and corrective actions taken.

(b) Treatment plant records shall be retained for not less than two years, except where the Department has determined that longer retention times are necessary to complete legal actions taken under the provisions of Health and Safety Code sections 4031 through 403815.

Article 6. Reporting

§64663. Department Notification.

The supplier shall notify the Department as soon as possible, but no later than by the end of the next business day, or within 24 hours, whichever is less, by telephone or other equally rapid means whenever:

(a) The turbidity of the combined filter effluent as monitored pursuant to section 64655 exceeds 5.0 NTU at any time.

(b) More than two consecutive turbidity samples of the combined filter effluent taken every four hours pursuant to section 64655 exceed 1.0 NTU.

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15 Sections 4031 through 4038 have been recodified to 116625 through 116730. OAL has been notified of this by request for a "change without regulatory effect".

(c) There is a failure to maintain a minimum disinfectant residual of 0.2 mg/l in the water being delivered to the distribution system. The supplier shall report whether or not the disinfectant residual was restored to at least 0.2 mg/l within four hours.

(d) An event occurs which may affect the ability of the treatment plant to produce a safe, potable water including but not limited to spills of hazardous materials in the watershed and unit treatment process failures.

(e) The turbidity immediately prior to the first or only point of disinfectant application exceeds 5 NTU for suppliers avoiding filtration.

(f) The supplier discovers the occurrence of an acute infectious illness that may be potentially attributable to the water system.

§64664. Monthly Report.

(a) Each supplier with an approved surface water treatment facility shall submit a monthly report on the operation of each facility to the Department by the tenth day of the following month. The report shall be signed by the chief water treatment plant operator, plant superintendent or other person directly responsible for the operation of the water treatment plant.

(b) The report shall include the following results of turbidity monitoring of the combined filter effluent:

(1) All turbidity measurements taken during the month to determine compliance with section 64653.

(2) The number and percent of turbidity measurements taken during the month which are less than or equal to the performance standard specified for each filtration technology in section 64653, or as required for an alternative treatment process. The report shall also include the date and value of any turbidity measurements that exceed performance levels specified in section 64653.

(3) The average daily turbidity level.

(4) If the turbidity level of the filter effluent from a slow sand filter is greater than 1.0 NTU in five percent or more of the measurements taken that month, the supplier must also report the dates and results of total coliform sampling of the filter effluent prior to disinfection to demonstrate compliance with section 64653(d)(1).

(c) The report shall include the following disinfection monitoring results taken to comply with section 64654:

(1) The date and duration of each instance when the disinfectant residual in water supplied to the distribution system is less than 0.2 mg/l and when the Department was notified of the occurrence.

(2) The following information on samples taken from the distribution system to comply with section 64654(b)(2):

(A) The number of samples where the disinfectant residual is measured.

(B) The number of samples where only the heterotrophic plate count (HPC) is measured.

(C) The number of measurements with no detectable disinfectant residual and no HPC is measured.

(D) The number of measurements with no detectable disinfectant residual and HPC is greater than 500 colony forming units per milliliter.

(E) The number of measurements where only HPC is measured and is greater than 500 colony forming units per milliliter.

(F) For the current and previous month the supplier serves water to the public, the value of V in the following formula:

$$V = \left[1 - \frac{(C + D + E)}{A + B}\right] \times 100$$

Where:

V = the percent of distribution system samples with a detectable residual.

A = the value in paragraph (2)(A) of this subsection.

B = the value in paragraph (2)(B) of this subsection.

C = the value in paragraph (2)(C) of this subsection.

D = the value in paragraph (2)(D) of this subsection.

E = the value in paragraph (2)(E) of this subsection.

(3) For each day the lowest measurement of residual disinfectant concentration in mg/l in the water entering the distribution system.

(d) The report shall include a written explanation of the cause of any violation of performance standards specified in sections 64653 and 64654 and operating criteria specified in sections 64660(b)(6) and (8).

(e) The report shall include a summary of water quality complaints and reports of gastrointestinal illness received from consumers.

Article 7. Watershed Sanitary Surveys

§64665. Watershed Requirements.

(a) All suppliers shall have a sanitary survey of their watershed(s) completed at least every five years. The first survey shall be completed by January 1, 1996.

(b) A report of the survey shall be submitted to the Department not later than 60 days following completion of the survey.

(c) The survey and report shall include physical and hydrogeological description of the watershed, a summary of source water quality monitoring data, a description of activities and sources of contamination, a description of any significant changes that have occurred since the last survey which could affect the quality of the source water, a

description of watershed control and management practices, an evaluation of the system's ability to meet requirements of this chapter, and recommendations for corrective actions.

Article 8. Public Notification

§64666. Consumer Notification.

(a) For water systems that filter approved surface water, the supplier shall notify persons served by the system whenever there is a failure to comply with the treatment requirements specified in sections 64652, 64653, and 64654(a) or performance standards specified in section 64653(c)(1), (d), (h), and section 64654(b).

(b) For water systems that do not filter approved surface water, the supplier shall notify persons served by the system whenever:

(1) There is a failure to comply with sections 64652.5(b) through (k), sections 64652 and 64654(a), or section 64654(b);

(2) The turbidity level in a representative sample of the approved surface water immediately prior to the first or only point of disinfectant application exceeds 5 NTU; or

(3) The unfiltered approved surface water has been identified as a source of waterborne microbial disease outbreak.

(c) The notification required by either subsections (a) or (b) shall be given in accordance with section 64464.3(a)(2), and shall include the following mandatory language:

" The State of California Department of Health Services (DHS) sets drinking water standards and has determined the presence of microbiological contaminants are a health concern at certain levels of exposure. If water is inadequately treated, microbiological contaminants in that water may cause disease. Disease symptoms may include diarrhea, cramps, nausea, and possibly jaundice, and any associated headaches and fatigue. These symptoms, however are not just associated with disease-causing organisms in drinking water, but also may be caused by a number of factors other than your drinking water. DHS has set enforceable requirements for treating drinking water to reduce the risk of these adverse health effects. Treatment such as filtering and disinfecting the water removes or destroys microbiological contaminants. Drinking water which is treated to meet DHS requirements is associated with little to none of this risk and should be considered safe."

(d) For water systems that filter approved surface water, the supplier shall notify persons served by the system whenever there is a failure to comply with the monitoring requirements specified in sections 64655 or 64656. The notification shall be given in accordance with section 64464.6.

(e) For water systems that do not filter approved surface water, the supplier shall notify persons served by the system whenever there is a failure to comply with the

monitoring requirements specified in sections 64652.5(b), (d), or (e), or 64656. The notification shall be given in accordance with section 64464.6.

(f) If a supplier is unable to remove a source from service pursuant to section 64652.5(l), the supplier shall notify the Department immediately, and notify persons served by the system pursuant to section 64465, using the language in subsection (c).

CHAPTER 17.5. LEAD AND COPPER

Article 1. General Requirements and Definitions

§64670. General Requirements.

(a) Unless otherwise indicated, the requirements in this chapter apply to community water systems and nontransient-noncommunity water systems (hereinafter referred to as "water systems" or "systems").

(b) An action level exceedance shall not constitute a violation of this chapter.

(c) Analyses for lead, copper, pH, conductivity, calcium, alkalinity, orthophosphate, silica, and temperature shall be conducted using the methods prescribed at 40 Code of Federal Regulations, Section 141.89 [Federal Register (FR) 56 (110), 26460-26564, June 7, 1991; amended July 15, 1991 (56 FR 32113), June 29, 1992 (57 FR 28786), June 30, 1994 (59 FR 33860), and January 12, 2000 (65 FR 1250)]. Field tests shall be performed by water treatment or distribution operators certified by the Department pursuant to Section 106875 of the Health and Safety Code or by personnel trained to perform these tests by the Department, a certified laboratory, or certified operator.

(d) A new water system shall initiate compliance with this chapter within six months of distributing water to consumers. An existing system that changes size pursuant to the definitions in sections 64671.30, 64671.40 and 64671.70, shall initiate compliance with the requirements of this chapter applicable to the new size within six months.

