

POINT-OF-USE/POINT-OF-ENTRY TREATMENT DEVICE REGULATIONS

Division of Drinking Water

Public Workshop
Marina Library, Marina, CA
March 2, 2017

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Outline

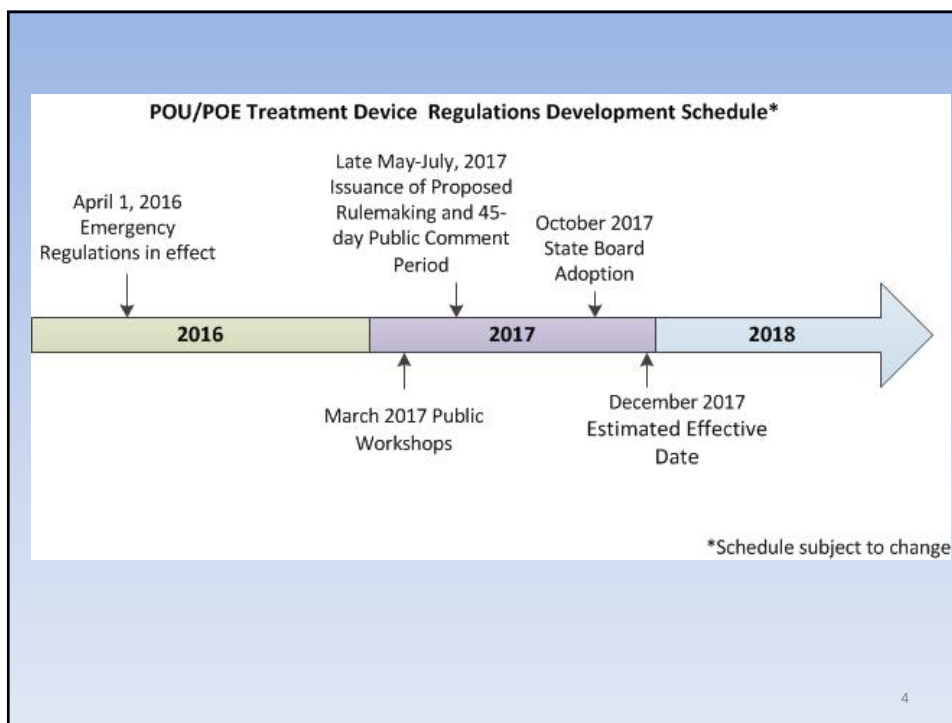
- Process for Adoption of Regulations
- Proposed Draft Regulations
 - Requirements
 - Changes from Emergency Regulations
- POU/POE Treatment Device Requirements
- Questions/Solicit Input

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Regulations - Statutory Authority

- Emergency regulations previously adopted 2010 (POU) and 2011 (POE), expired January 1, 2014
- 2014-2015: Underlying law remained in place
- AB 434 (2015) amended the law to require the State Water Board to adopt POU/POE regulations
 - Emergency Regulations went into effect April 1, 2016
 - Regular regulations effective by January 1, 2018

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Emergency Regulations in place

- California Code of Regulations, Title 22, Sections 64417, 64418, 64418.1, 64418.2, 64418.3, 64418.4, 64418.5, 64418.6, 64418.7, 64419, 64420, 64420.1, 64420.2, 64420.3, 64420.4, 64420.5, 64420.6, and 64420.7
- Link to regulations at:
 - http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/POEandPOUTreatment.shtml
 - Google "California POU emergency regulations"

