

ATTACHMENT 1

Draft Order No. R3-2017-0003

Pure Water Monterey - Advanced Water Purification Facility
and
Groundwater Replenishment Project

**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
DRAFT ORDER NO. R3-2017-0003
WASTE DISCHARGE REQUIREMENTS AND WATER RECYCLING
REQUIREMENTS
FOR THE
PURE WATER MONTEREY
ADVANCED WATER PURIFICATION FACILITY
AND
GROUNDWATER REPLENISHMENT PROJECT
ISSUED TO
MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY**

The California Regional Water Quality Control Board, Central Coast Region (Central Coast Water Board) finds that:

I. BACKGROUND

1. The Monterey Regional Water Pollution Control Agency (MRWPCA) in partnership with the Monterey Peninsula Water Management District (MPWMD) has developed the "Pure Water Monterey Groundwater Replenishment Project" (Project) to deliver 3,500 acre-feet per year (AFY) of purified recycled water to replenish the Seaside Groundwater Basin (Seaside Basin), in Monterey County.
2. The MRWPCA is a joint powers authority (JPA) operating in the Monterey Bay area, with 11 members including Monterey County, City of Salinas, Boronda County Sanitation District, Castroville Community Services District, City of Del Rey Oaks, City of Monterey, City of Pacific Grove, City of Sand City, City of Seaside, Marina Coast Water District, and Moss Landing County Sanitation District.
3. The MRWPCA is the facility owner and is responsible for complying with all requirements of this Order and the Monitoring and Reporting Program.
4. Each JPA member has had sewage conveyance or treatment responsibilities in the past for its respective area of jurisdiction and is currently responsible for maintaining and operating its own collection system. The collection systems of the 11 member agencies all connect to MRWPCA's Regional Treatment Plant (RTP).
5. The MRWPCA currently serves a population of approximately 250,000 people and treats approximately 18.5 million gallons per day (MGD) of municipal wastewater at its RTP located two miles north of the City of Marina.
6. The RTP currently has a design capacity of 29.6 MGD.

7. California American Water Company (CalAm) is under a State Water Resources Control Board (SWRCB) cease and desist order (SWRCB Order No. 2009-0060) to secure replacement water supplies and cease over-pumping of the Carmel River. The Project will help CalAm to comply with the cease and desist order by allowing it to reduce diversions from the Carmel River system by 3,500 AFY by injecting the same amount of purified recycled product water into the Seaside Basin.
8. The Project will also include a drought reserve component by providing for an additional 200 AFY of product water that will be injected in the Seaside Basin in wet and normal years up to a total of 1,000 acre-feet (AF). Thus, the Project will inject up to 3,700 AF of product water into the Seaside Basin in some years, rather than the 3,500 AF needed for CalAm supplies. This will result in a “banked” drought reserve.
9. The Advanced Water Treatment Facility (AWPF) will be located adjacent to the RTP and will consist of ozone pre-treatment, low-pressure membrane filtration, reverse osmosis treatment, advanced oxidation, and product water stabilization.
10. Purified recycled water from the AWPF will be conveyed by pipeline to the Seaside Basin for groundwater recharge using both deep injection and vadose zone wells. The injected water will then mix with existing groundwater and be stored for future urban use, including use as a potable water source.
11. Additional recycled water from the RTP’s tertiary treatment system will augment the existing Castroville Seawater Intrusion Project’s agricultural irrigation supply.
12. The Project will supplement sewage flows to the RTP in order to increase the quantity of secondary effluent available as feed water. The sewage flows will be supplemented with:
 - agricultural wash water from the City of Salinas;
 - storm water flows from the southern part of Salinas;
 - storm water and urban agricultural runoff from the Reclamation Ditch; and
 - surface and agricultural tile drain waters from the Blanco Drain.
13. AWPF treated water will be conveyed by pipeline to the Seaside Basin for groundwater recharge using injection and vadose zone wells owned by MRWPCA. The injection wells will be arrayed just east of General Jim Moore Blvd. and south of Eucalyptus Road (see Figure 1).