§64671.05. Action Level.

"Action level", for the purpose of this chapter only, means the concentration of lead or copper in water that is used to determine the requirements of this chapter that a system shall meet.

§64671.08. Action Level Exceedance.

"Action level exceedance", for the purpose of this chapter only, means that the level of lead or copper is greater than the respective action level, as determined pursuant to section 64678(d) through (g).

§64671.09. Corrosion Control Treatment or CCT.

"Corrosion control treatment" or "CCT" means the corrosion control treatment that minimizes the lead and copper concentrations at users' taps without causing the water system to violate any primary drinking water standards.

§64671.10. Corrosion Inhibitor.

"Corrosion inhibitor" means a substance capable of reducing the corrosivity of water toward metal plumbing materials, especially lead and copper, by forming a protective film on the interior surface of those materials.

§64671.15. Detection Limit for Purposes of Reporting or DLR.

"Detection limit for purposes of reporting" or "DLR" means the designated minimum level at or above which any analytical finding of a contaminant in drinking water resulting from monitoring required under this chapter shall be reported to the Department.

§64671.30. Large Water System.

"Large water system", for the purpose of this chapter only, means a water system that serves more than 50,000 persons.

§64671.35. Lead Service Line.

"Lead service line" means a service line made of lead that connects the water main to the building inlet and any lead pigtail, gooseneck or other fitting which is connected to such lead line.

§64671.40. Medium-size Water System.

"Medium-size water system", for the purpose of this chapter only, means a water system that serves greater than 3,300 and less than or equal to 50,000 persons.

§64671.55. Period.

"Period", for the purpose of this chapter only, means a six-month monitoring timeframe.

§64671.65. Single-family Structure.

"Single-family structure" means a building constructed as a single-family residence that is currently used as either a residence or a place of business.

§64671.70. Small Water System.

"Small water system", for the purpose of this chapter only, means a water system that serves 3,300 persons or fewer.

§64671.75. Tap Sampling.

"Tap sampling" means sampling conducted pursuant to sections 64675 (General Requirements for Tap Sampling for Lead and Copper), 64675.5 (Tap Sampling

Frequency), and 64677 (Sampling Collection Methods for Taps) at sites selected pursuant to section 64676 (Sampling Site Selection).

§64671.80. Water Quality Parameter or WQP.
"Water quality parameter" or "WQP", for the purposes of this chapter, means a characteristic or constitutent of water, or a water treatment chemical added to water to control corrosion.

§64671.85. WQP Monitoring.
"WQP monitoring" means sampling conducted pursuant to sections 64680 (General WQP Monitoring Requirements), 64681 (Initial WQP Monitoring), and 64682 (WQP Monitoring Requirements after CCT Installation).

Article 2. Requirements According to System Size

§64673. Small and Medium-size Water System Requirements.

(a) The requirements in this section are applicable to all small and medium-size water systems.

(b) Each small and medium-size system shall conduct standard tap sampling for lead and copper pursuant to section 64675 (General Requirements for Tap Sampling for Lead and Copper). Tap sampling frequency may be reduced pursuant to section 64675.5 (Tap Sampling Frequency).

(c) A small or medium-size system with an action level exceedance shall take the following steps:

(1) Monitor WQPs beginning with the first period after the exceedance, pursuant to section 64681 (Initial WQP Monitoring).

(2) Proceed with subparagraphs (A) through (E) if a corrosion control study is required by the Department based on a review of the system's water quality, distribution system, water treatment, and system features. If such a study is required, the Department will notify the system in writing within 12 months of the action level exceedance.

(A) Complete the study, pursuant to section 64683 (Corrosion Control Study Procedure), within eighteen months of being notified of the requirement; the system will be notified of the Department's designation within six months of the study's completion;

(B) Begin installation of the CCT designated by the Department, pursuant to section 64684 (CCT Installation and Operation), within twelve months of being notified of the Department's designation;

(C) Complete CCT installation and begin operation within 24 months of the designation;

(D) Complete two periods of standard tap sampling pursuant to section 64675 (General Requirements for Tap Sampling for Lead and Copper) and two periods of WQP monitoring pursuant to section 64682 (WQP Monitoring After CCT Installation) within 36 months of the designation; and

(E) Monitor WQPs and operate in compliance with the WQP levels specified by the Department pursuant to section 64684 (CCT Installation and Operation), beginning no later than within 42 months of the designation.

(3) If the Department does not require a corrosion control study, the system shall submit to the Department, within six months of the action level exceedance, a written recommendation for CCT. The Department may require the system to conduct additional WQP monitoring to assist in the review of the CCT recommendation. The Department will designate CCT and notify the system in writing within the following timeframes; the system shall then comply with paragraphs (2)(B) through (E):

(A) For medium-size systems, within 12 months of the exceedance, and

(B) For small-size systems, within 18 months of the exceedance;

(4) Monitor source waters, pursuant to article 6 (Source Water Requirements for Action Level Exceedances) of this chapter;

(d) A small or medium-size system with an action level exceedance for lead shall:

(1) Complete a lead public education program, pursuant to article 7 (Public Education Program for Lead Action Level Exceedances) of this chapter; and

(2) Replace lead service lines, pursuant to article 8 (Lead Service Line Requirements for Action Level Exceedances) of this chapter.

(e) A small or medium-size system that is required to comply with subsections (c) or (d) may cease completing the steps whenever the system does not have an action level exceedance during each of two consecutive periods. If any such system thereafter has an exceedance during any period, the system shall:

(1) Resume completion of the applicable steps, beginning with the first step that was not previously completed. The Department may require a system to repeat steps previously completed if the Department determines that this is necessary to implement the requirements of this section, based on a review of the system's data and treatment status.

(2) Resume standard tap sampling pursuant to 64675 (General Requirements for Tap Sampling for Lead and Copper).

(3) Conduct WQP monitoring during the period in which the system exceeded the action level, pursuant to section 64682, (WQP Monitoring After CCT Installation) or 64684 (CCT Installation and Operation).

§64674. Large Water System Requirements.

(a) The requirements in this section are applicable to all large water systems.

(b) Each large system shall conduct standard tap sampling pursuant to section 64675 (General Requirements for Tap Sampling for Lead and Copper), and monitor for WQPs pursuant to section 64681 (Initial WQP Monitoring). Tap sampling frequency may be reduced pursuant to section 64675.5 (Tap Sampling Frequency).

(c) Each large system shall complete a corrosion control study, pursuant to section 64683 (Corrosion Control Study Procedure), unless it can meet one of the following criteria:

(1) The system submits the following documentation to the Department and the Department determines in writing that the system has optimized corrosion control based on its review of the submittal:

(A) The results of all test samples collected for each of the WQPs in section 64683(a)(3) (Corrosion Control Study Procedure);

(B) A report explaining the test methods used by the water system to evaluate corrosion control treatment alternatives pursuant to section 64683 (Corrosion Control Study Procedure), the results of all tests conducted, and the basis for the system's selection of CCT;

(C) A report explaining how CCT has been installed and is being operated pursuant to section 64684 (CCT Installation and Operation); and

(D) The results of tap sampling for lead and copper for two consecutive periods after corrosion control has been installed; or

(2) The system demonstrates for two consecutive periods that the difference between the 90th percentile tap sampling lead level and the highest source water monitoring result for each period is less than the reporting level for purposes of reporting (DLR), pursuant to subsections 64678 (a), (b) and (c) (Determination of Exceedances of Lead and Copper Action Levels), or that the source water lead levels are below the method detection level of 0.001 mg/L and the 90th percentile lead level is equal to or less than the DLR for each period. In either case, the system shall also not have a copper action level exceedance. If such a system ceases to meet this criteria, it shall conduct a corrosion control study, pursuant to section 64683 (Corrosion Control Study Procedure) within eighteen months of not meeting the criteria, and proceed thereafter pursuant to subsection (e).

(d) Each large system that conducts a corrosion control study will be notified of the Department's designation for CCT within 6 months of the study's completion and shall comply with the following timeframes:

(1) Begin CCT installation within 12 months of being notified of the Department's designation for CCT.