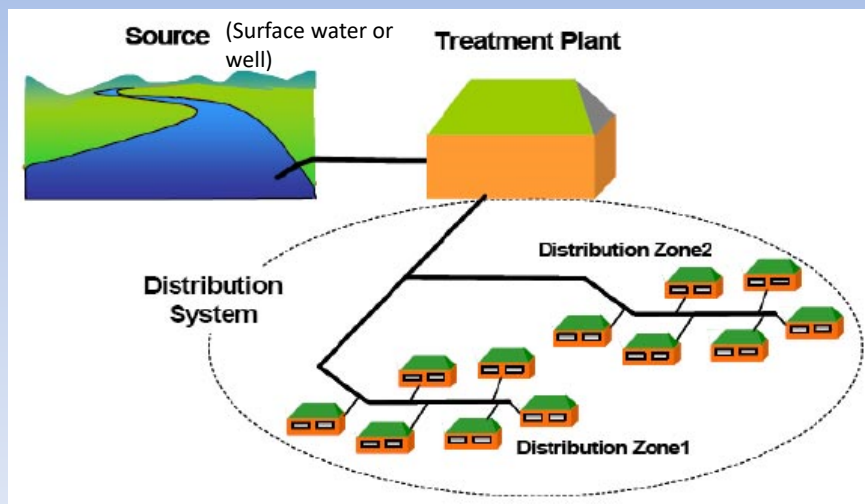
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Regulations - Background

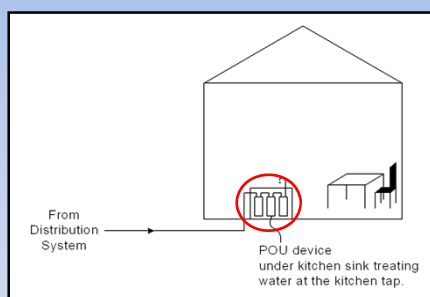
- Federal requirements: law, regulations and guidance
- AB 434 (Health and Safety Code (H&SC))
- Experience gained implementing emergency regulations
- Input from public workshops

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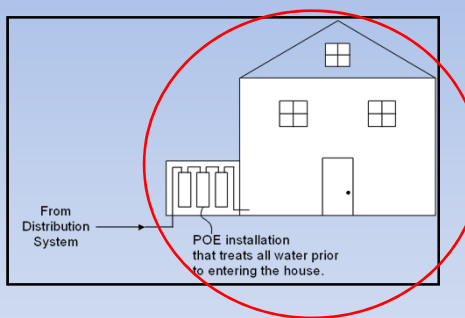
Regulations – Background Centralized Treatment



Regulations – Background POU/POE Treatment



POU: Treats water at a **single tap**.



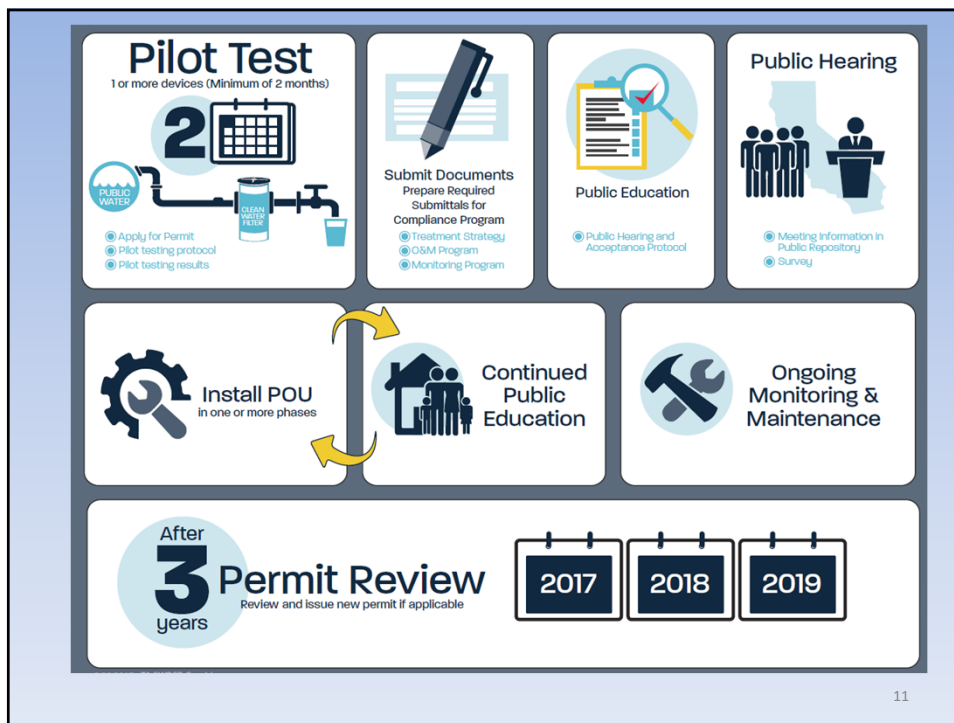
POE: Treats all water entering a **building** (including schools and businesses.)