II. PURPOSE OF ORDER

14. This Order authorizes the treatment of recycled water at the AWPF and injection of the treated water into the Seaside Basin aquifer.
15. On February 25, 2016, the MRWPCA submitted a Report of Waste Discharge requesting new waste discharge requirements and water recycling requirements (WDRs/WRRs) to reflect a proposal to operate the AWT facility and inject recycled water into the Seaside Basin.

16. On November 29, 2016, the Water Board sent a letter to MRWPCA notifying it that the Report of Waste Discharge letter was complete.
17. On August 22, 2016, the MRWPCA held a public hearing on the draft Title 22 Engineering Report for this project and on October 21, 2016, submitted a final version the Title 22 Engineering Report (Pure Water Monterey Groundwater Replenishment Title 22 Engineering Report) for operation of the Facility to the Central Coast Water Board and the State Water Resources Control Board Division of Drinking Water (DDW). The final Engineering Report was accepted by DDW on November 7, 2016.
18. MRWQCA has made changes to the project since the final Engineering Report was accepted by DDW.
19. DDW submitted a letter to the Central Coast Water Board with recommendations for conditions to properly regulate the Project on November 10, 2016.
20. The DDW conditions are incorporated into the provisions of this Order.

III. PURE WATER MONTEREY ADVANCED WATER PURIFICATION PROJECT

21. The Monterey Regional Water Pollution Control Agency (hereafter “MRWPCA” or “Discharger”) owns and operates the Advanced Water Purification Facility located at 14811 Del Monte Boulevard, located north east of Marina in Monterey County (see Figure 1). The facility is located just south of the Salinas River.

22. Primary Project Components:

1. The following source waters will be treated to secondary standards at the RTP:
 - Sewage from the MRWPCA member entities
 - Agricultural wash water from the City of Salinas
 - Storm water flows from the southern part of Salinas
 - Storm water and urban and agricultural runoff from the Reclamation Ditch
 - Surface and agricultural tile drain waters from the Blanco Drain
2. The Advanced Water Purification Facility (AWPFAWPF) has the following major components:
 - Supply water pump station
 - Ozonation (membrane filtration pretreatment)
 - Membrane filtration feed water pump station
 - Low Pressure Membrane Filtration (MF)
 - Reverse osmosis (RO) feed water pump station
 - RO system
 - Ultraviolet light (UV) with hydrogen peroxide advanced oxidation Process (AOP)
 - Post treatment stabilization
 - Product water pump station
3. Aquifer recharge by injection of purified recycled water into the Seaside

Basin.

Figure 1 - shows the approximate locations of the AWPf and the injection wells site.

Figure 2 - shows a simplified process flow diagram of the existing RTP and the AWPf.

Figure 3 - is a map of wells associated with and in the vicinity of the Project.

23. **AWPF Design Flows and Waste Streams** - The proposed AWPf will have a design capacity to produce 4.0 MGD of advanced treated recycled water. The facility will also produce seven waste streams: ozone injection strainer waste, MF backwash waste, neutralized MF enhanced flux maintenance waste, neutralized MF clean-in-place waste, neutralized RO clean-in-place waste, analytical instrument waste, and RO concentrate. The RO concentrate will be piped to MRWPCA's existing ocean outfall along with secondary wastewater effluent, and trucked brine. The other AWPf waste streams will be diverted to the RTP headworks or the RTP sludge thickening process for treatment.

24. **Ocean Discharge** - The RO concentrate will be sent to the existing ocean outfall regulated by Water Board Order No. R3-2014-0013, NPDES No. CA0048551 for disposal.

Because there will be new waste streams entering the RTP, and these waste streams will have seasonal variations in water quality, the Central Coast Water Board must modify MRWPCA's existing NPDES permit for discharge to the Pacific Ocean prior to project operation.