(2) Complete CCT installation within 24 months of the Department's designation.

(3) Complete two periods of WQP monitoring and tap sampling for lead and copper within 36 months of the Department's designation.

(4) Operate in compliance with the WQP levels specified by the Department pursuant to section 64684 (CCT Installation and Operation), beginning no later than within 42 months of the Department's designation. WQP tap monitoring may be reduced as follows:

(A) Pursuant to section 64682(c) (WQP Monitoring After CCT Installation), if the system has no action level exceedance; or

(B) To once every three years at the reduced number of sites pursuant to table 64680-A, if the system has 90th percentile levels that do not exceed 0.005 mg/L for lead and 0.65 mg/L for copper for two consecutive periods.

(5) If source water treatment has been installed, conduct source sampling for lead and copper pursuant to section 64685 (Source Water Monitoring and Treatment Designation).

(e) A large system with an action level exceedance for lead shall:

(1) Monitor source waters, pursuant to article 6 (Source Water Requirements) of this chapter;

(2) Complete a lead public education program, pursuant to article 7 (Public Education Program for Action Level Exceedances) of this chapter; and

(3) Replace lead service lines, pursuant to article 8 (Lead Service Line Requirements) of this chapter.

(f) A large system with an action level exceedance for copper shall monitor source waters pursuant to article 6 (Source Water Requirements) of this chapter.

Article 3. Monitoring for Lead and Copper

§64675. General Requirements for Tap Sampling for Lead and Copper.

(a) During each period, each system shall conduct standard tap sampling by collecting one sample from the number of sites based on the number of people served specified in table 64675-A under Standard Tap Sampling.

(b) During each period, each system conducting reduced tap sampling shall collect at least one sample from the number of sites based on the number of people served specified in table 64675-A under Reduced Tap Sampling, as follows:

(1) The sites shall be representative of the sites required for standard tap sampling.

(2) The samples shall be collected during the months of June, July, August, or September, unless the Department approves an alternate set of four months based on a review of the system's operations and lead and copper data, in which case the system shall initiate sampling during the alternate set of four months when directed in writing to do so by the Department, as follows:

(A) No later than 21 months after the previous period, if sampling annually, or

(B) No later than 45 months after the previous period, if sampling triennially.

Table 64675-A
Lead and Copper Tap Sampling Sites

System Size	Standard Tap Sampling	Reduced Tap Sampling
	(Minimimum Number of Sites)	

>100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
<101	5	5

(c) Sample sites shall be selected pursuant to section 64676 (Sample Site Selection).

§64675.5. Tap Sampling Frequency.

(a) A system shall conduct standard tap sampling for two consecutive periods; thereafter, tap sampling frequency may be reduced pursuant to section 64675 (General Requirements for Tap Sampling for Lead and Copper) as follows:

(1) If a system has 90th percentile levels that do not exceed 0.005 mg/L for lead and 0.65 mg/L for copper for two consecutive periods, it may reduce the sampling to once every three years at the reduced number of sites;

(2) For systems that do not meet the criteria in paragraph (1), after two consecutive periods with no action level exceedance, the frequency may be reduced to annually at the reduced number of sites, if the system receives written approval from the Department based on its review of the system's data. After sampling for three years (including the initial sampling year) with no action level exceedance, the frequency may be reduced to once every three years at the reduced number of sites, if the system receives written approval from the Department.

(b) If a system demonstrates for two consecutive periods that the difference between the 90th percentile tap sampling lead level and the highest source water monitoring result for each period is less than the reporting level for purposes of reporting (DLR), pursuant to subsections 64678(a), (b), and (c) or that the source water lead levels are below the method detection level of 0.001 mg/L and the 90th percentile lead level is equal to or less than the DLR for each period, the system shall conduct tap sampling once every three years.

§64676. Sample Site Selection.

(a) Each system shall identify a pool of sampling sites that:

(1) Is large enough to ensure that the water system can collect the number of lead and copper tap samples required in section 64675 (General Requirements for Tap Sampling for Lead and Copper);

(2) Meets the criteria in subsections (c) or (d), as applicable; and

(3) Does not include faucets that have point-of-use or point-of-entry treatment devices designed to remove inorganic contaminants.

(b) Prior to identifying sampling sites, each system shall conduct an evaluation of its distribution system to determine the construction materials (lead, copper, and galvanized steel) exposed to the water. If necessary to ensure the sample site criteria is met, the system shall collect additional information during the course of its normal operations

(e.g., checking service line materials when reading water meters, or performance maintenance activities) and from the following:

(1) All plumbing codes, permits, and records in the files of the building department(s) that indicate the plumbing materials installed within publicly and privately owned structures connected to the distribution system;

(2) All inspections and records of the distribution system that indicate the material composition of the service connections connecting a structure to the distribution system; and

(3) All existing water quality information, which includes the results of prior analyses of the system or individual structures connected to the system, indicating locations that may be particularly susceptible to high lead or copper concentrations.

(c) Each community water system shall:

(1) Identify a sampling pool of "tier 1" sampling sites consisting of single-family structures except that, when multiple-family residences comprise at least 20 percent of the structures served by a water system, the system may include these types of structures as "tier 1" sites in its sampling pool. The "tier 1" sampling sites shall

(A) Contain copper pipes with lead solder installed after 1982; or
(B) Contain lead pipes; or
(C) Be served by a lead service line.

(2) If there is an insufficient number of "tier 1" sites, complete its sampling pool with "tier 2" sampling sites, consisting of buildings, including multiple-family residences that:

(A) Contain copper pipes with lead solder installed after 1982; or
(B) Contain lead pipes; or
(C) Are served by a lead service line.

(3) If there is an insufficient number of "tier 1" and "tier 2" sampling sites, complete its sampling pool with "tier 3" sampling sites, consisting of single-family structures that contain copper pipes with lead solder installed before 1983. A system with an insufficient number of tier 1, 2 and 3 sites shall complete its sampling pool with representative sites (i.e., plumbing materials commonly found at other sites) throughout the distribution system.

(d) Each nontransient-noncommunity water system shall:

(1) Identify a pool of "tier 1" sampling sites consisting of buildings that:

(A) Contain copper pipes with lead solder installed after 1982; or
(B) Contain lead pipes; or
(C) Are served by a lead service line.

(2) If there is an insufficient number of "tier 1" sites that meet the criteria in paragraph (1), complete its sampling pool with sites that contain copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the system shall use representative sites (i.e., plumbing materials commonly found at other sites) throughout the distribution system.

(e) Each system whose distribution system contains lead service lines shall draw 50 percent of the samples it collects during each period from sites that contain lead pipes, or copper pipes with lead solder, and 50 percent of the samples from sites served by a lead service line. A system that cannot identify a sufficient number of sites served by a lead service line shall collect first draw samples from all of the sites identified as being served by such lines.

(f) A system that does not have enough taps that can provide first-draw samples shall submit written documentation to the Department identifying standing times and locations for enough non-first-draw samples to make up its sampling pool by the start of its next monitoring period.

§64677. Sample Collection Methods for Taps.

(a) All tap samples for lead and copper collected pursuant to this chapter, with the exception of lead service line samples collected under section 64689 (Lead Service Line Sampling) and samples collected under subsection (d), shall be first-draw samples, pursuant to subsection (b).

(b) A first-draw sample shall be one liter in volume and have stood motionless in the plumbing system of each site for at least six hours, but not more than twelve. Samples from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap. Samples from a non-residential building shall be collected at an interior tap from which water is typically drawn for consumption. Samples may be collected by the system or the system may allow residents to collect tap samples after instructing the residents of the sampling procedures specified in this section. To avoid problems of residents handling nitric acid, acidification of samples may be done up to 14 days after collection. After acidification to resolubilize the metals, the sample shall stand in the original container for the time specified by the method used pursuant to section 64670(c) before it can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

(c) A system shall collect each tap sample from the same site from which it collected a sample during the previous period. If the system cannot gain entry to a site in order to collect a tap sample, it may collect the tap sample from another site in its sampling pool as long as the new site meets the same criteria, and is as close as possible to the original site.