Requirements (POU and POE)
1. Public Water System (PWS) must have fewer than 200 service connections. Health & Safety Code 116380
2. PWS must demonstrate that centralized treatment isn't economically feasible Health & Safety Code 116380
3. POU's cannot be used for microbials, volatile organic compounds, or radon. US Safe Drinking Water Act (SDWA) for microbials . US EPA guidance for VOC/radon .
4. PWS must have submitted application for funding. Health & Safety Code 116380
5. PWS must demonstrate no substantial community opposition and must have a public hearing. Health & Safety Code 116552
6. Generally, POU's/POE's must be third-party certified to the applicable American National Standards Institute (ANSI) standard, if one exists. US SDWA
7. PWS must have programs/plans in place for assuring safe and effective use of POU's/POE's. Federal guidance

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Requirements (POU and POE) continued
8. POU/POE must be owned, controlled, and maintained by PWS. US SDWA
9. POU's/POE's must be equipped with mechanical warnings to ensure that customers are automatically notified of operational problems. US SDWA
10. For POE's, every building connected to the PWS must have a POE installed, and that the rights and responsibilities of the customer convey with title upon sale of the property. Federal regulations CFR 141.100
11. For POU's, the PWS must ensure that each residential unit, dwelling unit, ... served by the water system has a POU installed pursuant to the regulations. US SDWA
12. The issuance of a permit shall be limited to not more than three years or until funding for centralized treatment is available, whichever occurs first. Health & Safety Code 116552
13. Pilot testing shall be performed on each proposed type of POU/POE for at least 2 months.
14. All devices shall be monitored annually after initial monitoring. After 1 year of monitoring, PWS can apply for a reduction in monitoring if the results meet certain criteria.

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Summary

- Centralized treatment where economically feasible
- POU/POE can provide safe drinking water when centralized treatment not economically feasible
- Proposed regular regulations are substantially the same as emergency regulations
- POU/POE can be used for purposes other than compliance

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What is 'New' in Proposed Regular Regulations

- Clarification regarding “apply for funding”
- HSC 116380 states:
 - (a) The State Water Resources Control Board shall adopt regulations governing the use of point-of-entry and point-of-use treatment by public water systems in lieu of centralized treatment where it can be demonstrated that centralized treatment is not immediately economically feasible, limited to the following:
 - ...(3) Water systems that have submitted applications for funding to correct the violations for which the point-of-entry and point-of-use treatment is provided.

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What is 'New' in Proposed Regular Regulations (cont'd)

- Insert new text as section 64418(a)(2)
 - “The public water system has applied for funding from the State Water Resources Control Board”

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POU Device Requirements

- Review specific requirements
- Example: Hexavalent chromium

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§64418.2. POU Requirements

(a) As ensured by the public water system, each POU shall:

(1) If the American National Standard Institute (ANSI) has issued a product standard applicable to the specific type of POU, be independently certified in accordance with the standard;

(2) If ANSI has not issued a product standard applicable to the specific type of proposed POU, be approved by the State Board;

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§64418.2. POU Requirements (cont'd)

(3) If an ANSI-issued standard does not adequately address a California drinking water standard or if a POU has not been independently certified for a specific contaminant, be approved by the State Board;

(4) Be owned, controlled, operated, and maintained by the public water system and/or a person(s) under contract with the water system, to ensure proper operation, maintenance, monitoring, and compliance with this Article and applicable drinking water standards;

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§64418.2. POU Requirements (cont'd)

(5) Be equipped with a mechanical warning (e.g. alarm, light, etc.) that alerts users when a unit needs maintenance or is no longer operating in a manner that assures the unit is producing effluent meeting state and federal drinking water standards, unless the device is equipped with an automatic shut-off mechanism that prevents the flow of water under such circumstances; and

(6) If requested by the State Board, be equipped with a totalizing flow meter.