IV. RECYCLED WATER INJECTION SYSTEM

25. **Injection Facilities** – Injection facilities will be constructed along a strip of land on the eastern boundary of the City of Seaside, about 1.5 miles inland from Monterey Bay, in an area is located within the Northern Inland Subarea of the Seaside Basin. Each vadose zone well will be paired with a deep injection well (i.e. a well cluster) at each of the four proposed injection well locations. (Figure 3)

26. **Vadose Zone Wells** - Up to four vadose zone injection wells are planned (VZW-1 through VZW-4) in the Paso Robles aquifer. These wells are targeted to receive 10 percent of the advanced treated recycled water.

27. **Deep Injection Wells** - Up to four deep water injection wells (DIW-1 through DIW-4) are planned in the Santa Margarita aquifer. These wells are targeted to receive 90 percent of the advanced treated recycled water.

28. **Water Supply Wells Near the Injection Area** - Most supply wells near the injection facilities are located in the adjacent Northern Coastal Subarea. The closest water supply wells include Seaside No. 4 (operated by the City of Seaside) and two aquifer storage and recovery (ASR) wells, ASR-1 and ASR-2 (operated by the Monterey Peninsula Water Management District for CalAm). Each of these wells is located about 1,000 feet downgradient from a Project injection well (Figure 3).

29. **Monitoring Wells** - MRWPCA will construct two monitoring wells downgradient of each injection well cluster. One monitoring well must be located between two weeks to six months travel time and at least 30 days upgradient of the nearest drinking water well, and one monitoring well must be located between each well cluster and the nearest downgradient drinking water well. The monitoring wells will allow for samples to be obtained independently from each aquifer and validated as receiving recharge water from the Project.
30. **Recycled Water Retention Time** - The SWRCB Division of Drinking Water (DDW - formerly the California Department of Public Health) has adopted groundwater replenishment regulations (June 2014) for the recharge of recycled water. The DDW regulations contain requirements for underground retention time of recycled water that could also potentially affect well spacing. Recycled water must be retained underground for a sufficient period of time to identify and respond to any treatment failure so that inadequately treated recycled water does not enter a potable water system (referred to as the response retention time). The response retention time must be at least two months. The 1,000-ft distance between proposed project wells and the closest downgradient production wells is expected to result in a travel time of approximately one year. MRWPCA will propose a tracer study to DDW and the Central Coast Water Board and when approved, will conduct the study to confirm the underground retention time.

V. SEASIDE GROUNDWATER SUBBASIN

31. **Seaside Groundwater Basin** - Groundwater Bulletin 118 defines the Salinas Valley Groundwater Basin - Seaside Area Subbasin 3-4.08 as having a surface area of 25,900 acres, or approximately 40 square miles. The subbasin underlies the coastal communities of Seaside and Marina as well as the western portion of the former Fort Ord. The main water-bearing units of the subbasin are the Santa Margarita Formation and the Paso Robles Formation. The Santa Margarita Formation is poorly consolidated marine sandstone, has a maximum thickness of 225 feet, and underlies the Paso Robles Formation. The Paso Robles Formation is the major water-bearing unit in the Seaside area and consists of sand, gravel, and clay interbedded with some minor calcareous beds. The storage capacity of the subbasin is estimated to be 1,000,000 acre-feet.
32. **Seaside Groundwater Basin Salt & Nutrient Management Plan** - A salt and nutrient management plan (SNMP) was prepared for the Monterey Peninsula Management District, pursuant to the State Water Board's Recycled Water Policy in June of 2014. The SNMP has not been adopted by the Central Coast Water Board and will not be brought before the Board in its current form.

VII. REGULATION OF RECYCLED WATER

33. Legislation was adopted, effective July 1, 2014, that transferred personnel in the California Department of Public Health Drinking Water Program, which includes those working on permitting of recycled water projects, to the State Water Board as the new Division of Drinking Water (DDW). The regional water quality control boards are responsible for issuing water reclamation requirements for the beneficial use of recycled water. The State Water Board and regional water quality control boards are responsible for issuing waste discharge requirements for the production

of recycled water.