(d) A system that does not have enough taps to supply first-draw samples may apply to the Department in writing to substitute non-first-draw samples. Such systems shall collect as many first-draw samples as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites.

§64677.5. Sample Invalidation.

(a) A lead or copper sample may be invalidated by the Department if at least one of the following conditions is met and documented in writing:

(1) The laboratory establishes that improper sample analysis caused erroneous results;

(2) The Department determines that the sample was taken from a site that did not meet the site selection criteria in section 64676 (Sample Site Selection);

(3) The sample container was damaged in transit;

(4) The Department determines the sample does not meet the requirements in section 64677(Sample Collection Methods for Taps); or

(5) There is substantial reason to believe that the sample was subject to tampering.

(b) To apply for invalidation of one or more samples, a system shall report the results of all samples for the period to the Department, including written documentation to support the system's belief that one or more samples should be invalidated.

(c) A sample invalidated pursuant to subsection (a) shall not count toward determining lead or copper 90th percentile levels or toward meeting any monitoring requirements in this chapter.

(d) The system shall collect replacement samples for any invalidated samples if, after the invalidation of one or more samples, the system has too few samples to meet the monitoring requirements of this chapter. Replacement samples taken after the end of the applicable period shall not be used to meet the monitoring requirements of a subsequent period. Replacement samples shall be collected as follows:

(1) As soon as possible, but no later than 20 days after the system receives notification from the Department that it has invalidated the sample, or by the end of the applicable period, whichever occurs later; and

(2) At the same locations as the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

§64678. Determination of Exceedances of Lead and Copper Action Levels.

(a) The detection limits for purposes of reporting (DLRs) for lead and copper are as follows:

Table 64678-A. DLRs for Lead and Copper

Contaminant	DLR (mg/L)
Lead	0.005
Copper	0.050

(b) For purposes of determining the difference in concentration between the source water and the 90th percentile tap results, the following shall apply:

(1) Analytical results for lead greater than or equal to 0.001 mg/L and less than 0.005 mg/L shall be as measured or 0.0025 mg/L, whichever is greater.

(2) Analytical results for copper greater than or equal to 0.001 mg/L and less than 0.050 mg/L shall be as measured or 0.025 mg/L, whichever is greater.

(3) Analytical results below 0.001 mg/L for lead and copper shall be considered zero.

(c) Analytical results below the DLRs for lead and copper specified shall be reported as zero.

(d) The lead action level is exceeded if the concentration of lead in more than 10 percent of the tap water samples collected during any period is greater than 0.015 mg/L (i.e., if the "90th percentile" lead level is greater than 0.015 mg/L).

(e) The copper action level is exceeded if the concentration of copper in more than 10 percent of the tap water samples collected during any period is greater than 1.3 mg/L (i.e., if the "90th percentile" copper level is greater than 1.3 mg/L).

(f) The 90th percentile lead and copper levels shall be computed as follows:

(1) The results of all lead or copper samples collected during a period shall be placed in ascending order from the sample with the lowest concentration to the sample with the highest concentration. Each sampling result shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest contaminant level. The number assigned to the sample with the highest contaminant level shall be equal to the total number of samples taken.

(2) The number of samples taken during the period shall be multiplied by 0.9.

(3) The contaminant concentration in the numbered sample identified by the calculation in paragraph (f)(2) is the 90th percentile contaminant level.

(4) For water systems serving less than or equal to 100 people that collect 5 samples per period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

(g) The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and submitted to the department for making any determinations.

§64678.5. Monitoring Waivers for Small Systems.

(a) A small water system may apply to the Department for a waiver to reduce the tap sampling frequency for lead and copper to once every nine years, and shall continue tap sampling as required by this chapter until it receives written notification from the Department that the waiver has been approved.

(b) A system that meets the following materials and monitoring criteria for both lead and copper will be granted a full waiver, while a system that meets both sets of criteria

for only one of the chemicals will be granted a partial waiver that covers only that chemical.

(1) To meet the materials criteria, a system shall provide certification and documentation that its distribution system and service lines and all drinking water supply plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, satisfy the following:

(A) For lead, the system shall be free of the following lead-containing materials:

1. Plastic pipes that contain lead plasticizers, or plastic service lines that contain lead plasticizers; and

2. Lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless the utility can demonstrate to the Department that such fittings and fixtures will not leach lead into the drinking water.

(B) For copper, the system shall be free of copper pipes and copper service lines.

(2) To meet the monitoring criteria, the system shall have completed at least one period of standard tap sampling and demonstrate that the 90th percentile levels for all periods of tap sampling conducted since the system became free of all lead-containing and/or copper-containing materials, as appropriate, do not exceed the following:

(A) For lead, 0.005 mg/L.

(B) For copper, 0.65 mg/L.

(c) If granted a waiver, the system shall

(1) Comply with any requirements that the Department includes as conditions of the waiver, such as limited monitoring, periodic outreach to customers to remind them to avoid installation of materials that might void the waiver;

(2) Conduct tap sampling at the reduced number of sites for one period every nine years for the chemical(s) for which the waiver has been granted;

(3) Provide the materials certification specified in paragraph (b)(1) for the chemical(s) for which the waiver has been granted, along with the monitoring results; and

(4) If the waiver was granted for only one chemical, continue to monitor pursuant to this chapter for the other chemical.

(d) If the system continues to satisfy the requirements of subsections (b) and (c), the waiver will be renewed automatically, unless the Department notifies the system in writing that the waiver has been revoked and why. A system whose waiver has been revoked may re-apply for a waiver at such time as it again meets the appropriate materials and monitoring criteria in subsection (b) and (c).

(e) If a system with a waiver adds a new source of water or changes any water treatment, the Department may require the system to add or modify waiver conditions (e.g., require recertification that the system is free of lead-containing and/or copper-containing materials, require additional tap sampling periods), if it deems such modifications are necessary to address treatment or source water changes at the system.

(f) If a system with a waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, it shall notify the Department in writing no later than 60 days after becoming aware of such a change.

(g) If a system with a waiver that has been collecting samples during the months of June, July, August and September receives Department approval for an alternate set of months pursuant to section 64675(b)(2) (General Requirements for Tap Sampling for Lead and Copper), it shall conduct its next tap sampling before the waiver expires.

§64679. Supplemental Monitoring.
A water system with a lead action level exceedance shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample.

Article 4. Water Quality Parameter (WQP) Monitoring

§64680. General WQP Monitoring Requirements.

(a) WQP tap monitoring shall be:

(1) Representative of water quality throughout the distribution system, by considering the number of persons served, the different sources of water and treatment methods employed, and seasonal variability;

(2) Not restricted to sites targeted for lead and copper sampling; and

(3) Include two samples for each applicable WQP during each period, from the standard number of sites, based on the number of persons served, specified in table 64680-A.

Table 64680-A
WQP Tap Monitoring Sites

System Size (Number People Served)	Standard Tap Monitoring (Minimum Number of Sites)	Reduced Tap Monitoring (Minimum Number of Sites)
>100,000	25	10
10,001 to 100,000	10	7
3,301 to 10,000	3	3
501 to 3,300	2	2
101 to 500	1	1
<101	1	1

(b) Initial WQP monitoring at the entry point(s) to the distribution system shall be two samples for each applicable WQP at each entry point from locations representative of each source after treatment. After the installation of CCT, only one sample is required at each entry point. If a system draws water from more than one source and the sources are combined before distribution, the system shall sample at each entry point during normal operating conditions.

§64681. Initial WQP Monitoring.
For initial WQP monitoring, each system shall monitor for the following WQPs, pursuant to section 64680 (General WQP Monitoring Requirements):
(a) pH;
(b)Alkalinity;
(c) Orthophosphate, when an inhibitor containing a phosphate compound is used;
(d) Silica, when an inhibitor containing a silicate compound is used;
(e) Calcium;
(f) Conductivity; and
(g) Water temperature.