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http://www.waterboards.ca.gov/drinking_water/certlic/device/watertreatmentdevices.shtml

Current Listing of Registered Devices

Here is the current listing of devices registered for sale in California:

[Registered Water Treatment Devices](#) as of February 21, 2017

Here are current listings of devices that reduce arsenic and nitrates that are registered for sale in California. The lists include links to Performance Data Sheets received to date.

- [Arsenic: Registered Water Treatment Devices](#) as of May 5, 2016
- [Chromium: Registered Water Treatment Devices](#) as of March 01, 2017
- [Lead: Registered Water Treatment Devices](#) as of March 01, 2017
- [Nitrate: Registered Water Treatment Devices](#) as of May 5, 2016

Example: Hexavalent Chromium

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contain only pentavalent arsenic. Claims for pentavalent arsenic reduction shall only be made on water supplies meeting one of the following criteria:

- a residual free chlorine concentration is detectable at the reverse osmosis system inlet; or
- the water at the reverse osmosis system inlet has been demonstrated to contain only pentavalent arsenic.

Table 7.2 – Contaminant reduction requirements

Contaminant	Individual influent sample point limits ¹ mg/L	Average influent challenge level mg/L	Maximum allowable product water level mg/L	USEPA method/s	Compounds
arsenic (pentavalent) ²	0.30 ±20%, 0.30 ±25% ³	0.30 ± 10%	0.010	200.7 ⁴ , 200.8 ⁵	Na ₂ HAsO ₄ · 7H ₂ O
arsenic (pentavalent) ²	0.050 ±20%, 0.050 ±25% ³	0.050 ± 10%	0.010	200.7 ⁴ , 200.8 ⁵	Na ₂ HAsO ₄ · 7H ₂ O
barium	10.0 ±20%, 10.0 ±25% ³	10.0 ± 10%	2.0	200.7, 200.8	BaCl ₂ · 2H ₂ O
cadmium	0.03 ±25%	0.03 ± 10%	0.005	200.8, 200.9	CdCl ₂ · 2.5 H ₂ O or Cd(NO ₃) ₂
chromium (hexavalent) ⁶	0.3 ± 20%, 0.3 ± 25% ⁶	0.3 ± 10% (added as hexavalent)	0.1	200.7, 200.8, 200.9	Na ₂ Cr ₂ O ₇ · 2 H ₂ O
chromium (trivalent) ⁶	0.3 ± 30% ⁷	0.3 ± 10% (added as trivalent)	0.1	—	CrCl ₃ · 6 H ₂ O
chromium (hexavalent and trivalent)	0.3 ±25%	0.3 ± 10% (added as 0.15 mg/L hexavalent and 0.15 mg/L trivalent)	0.05 (for each species)	SM3500-CrD and 200.8	—
	3.0 ± 20%				