34. State authority to oversee production and reuse of recycled water use is shared by the State Water Board Division of Drinking Water and the Regional Water Boards. DDW is the division with the primary responsibility for establishing water recycling criteria under Title 22 of the Code of Regulations to protect the health of the public using the groundwater basins as a source of potable water.
35. The State Water Board adopted Resolution No. 77-1, Policy with Respect to Water Reclamation in California, which includes principles that encourage and recommend funding for water recycling and its use in water-short areas of the state. On September 26, 1988, the Central Coast Water Board adopted Resolution No. 88-012, which encourages the beneficial use of recycled water and supports water recycling projects.
36. The State Water Board adopted the Recycled Water Policy (State Water Board Resolution No. 2009-0011) on February 3, 2009, and amended the Policy on January 22, 2013. The purpose of the Recycled Water Policy is to protect groundwater resources and to increase the beneficial reuse of recycled water from municipal wastewater sources in a manner consistent with state and federal water quality laws and regulations. The Recycled Water Policy describes the respective authorities of DDW and the regional water quality control boards as follows:

Regional Water Boards shall appropriately rely on the expertise of DDW for the establishment of permit conditions needed to protect human health. (section 5.b)

Nothing in this paragraph shall be construed to limit the authority of a Regional Water Board to protect designated beneficial uses, provided that any proposed limitations for the protection of public health may only be imposed following regular consultation by the Regional Water Board with DDW, consistent with State Water Board Orders WQ 2005-0007 and 2006-0001. (section 8.c)

Nothing in this Policy shall be construed to prevent a Regional Water Board from imposing additional requirements for a proposed recharge project that has a substantial adverse effect on the fate and transport of a contaminant plume or changes the geochemistry of an aquifer thereby causing dissolution of constituents, such as arsenic, from the geologic formation into groundwater. (section 8.d)

In addition, the Policy notes the continuing obligation of the Regional Water Boards to comply with the state's anti-degradation policy, Resolution No. 68-16:

The State Water Board adopted Resolution No. 68-16 as a policy statement to implement the legislature's intent that waters of the state shall be regulated to achieve the highest water quality consistent with the maximum benefit to the people of the state. (section 9.a)

37. Section 13523(a) of the Water Code provides that a regional water quality control board, after consulting with and receiving recommendations from DDW, and after any necessary hearing, shall, if it determines such action to be necessary to protect the health, safety, or welfare of the public, prescribe water recycling requirements for water that is used or proposed to be used as recycled water. Pursuant to Water Code section 13523, the Central Coast Water Board has consulted with DDW and received its recommendations. On August 22, 2016, DDW participated in a public hearing to consider the proposed Pure Water Monterey Groundwater Replenishment Project. On October 21, 2016, DDW transmitted to the Central Coast Water Board its conditions concerning the Pure Water Monterey Project. DDW's recommendations are included in this order as requirements.
38. Section 13540 of the Water Code requires that recycled water may only be injected into an aquifer used as a source of domestic water supply if DDW finds the recharge will not degrade the quality of the receiving aquifer as a source of water supply for domestic purposes. DDW determined that as long as the water reclamation requirements meet all of its conditions, the Pure Water Monterey Groundwater Replenishment Project can provide injection recharge water that will not degrade groundwater basins as a source of water supply for domestic purposes. This Order requires that the Discharger comply with all of the recommended DDW conditions.
39. Section 13523(b) of the Water Code provides that reclamation requirements shall be established in conformance with the uniform statewide recycling criteria established pursuant to Water Code section 13521. Section 60320 of Title 22 currently includes requirements for groundwater recharge projects.
40. The State Water Resources Control Board adopted uniform water recycling criteria for groundwater recharge on July 15, 2014. This Order is consistent with those criteria.