§64682. WQP Monitoring After CCT Installation.
(a) Each system that installs CCT shall monitor the following WQPs, pursuant to section 64680 (General WQP Monitoring Requirements), as applicable:
(1) At taps:
(A) pH;
(B) Alkalinity;
(C) Orthophosphate, when an inhibitor containing a phosphate compound is used;
(D) Silica, when an inhibitor containing a silicate compound is used;
(E) Calcium, when calcium carbonate stabilization is used as part of corrosion control.
(2) At each entry point to the distribution system every two weeks as a minimum:
(A) pH;
(B) When alkalinity is adjusted as part of CCT, a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration; and
(C) When a corrosion inhibitor is used as part of CCT, a reading of the dosage rate of the inhibitor used, and the concentration of the active ingredient(s).

(b) A ground water system may use entry points that are representative of water quality and treatment conditions throughout the system for the monitoring required in paragraph (a)(2) as follows:
(1) If waters from untreated and treated groundwater sources mix, the system shall monitor entry points representative of each;
(2) Prior to monitoring, the system shall submit written documentation to the Department identifying the sites and demonstrating that they are representative.

(c) Subject to the Department's written approval, a system that has no action level exceedance and meets the Department-specified WQP values or ranges may reduce tap monitoring as follows:
(1) After two consecutive periods during which it has met the WQP values or ranges, the system shall monitor each period at the reduced number of sites, pursuant to table 64680-A;

(2) After three consecutive years (including the initial sampling year) during which it has met the WQP values or ranges, the system shall monitor annually at the reduced number of sites at evenly-spaced intervals throughout the year; and

(3) After three consecutive years of annual monitoring during which the system meets the WQP values or ranges, the system shall monitor once every three years at the reduced number of sites at evenly-spaced intervals throughout the monitoring year.

Article 5. Corrosion Control

§64683. Corrosion Control Study Procedure.

(a) Each system conducting a corrosion control study shall:

(1) Evaluate the effectiveness of each of the following treatments, and, if appropriate, combinations of the following treatments to identify the CCT for that system:

(A) Alkalinity and pH adjustment;

(B) Calcium hardness adjustment; and

(C) The addition of a corrosion inhibitor at a concentration sufficient to maintain an effective residual concentration throughout the distribution system.

(2) Evaluate each of the corrosion control treatments using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documentation of such treatments from systems of similar size, water chemistry and distribution system configuration.

(3) Measure the following WQPs in any tests conducted under this subsection before and after evaluating the corrosion control treatments listed above:

(A) Lead;

(B) Copper;

(C) pH;

(D) Alkalinity;

(E) Calcium;

(F) Conductivity;

(G) Corrosion control inhibitor active ingredient (when an inhibitor is used);

H. Water temperature.

(4) Identify all chemical or physical constraints that limit or prohibit the use of a particular corrosion control treatment and document such constraints with at least one of the following:

(A) Data and documentation showing that a particular corrosion control treatment has adversely affected other water treatment processes when used by another water system with comparable water quality characteristics; and/or

(B) Data and documentation demonstrating that the water system has previously attempted to evaluate a particular corrosion control treatment and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

(5) Evaluate the effect of the chemicals used for corrosion control treatment on other water treatment processes.

(6) Recommend to the Department in writing the treatment option that the corrosion control studies indicate constitutes CCT for that system on the basis of an analysis of the data generated during each evaluation. The water system shall provide a rationale for its recommendation along with all supporting documentation specified in paragraphs (a)(1) through (5) of this section.

(b) Based on the study conducted pursuant to subsection (a), and a system's recommended treatment alternative, the Department will either approve the corrosion control treatment option recommended by the system, or designate alternative corrosion control treatment(s) from among those listed in paragraph (a)(1) of this section, notify the system of its decision on CCT in writing and explain the basis for its determination. If the Department requests additional information to aid its review, the water system shall provide the information.

§64684. CCT Installation and Operation.

(a) Each system shall install and operate throughout its distribution system the CCT designated by the Department in subsection 64683(b) (Corrosion Control Studies) or paragraph 64673(c)(3) (Small and Medium-size Water System Requirements) and monitor WQPs pursuant to section 64682 (WQP Monitoring After CCT Installation). When the system completes its installation of CCT, it shall submit a letter to the Department certifying that it has done so.

(b)After the system installs CCT, the Department will review the treatment and pre- and post-treatment tap sampling and WQP monitoring data and specify WQPs in writing within 42 months of its CCT designation as follows:

(1) A minimum value or a range of values for pH measured at each entry point to the distribution system;

(2) A minimum pH value of 7.0 or greater, measured in all tap samples, unless the Department determines that meeting a pH level of 7.0 is not technologically feasible or is not necessary for the system to optimize corrosion control;

(3) If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each entry point to the distribution system and in all tap samples, that the Department determines is necessary to maintain a passivating film on the interior walls of the pipes of the distribution system;

(4) If alkalinity is adjusted as part of CCT, a minimum concentration or a range of concentrations for alkalinity, measured at each entry point to the distribution system and in all tap samples;

(5) If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples; and

(6) Values for additional WQPs determined by the Department to reflect CCT for the system.

(c) After the Department specifies WQP values and ranges, each system shall monitor pursuant to section 64680 (General WQP Monitoring Requirements) and maintain WQPs as specified by the Department.

(d) A system shall be out of compliance with the WQP values and ranges specified by the Department pursuant to subsection (b) for any period during which it has excursions for more than nine days.

(1) An excursion occurs when a "daily value" at one or more sample sites for one or more WQPs in a day is below the minimum value or outside the range of Department-specified WQPs.

(2) A "daily value" for a WQP at a site is determined as follows:

(A) If sampling is more than once a day by continuous monitoring, grab sampling or both, the daily value shall be the average of all the day's results at the sampling site.

(B) If sampling is once a day, the daily value shall be the day's result.

(C) If sampling is less than once a day, the daily value shall apply to the day that the water supplier receives the result from the laboratory or the 30th day after the sample is collected, whichever comes first.

(3) When an excursion occurs, within 48 hours of being notified of the results of the initial sample(s), the system shall investigate the cause and collect a followup sample at each affected site for each WQP that did not meet the Department-specified values. The criteria in paragraphs (d)(1) and (2) shall be applied to the followup sample results to determine if another excursion has occurred.

(e) A system conducting reduced WQP tap monitoring that fails to meet the Department-specified WQPs shall resume standard WQP tap monitoring pursuant to section 64680 (General WQP Monitoring Requirements).

(f) The results of any monitoring conducted in addition to the minimum requirements of this section shall be considered by the system and submitted to the Department for making any determinations (i.e., determining concentrations of WQPs).

(g) Upon its own initiative or in response to a request by a system, the Department may modify in writing its designation of CCT or its specified WQP values and ranges if it determines that modification is necessary to ensure that the system continues to maintain CCT. Any request shall be in writing, explain the reason for the requested modification, and include supporting documentation.

Article 6. Source Water Requirements for Action Level Exceedances

§64685. Source Water Monitoring and Treatment Designation.

(a) Within six months of an action level exceedance, a system shall:

(1) Collect one lead and copper source water sample from each entry point to the distribution system that is representative of the source or combined sources and is collected after any treatment, if treatment is applied before distribution;

(2) In writing, either recommend to the Department the installation and operation of a source water treatment (ion exchange, reverse osmosis, lime softening, or coagulation/filtration) or demonstrate that source water treatment is not needed to minimize lead and copper levels at users' taps; and

(3) Submit any additional information requested by the Department to aid in its determination of whether source water treatment is necessary to minimize lead and copper levels in water delivered to users' taps.

(b) The Department will make a determination regarding source water treatment within six months after submission of monitoring results under subsection (a).

§64686. Requirements Subsequent to the Department's Designation.

(a) If the Department determines that source water treatment is required pursuant to subsection 64685(b), the system shall comply with the following within the specified timeframes that begin with the Department's determination regarding source water treatment:

(1) Install the treatment within 24 months and submit a letter to the Department certifying that installation has been completed;

(2) Collect an additional source water sample from each entry point to the distribution system during two consecutive periods within 36 months;

(3) Complete two consecutive periods of standard monitoring for lead and copper pursuant to section 64675 (General Requirements for Tap Sampling for Lead and Copper) within 36 months.