Note: 0.1 mg/L = 100 ppb

Example: Hexavalent Chromium

Cert #	Manufacturer	Model	Percent Reduction		Effluent mg/L	
			Cr. VI	Cr. III	Cr. VI	Cr. III
1815	3M Purification Inc.	Aqua-Pure APRO5500				
2015	3M Purification Inc.	3MRO401	99.5	99.1	0.005	0.002
2034	3M Purification Inc.	50C-WRO-4	99.5	99.1	0.005	0.002
2202	3M Purification Inc.	4 US-RO-501	97.2	96.7	0.008	0.01
3037	American Plumber	WRO-2550	91.20%	94.80%	0.026	0.016
3003	Ameriflow Water Systems Inc	KR10			98.5	0.005
3004	Ameriflow Water Systems Inc	KR15			98.5	0.005
3179	Aquasana, Inc	AC-RO-3	0.009	0.01		
3029	Clack Corporation	T.F.C.-335	99%	98%	0.012	0.006
3030	Clack Corporation	T.F.C.-435	99%	98%	0.012	0.006
2077	Coway Co Ltd.	Bikal P-09CRA	98.50%	98.80%	0.005	0.005
2194	Coway Co Ltd.	P-300L	98.60%	99.40%	0.004	0.002
2195	Coway Co Ltd.	CHP-06EL	98.60%	99.40%	0.004	0.002
2198	Coway Co Ltd.	P-070L	98.60%	99.40%	0.004	0.002
2199	Coway Co Ltd.	Patr CHP-09DL	98.60%	99.40%	0.004	0.002
2200	Coway Co Ltd.	CHP-03AL	98.60%	99.40%	0.004	0.002
2201	Coway Co Ltd.	CHP-250L	98.60%	99.40%	0.004	0.002
2193	Coway Co Ltd.	CHP1-08BL	98.60%	99.40%	0.004	0.002
2204	Coway Co Ltd.	CHP-06AL	98.60%	99.40%	0.004	0.002
3107	Coway Co Ltd.	P-09CL	98.60%	99.40%	0.004	0.002
3188	Coway Co Ltd.	P-150L	98.60%	99.40%	0.004	0.002
3190	Coway Co Ltd.	CHP1-280L	98.60%	99.40%	0.004	0.002
3191	Coway Co Ltd.	CHP-590L	98.60%	99.40%	0.004	0.002
3192	Coway Co Ltd.	CHP-671L	98.60%	99.40%	0.004	0.002
1247	Culligan International Company	AC-30 2 gal, AC-30M 3 gal, AC-30L 9 gal, AC-30 Plus 2 gal w/PID, AC-30M Plus 3 gal w/PID, AC-30	92.5	98.6	0.02	0.004
19018	Culligan International Company	Good Water Machine AC-30M	92.5	98.6	0.02	0.004
1901a	Culligan International Company	Good Water Machine AC-30M Plus	92.5	98.6	0.02	0.004
1900a	Culligan International Company	Good Water Machine AC-30	92.5	98.6	0.02	0.004
19000	Culligan International Company	Good Water Machine AC-30 PLUS	92.5	98.6	0.02	0.004
1909a	Culligan International Company	Good Water Machine AC-30L	92.5	98.6	0.02	0.004
19090	Culligan International Company	Good Water Machine AC-30L PLUS	92.5	98.6	0.02	0.004
1928	Culligan International Company	Culligan International Company Aqua-Clear Advanced Drinking Water System with RO30	96.4	98.5	0.014	0.007
1944	Culligan International Company	Culligan International Company Aqua-Clear Advanced Drinking Water System with RO30 and TD	96.4	98.5	0.014	0.007
1948	Culligan International Company	Culligan International Company Aqua Clear Advanced Drinking Water System with RO30 and AS	96.4	98.5	0.011	0.005
1949	Culligan International Company	Culligan International Company Aqua Clear Advanced Drinking Water System with RO30, TD and	96.4	98.5	0.014	0.007
1954	Culligan International Company	Culligan International Company Aqua-Clear Advanced Drinking Water System with RO30	96.4	98.5	0.014	0.007
1955	Culligan International Company	Culligan International Company Aqua-Clear Advanced Drinking Water System with RO30	96.4	98.5	0.014	0.007
1958	Culligan International Company	Culligan International Company Aqua-Clear Advanced Drinking Water System with RO30 and TD	96.4	98.5	0.014	0.007
1959	Culligan International Company	Culligan International Company Aqua-Clear Advanced Drinking Water System with RO30 and TD	96.4	98.5	0.014	0.007