(b) Within 6 months after the system installs source water treatment, based on its review of the data collected pursuant to subsection (a) and the contaminant removal capability of the installed treatment when properly operated, the Department will specify maximum permissible lead and copper levels for water entering the distribution system. The water system shall comply with these maximum permissible levels.

(c) After the Department specifies maximum permissible levels or determines that source water treatment is not needed, the system shall conduct standard monitoring related to source water pursuant to table 64686-A, according to source water type. If approved by the Department based on a review of source water data, the system may reduce monitoring pursuant to table 64686-A.

Table 64686-A. Standard and Reduced Monitoring Related to Source Water

Type of monitoring	*Ground water*	*Surface water with or without groundwater*
Standard monitoring	1 sample at each entry point every 3 years, as a minimum	1 sample at each entry point every year, as a minimum
Reduced monitoring, after 3	1 sample at each entry	1 sample at each entry

consecutive rounds of standard monitoring in compliance with maximum permissible levels.	point every 9 years	point every 9 years

(d) If a system does not have an action level exceedance for lead and/or copper during three consecutive years for groundwater or one year for surface water with or without groundwater, the system is not required to conduct sampling related to source water for the specific chemical.

(e) If the results of sampling indicate an exceedance of the maximum permissible levels specified pursuant to subsection (b), one additional sample may be collected at the same sampling point as soon as possible within 14 days of the initial sample to confirm the result. If a confirmation sample is collected, then the average of the initial and confirmation sample results shall be used to determine compliance with the maximum permissible levels.

(f) A water system that begins using a new water source shall reinitiate standard monitoring pursuant to subsection (c) and conduct three rounds of monitoring with the new source online before reducing the monitoring frequency.

(g) Upon its own initiative or in response to a request by a system, the Department may modify its determination of the source water treatment, or maximum permissible lead and copper concentrations for treated source water. Any request shall be in writing, explain the reason for the requested modification, and include supporting documentation.

Article 7. Public Education Program for Lead Action Level Exceedances

§64687. Lead Public Education Program Content and Delivery.

(a) Each system with a lead action level exceedance shall conduct a lead public education program that includes delivery of the following public education materials pursuant to subsection (d). Within 10 days after the period during which the program was required, the system shall submit a letter to the Department demonstrating that it has delivered the public education materials as required and include a list of all the newspapers, radio stations, television stations, facilities and organizations to which the system delivered the materials during the previous year.

(1) Except as provided in subsection (b), a community water system shall include the following text in all of the printed materials it distributes through its lead public education program:

(A) INTRODUCTION. The California Department of Health Services (DHS), the U.S. Environmental Protection Agency, and [insert name of water supplier] are concerned about lead in your drinking water. Although most homes have very low levels of lead in their drinking water, some homes in the community have lead levels above the state and federal action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under state and federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion

control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of 15 ppb or more after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect you and your family by reducing your exposure to lead in drinking water.

(B) HEALTH EFFECTS OF LEAD. Lead is a common metal found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination -- like dirt and dust -- that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

(C) LEAD IN DRINKING WATER

1. Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with water. The U.S. Environmental Protection Agency estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

2. Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome plated brass faucets, and in some cases, pipes made of lead that connect your house to the water main (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%. In California, a similar law prohibiting the use of both lead solder and lead pipe was enacted in 1985.

3. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon after returning from work or school, can contain fairly high levels of lead.

(D) STEPS YOU CAN TAKE IN THE HOME TO REDUCE EXPOSURE TO LEAD IN DRINKING WATER

1. Despite our best efforts mentioned earlier to control water corrosivity and remove lead from the water supply, lead levels in some homes or buildings can be high. To find out whether you need to take action in your own home, have your drinking water tested to determine if it contains excessive concentrations of lead. Testing the water is essential because you cannot see, taste, or smell lead in

drinking water. Some local laboratories that can provide this service are listed at the end of this booklet. For more information on having your water tested, please call [insert phone number of water system].

2. If a water test indicates that the drinking water drawn from a tap in your home contains lead above 15 ppb, then you should take the following precautions:

A. Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in your home's plumbing the more lead it may contain. Flushing the tap means running the cold water faucet until the water gets noticeably colder, usually about 15 to 30 seconds. If your house has a lead service line to the water main, you may have to flush the water for a longer time, perhaps one minute, before drinking. Although toilet flushing or showering flushes water through a portion of your home's plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your family's health. It usually uses less than one or two gallons of water and costs less than [insert a cost estimate based on flushing two times a day for 30 days] per month. To conserve water, fill a couple of bottles for drinking water after flushing the tap, and whenever possible use the first flush water to wash the dishes or water the plants. If you live in a high-rise building, letting the water flow before using it may not work to lessen your risk from lead. The plumbing systems have more, and sometimes larger pipes than smaller buildings. Ask your landlord for help in locating the source of the lead and for advice on reducing the lead level.

B. Try not to cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and heat it on the stove.

C. Remove loose lead solder and debris from the plumbing materials installed in newly constructed homes, or homes in which the plumbing has recently been replaced, by removing the faucet strainers from all taps and running the water from 3 to 5 minutes. Thereafter, periodically remove the strainers and flush out any debris that has accumulated over time.

D. If your copper pipes are joined with lead solder that has been installed illegally since it was banned in 1986, notify the plumber who did the work and request that he or she replace the lead solder with lead-free solder. Lead solder looks dull gray, and when scratched with a key looks shiny. In addition, notify the California Department of Health Services and your local environmental health department about the violation.

E. Determine whether or not the service line that connects your home or apartment to the water main is made of lead. The best way to determine if your service line is made of lead is by either hiring a licensed plumber to inspect the line or by contacting the plumbing contractor who installed the line. You can identify the plumbing contractor by checking the record of building permits which should be maintained in the files of the [insert name of department that issues building permits]. A licensed plumber can at the same time check to see if your home's plumbing contains lead solder, lead pipes, or pipe fittings that contain lead. The public water system that delivers water to your home should also maintain records of the materials located in the distribution

system. If the service line that connects your dwelling to the water main contributes more than 15 ppb to drinking water, after our comprehensive treatment program is in place, we are required to replace the portion of the line we own. If the line is only partially owned by the [insert name of the city, county, or water system that owns the line], we are required to provide the owner of the privately-owned portion of the service line with information on how to replace the privately-owned portion of the service line, and offer to replace that portion of the line at the owner's expense. If we replace only the portion of the line that we own, we also are required to notify you in advance and provide you with information on the steps you can take to minimize exposure to any temporary increase in lead levels that may result from the partial replacement, to take a follow-up sample at our expense from the line within 72 hours after the partial replacement, and to mail or otherwise provide you with the results of that sample within three business days of receiving the results. Acceptable replacement alternatives include copper, stainless steel, and plastic pipes. Partial replacement should avoid the creation of mixed piping systems and include the installation of approved dielectric couplings at all dissimilar metal interfaces.

F. Have an electrician check your wiring. If grounding wires from the electrical system are attached to your pipes, corrosion may be greater. Check with a licensed electrician or your local electrical code to determine if your wiring can be grounded elsewhere. DO NOT attempt to change the wiring yourself because improper grounding can cause electrical shock and fire hazards.

3. The steps described above will reduce the lead concentrations in your drinking water. However, if a water test indicates that the drinking water coming from your tap contains lead concentrations in excess of 15 ppb after flushing, or after we have completed our actions to minimize lead levels, then you may want to take the following additional measures:

A. Purchase or lease a home treatment device. Home treatment devices are limited in that each unit treats only the water that flows from the faucet to which it is connected, and all of the devices require periodic maintenance and replacement. Devices such as reverse osmosis systems or distillers can effectively remove lead from your drinking water. Since these treatments remove dissolved minerals, water treated by these devices will have a greater tendency to leach lead from brass faucets or fittings which the water contacts after treatment. Some activated carbon filters may reduce lead levels at the tap, however all lead reduction claims should be investigated. Be sure to check the actual performance of a specific home treatment device before and after installing the unit. The California Department of Health Services certifies the effectiveness of home treatment devices. Only devices certified by the California Department of Health Services to remove lead should be used for this purpose.

B. Purchase bottled water for drinking and cooking.

4. You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

A. [insert the name of city or county department of public utilities] at [insert phone number] can provide you with information about your community's water

supply, and a list of local laboratories that have been certified by the California Department of Health Services for testing water quality;

B. [insert the name of city or county department that issues building permits] at [insert phone number] can provide you with information about building permit records that should contain the names of plumbing contractors that plumbed your home; and

C. California Department of Health Services, Childhood Lead Poisoning Prevention Branch at [insert the phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead and how you can have your child's blood tested.

5. The following is a list of some state approved laboratories in your area that you can call to have your water tested for lead. [Insert names and phone numbers of at least two laboratories].

(2) Except as provided in subsection (b), a nontransient-noncommunity water system shall include either the text in paragraph (a)(1) or the following text, in all of the printed materials it distributes through its lead public education program.

(A) INTRODUCTION. The California Department of Health Services, the United States Environmental Protection Agency (EPA) and [insert name of water supplier] are concerned about lead in your drinking water. Some drinking water samples taken from this facility have lead levels above the EPA action level of 15 parts per billion (ppb), or 0.015 milligrams of lead per liter of water (mg/L). Under Federal law we are required to have a program in place to minimize lead in your drinking water by [insert date when corrosion control will be completed for your system]. This program includes corrosion control treatment, source water treatment, and public education. We are also required to replace the portion of each lead service line that we own if the line contributes lead concentrations of more than 15 ppb after we have completed the comprehensive treatment program. If you have any questions about how we are carrying out the requirements of the lead regulation please give us a call at [insert water system's phone number]. This brochure explains the simple steps you can take to protect yourself by reducing your exposure to lead in drinking water.

(B) HEALTH EFFECTS OF LEAD. Lead is found throughout the environment in lead-based paint, air, soil, household dust, food, certain types of pottery porcelain and pewter, and water. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children and pregnant women. Amounts of lead that won't hurt adults can slow down normal mental and physical development of growing bodies. In addition, a child at play often comes into contact with sources of lead contamination - like dirt and dust - that rarely affect an adult. It is important to wash children's hands and toys often, and to try to make sure they only put food in their mouths.

1. Lead in drinking water, although rarely the sole cause of lead poisoning, can significantly increase a person's total lead exposure, particularly the exposure of infants who drink baby formulas and concentrated juices that are mixed with

water. The EPA estimates that drinking water can make up 20 percent or more of a person's total exposure to lead.

2. Lead is unusual among drinking water contaminants in that it seldom occurs naturally in water supplies like rivers and lakes. Lead enters drinking water primarily as a result of the corrosion, or wearing away, of materials containing lead in the water distribution system and household plumbing. These materials include lead-based solder used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, pipes made of lead that connect houses and buildings to water mains (service lines). In 1986, Congress banned the use of lead solder containing greater than 0.2% lead, and restricted the lead content of faucets, pipes and other plumbing materials to 8.0%.

3. When water stands in lead pipes or plumbing systems containing lead for several hours or more, the lead may dissolve into your drinking water. This means the first water drawn from the tap in the morning, or later in the afternoon if the water has not been used all day, can contain fairly high levels of lead.

(D) STEPS YOU CAN TAKE. Steps you can take to reduce exposure to lead in drinking water include:

1. Let the water run from the tap before using it for drinking or cooking any time the water in a faucet has gone unused for more than six hours. The longer water resides in plumbing the more lead it may contain. Flushing the tap means running the cold water faucet for about 15-30 seconds. Although toilet flushing or showering flushes water through a portion of the plumbing system, you still need to flush the water in each faucet before using it for drinking or cooking. Flushing tap water is a simple and inexpensive measure you can take to protect your health. It usually uses less than one gallon of water.

2. Do not cook with, or drink water from the hot water tap. Hot water can dissolve more lead more quickly than cold water. If you need hot water, draw water from the cold tap and then heat it.

3. The steps described above will reduce the lead concentrations in your drinking water. However, if you are still concerned, you may wish to use bottled water for drinking and cooking.

4. You can consult a variety of sources for additional information. Your family doctor or pediatrician can perform a blood test for lead and provide you with information about the health effects of lead. State and local government agencies that can be contacted include:

A. [insert the name or title of facility official if appropriate] at [insert phone number] can provide you with information about your facility's water supply; and

B. [insert the name or title of the State Department of Health Services] at [insert phone number] or the [insert the name of the city or county health department] at [insert phone number] can provide you with information about the health effects of lead.

(b) Any additional information presented shall be consistent with the information in subsection (a) and be in plain language that can be understood by laypersons. A system

may delete information pertaining to lead service lines, on approval by the Department, if the water system does not have any such lines. Building permit record availability and consumer access to these records may be modified, if approved by the Department.

(c) The system shall include the following information in all public service announcements submitted under its lead public education program to television and radio stations for broadcasting:

(1) Why should everyone want to know the facts about lead and drinking water? Because unhealthy amounts of lead can enter drinking water through the plumbing in your home. That's why I urge you to do what I did. I had my water tested for [insert free or cost per sample]. You can contact the [insert the name of the city or water system] for information on testing and on simple ways to reduce your exposure to lead in drinking water.

(2) To have your water tested for lead, or to get more information about this public health concern, please call [insert the phone number of the city or water system].

(d) The system shall conduct the lead public education program as follows:

(1) In communities where a significant proportion of the population speaks a language other than English, public education materials shall be communicated in the appropriate language(s).

(2) Within 60 days after it has a lead action level exceedance, unless it is already conducting a lead public education program, a community water system shall:

(A) Insert notices in each customer's water utility bill containing the information in paragraph (a)(1), along with the following alert on the water bill itself in large print: SOME HOMES IN THIS COMMUNITY HAVE ELEVATED LEAD LEVELS IN THEIR DRINKING WATER. LEAD CAN POSE A SIGNIFICANT RISK TO YOUR HEALTH. PLEASE READ THE ENCLOSED NOTICE FOR FURTHER INFORMATION. A community water system with a billing cycle that does not include a billing within 60 days of the exceedance, or that cannot insert information in the bill without making major changes to its billing system, may use a separate mailing as long as it is conducted within 60 days of the exceedance.

(B) Submit the information in paragraph (a)(1) to the editorial departments of the major daily and weekly newspapers circulated throughout the community.

(C) Deliver pamphlets and/or brochures that contain the public education materials in subparagraphs (a)(1)(B) and (D) to facilities and organizations, including the following:

1. Public schools and/or local school boards;
2. City or county health department;
3. Women, Infants, and Children and/or Head Start Program(s) whenever available;
4. Public and private hospitals and/or clinics;
5. Pediatricians;
6. Family planning clinics; and
7. Local welfare agencies.

(D) Submit the public service announcement in subsection (c) to at least five of the radio and television stations with the largest audiences that broadcast to the community served by the system.

(3) A community system shall repeat the tasks in subparagraphs (d)(2)(A),(B) and (C) every 12 months, and the tasks in subparagraph (d)(2)(D) every 6 months for as long as the system has a lead action level exceedance.

(4) Within 60 days after it has a lead action level exceedance, unless it is already conducting a lead public education program, a nontransient-noncommunity system shall deliver the public education materials in paragraphs (a)(1) or (a)(2) as follows:

(A) Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and

(B) Distribute informational pamphlets and/or brochures on lead in drinking water to each person served by the system. The Department may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as it achieves at least the same coverage.

(5) A nontransient-noncommunity system shall repeat the tasks in paragraph (4) at least once during each calendar year in which the system has a lead action level exceedance.

(6) A system may discontinue the lead public education program if it does not have a lead action level exceedance during the most recent period. The system shall recommence the program pursuant to this section if it subsequently has a lead action level exceedance.

(7) A community water system may apply to the Department, in writing, to use the text in paragraph (a)(2) in lieu of the text in paragraph (a)(1) and to perform the tasks listed in paragraphs (d)(4) and (c)(5) of this section in lieu of the tasks in paragraphs (d)(2) and (d)(3) of this section if:

(A) The system is a facility, such as a prison or a hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing point of use treatment devices; and

(B) The system provides water as part of the cost of services provided and does not separately charge for water consumption.