Note: 0.010 mg/L = 10 ppb



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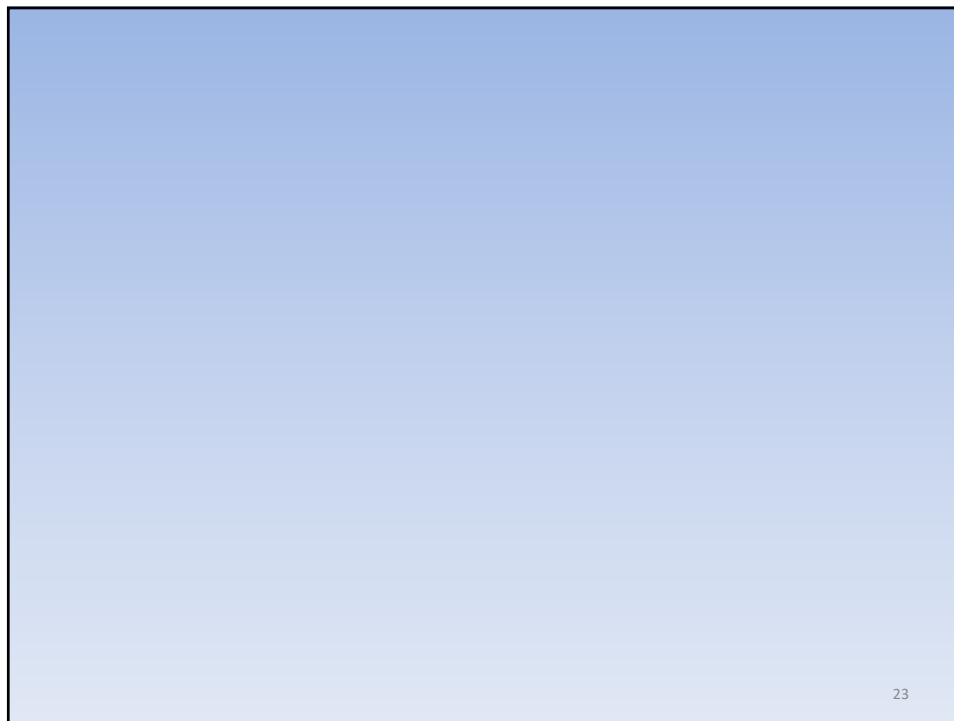
Solicit Input

Questions?

Comments?

- Not official public comments...sign up for email notification
- How will we follow up?
 - Will be available to discuss, however will not provide individual updates/follow up

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Economic Feasibility Requirements

The water system must demonstrate to the State Board that centralized treatment for achieving compliance is not economically feasible:

1. Estimated cost of centralized treatment, per household, is more than one percent (1%) of the median household income (MHI) of the customers served by the community water system; or
2. Estimated cost of centralized treatment, per household, plus the median water bill from the most recent 12 months is:
 - a. If the community's MHI is equal to or less than the statewide MHI, more than 1.5 % of the MHI of customers served
 - b. If the community's MHI is greater than the statewide MHI, more than 2 % of the MHI of customers served
3. The estimated cost of centralized treatment may include, but is not limited to, the costs associated with equipment, design and construction, residual disposal, monitoring, and operation and maintenance.
4. A non-community water system shall submit to the State Board documents that demonstrate that the water system does not have the financial resources for the cost of centralized treatment.

Public Hearing and Acceptance Requirements

A PWS shall conduct a customer survey and participate in, and provide information for, a public hearing held by the State Board:

1. At least 30 days prior to initiating the activities required in Section 64418.6, the water system shall submit a protocol to the State Board for review and approval, describing the water system's plan to meet the requirements of the section.

2. Prior to conducting a customer survey, the following information should be disseminated at a public hearing:

Description of the Treatment Strategy, adverse health effects associated with contaminant(s) of concern, O&M Program and Monitoring Program information that necessitates customer involvement, and estimate of any anticipated increase in water bills that may result from utilization of POU/POEs

3. Following public hearing, the PWS shall survey all of its customers. **No substantial community opposition if:**

a. #non-voting customers + # voting against POU/POE is less than half of total # customers

b. No more than 25% of total customers voted against POU/POE

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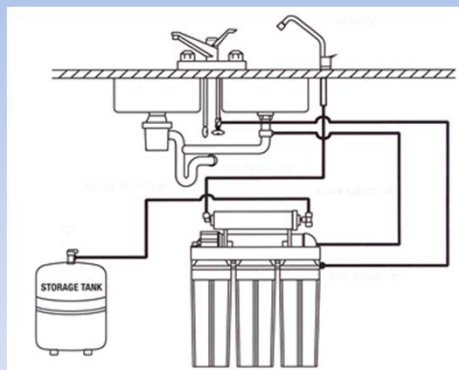
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Other Requirements

1. Prior to installing POU or POEs, a PWS shall submit a POU/POE Treatment Strategy for State Board review and obtain State Board approval of the Strategy.
2. Prior to installing POU or POEs, a PWS shall submit a POU/POE Operations and Maintenance (O&M) Program for State Board review and obtain State Board approval of the O&M Program. Some elements of the O&M Program are:
3. A PWS shall submit a POU/POE Monitoring Program for State Board review and obtain State Board approval of the Monitoring Program.

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Typical Reverse Osmosis POU Device Installation



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