(8) A community water system serving 3,300 or fewer people may omit the task contained in subparagraph (d)(2)(D). As long as it distributes notices containing the information contained in paragraph (a)(1) of this section to every household served by the system, such systems may further limit their public education programs as follows:

(A) Systems serving 500 or fewer people may forego the task contained in subparagraph (d)(2)(B). Such a system may limit the distribution of the public education materials required under subparagraph (d)(2)(C) to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children, unless notified by the Department in writing that it shall make a broader distribution.

(B) If approved by the Department in writing, a system serving 501 to 3,300 people may omit the task in subparagraph (d)(2)(B) and/or limit the distribution of the public education materials required under subparagraph (d)(2)(C) to facilities and

organizations served by the system that are most likely to be visited regularly by pregnant women and children.

(9) A community water system serving 3,300 or fewer people that delivers the lead public education in accordance with paragraph (d)(8)(A) of this section shall repeat these requirements at least once during each calendar year in which the system exceeds the lead action level.

Article 8. Lead Service Line Requirements for Action Level Exceedances

§64688. Lead Service Line Replacement.

(a) A system shall replace lead service lines if:

(1) It has a lead action level exceedance in tap samples after installing corrosion control and/or source water treatment (whichever sampling occurs later) and/or

(2) It is in violation for failure to install source water treatment or CCT.

(b) Within 6 months after it has a lead action level exceedance, the system shall demonstrate in writing that it has conducted a materials evaluation including that in section 64676 (Sample Site Selection) to identify the initial number of lead service lines in its distribution system, and shall submit both the demonstration and a schedule for complying with subsection (c) to the Department.

(c) Except as provided in subsection (e), a system that is required to conduct lead service line replacement shall annually replace at least 7 percent of the initial number of lead service lines in its distribution system, pursuant to the following.

(1) At the time the lead service line replacement begins, the system shall identify the initial number of lead service lines in its distribution system based on the evaluation in section 64676 (Sample Site Selection).

(2) The first year of lead service line replacement shall begin on the date the system first had a lead action level exceedance subsequent to its installation of CCT and, if required pursuant to section 64686, source water treatment.

(3) The system is not required to replace an individual lead service line if the lead concentration in each and every service line sample from that line, taken pursuant to the section 64687 (Lead Service Line Sampling), is less than or equal to 0.015 mg/L.

(4) The system shall replace that portion of the lead service line that it owns and keep ownership documentation in its files and offer to replace the building owner's portion of the line with the cost being borne by the building owner. If the building owner does not accept the offer, the system shall:

(A) At least 45 days prior to commencing the partial replacement, notify the resident(s) of all buildings served by the line that they may experience a temporary increase of lead levels in their drinking water, along with guidance on measures they may take to minimize their exposure. If the replacement is in conjunction with emergency repairs, the Department will allow a shorter notice, depending on the nature of the emergency and the timing involved. The notice shall be mailed unless an alternate method is approved by the Department, based on the feasibility of insuring that all consumers receive the notice; and

(B) Inform the resident(s) that the system will collect a first flush tap water sample within 72 hours after the partial replacement of the service line has been completed if the resident(s) so desire. If the resident(s) accept the offer, the system shall collect the sample and report the results to the resident(s) and the owner within three business days of receiving the results and to the Department.

(d) Within 12 months after the lead action level exceedance, and every 12 months thereafter, the system shall submit in writing to the Department the number of lead service lines scheduled to be replaced during the previous year of the system's replacement schedule, along with the following information to the Department:

(1) The number and location of each lead service line replaced during the previous year of the system's replacement schedule to demonstrate that it has replaced at least 7 percent of the initial lead service lines within the previous 12 months, or a greater number of lines if required by the Department; or

(2) Lead service line sampling results that demonstrate that the lead level from an individual line(s)is less than or equal to 0.015 mg/L, pursuant to section 64689 (Lead Service Line Sampling). The system shall submit the results of the lead service line sampling including the lead levels, location of each lead service line sampled, the sampling method, and the date of sampling. It shall also include the number and location of each lead service line replaced during the previous year. In such cases, the total number of lines replaced and/or that meet the criteria shall equal at least 7 percent of the initial number of lead lines identified or the percentage required by the Department.

(e)) A system shall replace lead service lines at a faster rate than that required by subsection (b), taking into account the number of lead service lines in the system, if the Department determines either that this is necessary based on elevated blood lead levels in the population served, or that it is feasible to complete the lead service line replacement program in a shorter time without increasing the water rates to the customers.

(f) A system may cease replacing lead service lines when it has two consecutive periods without a lead action level exceedance. If the system has a lead action level exceedance during any subsequent period, it shall recommence replacing lead service lines.

§64689. Lead Service Line Sampling.

(a) Each lead service line sample shall be one liter in volume and have stood motionless in the lead service line for at least six hours, but not more than twelve.

(b) Lead service line samples shall be collected in one of the following three ways:

(1) At the tap after flushing the volume of water between the tap and the lead service line. The volume of water to be flushed shall be calculated based on the interior diameter and length of the pipe between the tap and the lead service line;

(2) Tapping directly into the lead service line; or

(3) If the sampling site is a building constructed as a single-family residence, allowing the water to run until there is a change in temperature that would be indicative of water that has been standing in the lead service line.

Article 9. Reporting and Recordkeeping

§64690.10. Data Reporting.

Each system shall report the following within the first 10 days after the end of each period during which such sampling or monitoring was conducted:

(a) For lead and copper tap sampling:

(1) The results of all tap samples including the location of each site and the associated tier criteria from section 64676 (Sample Site Selection);

(2) The 90th percentile lead and copper concentrations calculated pursuant to section 64678 (Determination of Exceedances of Lead and Copper Action Levels); and

(3) With the exception of the first period of tap sampling, an identification of any site that was not sampled during previous periods, along with an explanation of why the sampling site was changed;

(b) For WQP monitoring, the results of all samples collected and analyzed pursuant to article 4 (WQP Monitoring) of this chapter;

(c) For source water monitoring:

(1) The results for all samples related to source water collected and analyzed under article 6 (Source Water Requirements for Action Level Exceedances) of this chapter; and

(2) With the exception of the first round of sampling related to source water, an identification of any site that was not sampled during previous periods along with an explanation of why the sampling point was changed; and

(d) The results for any samples collected and analyzed for lead and copper or WQPs in addition to those required by this chapter.

§64690.80. Recordkeeping.

Any system subject to the requirements of this chapter shall retain on its premises original records of all sampling data and analyses, reports, surveys, letters, evaluations, schedules, Department determinations, and any other information required by this chapter. Each water system shall retain the records required by this section for no fewer than 12 years or two compliance cycles (as defined in Section 64400.20), whichever is longer.

CHAPTER 18. DRINKING WATER ADDITIVES

Article 1. Requirements

§64700. Direct Additives.

(a) No chemical or product shall be added to drinking water by a water supplier as part of the treatment process after January 1, 1994 unless the chemical or product has

been tested and certified as meeting the specifications of American National Standard Institute/National Sanitation Foundation Standard 60, ANSI/NSF 60, as amended October, 1988 (Drinking Water Treatment Chemicals--Health Effects). This requirement shall be met under testing conducted by a product certification organization accredited for this purpose by the American National Standards Institute.

(b) Any contract for the purchase of chemicals or products which was signed by a public water system and which was effective prior to January 1, 1994 shall be exempt from the provisions of subsection (a) until January 1, 1995.

§64710. Exception.
A water supplier may use a chemical, material or product that has not been certified pursuant to Section 64700 or Section 64705 if the chemical, material or product is in the process of being tested and certified and there are no certified alternatives. Prior to use of an uncertified chemical, material or product, the water supplier shall provide the Department with an explanation of the need for the chemical, material or product; the date that the chemical, material or product was submitted for testing; the name of the accredited product certification organization conducting the testing; and a statement that certified alternatives are not available.