VIII. OTHER APPLICABLE PLANS, POLICIES AND REGULATIONS

A. Regional Board Water Quality Control Plan (Basin Plan)

41. The Central Coast Water Board has adopted the *Water Quality Control Plan for the Central Coastal Basin* (Basin Plan). The Basin Plan designates beneficial uses for surface water and groundwater; establishes narrative and numeric water quality objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and to conform with the state's anti-degradation policy; and includes implementation provisions, programs, and policies to protect all waters in the region. In addition, the Basin Plan incorporates applicable State Water Board and Central Coast Water Board plans and policies and other pertinent water quality policies and regulations.
42. The Basin Plan incorporates the California Code of Regulations (CCR) Title 22 primary Maximum Contaminant Levels (MCLs) by reference. This incorporation is prospective, including future changes to the incorporated provisions as the changes take effect. The Basin Plan states that groundwater designated for use as domestic or municipal supply shall not contain concentrations of chemical

constituents and radionuclides in excess of the MCLs. The Basin Plan also specifies concentrations that cause nuisance or adversely affect beneficial uses.

43. For the Seaside Basin, the Basin Plan includes general narrative groundwater objectives for taste and odor and radioactivity and numeric objectives for:
- Bacteria - the median concentration of coliform organisms (i.e., total coliform) over any seven-day period must be less than 2.2/100 mL; and
 - Chemical constituents - groundwater shall not contain chemical concentrations in excess of primary and secondary MCLs.:

Table 1 – Water Quality Goals

Receiving Water			Beneficial Uses			
Seaside Aquifer			Municipal and Domestic Water Supply (MUN) Industrial Service Supply (IND) Agricultural Supply (AGR)			
Water Quality Goals - Sources						
	WQG	Units	CA Primary MCL	CA Secondary MCL	CA Public Health Goal for Drinking Water	Water Quality for Agriculture (Basin Plan)
Aluminum	1,000	µg/L	X			
Arsenic	10	µg/L	X			
Barium	1,000	µg/L	X			
Boron	750	µg/L				X
Cadmium	10	µg/L				X
Chloride	250	mg/L		X		
Chromium (total)	0.02	µg/L			X	
Iron	300	µg/L		X		
Lead	0.2	µg/L			X	
Manganese	50	µg/L		X		
Nitrate - N	10	mg/L	X			
pH	6.5-8.4	pH Units				X
Sodium	69	mg/L	<i>WQ Goals – Marshak, WQ for Ag (Ayers & Wescot)</i>			
Sulfate	250	mg/L		X		
TDS	500	mg/L		X		
Zinc	2.0	mg/L				X

44. Four wells were used to establish existing groundwater water quality and assimilative capacity of the aquifer and sub-aquifers. The most recent five years of data (2011-2016) were analyzed for each well and the data are presented in Table 2. Two of the wells draw their water from both the Paso Robles and Santa Margarita aquifers (Ord Grove No. 2 and Paralta). One well draws water exclusively from the Paso Robles aquifer (City of Seaside No. 4) and one well draws exclusively from the Santa Margarita aquifer (ASR-1).

Table 2 - Existing Groundwater Quality in the Seaside Basin

Constituent	City of Seaside No.4	ASR-1	Ord Grove No. 2	Paralta	Basin-Wide Averages
Aluminum	50	50	26	50	42
Arsenic	1.2	1.8	2.0	2.5	2.1
Barium	28	100	100	100	94
Boron	46	95	132	96	108
Chloride	72	63	129	94	103
Chromium-total	3.6	9.3	10	10	9.1
Chromium VI	-	1.0	0.8	2.3	1.4
Lead	5	3.7	5.0	5.0	4.5
Nitrate as N	1.9	0.1	1.7	0.5	1.1
Sodium	50	60	94	79	79.7
Sulfate	13	77	63	58	54.9
TDS	237	406	524	435	449
TOC	0.5	1.0	0.6	0.6	0.7

*Source: averages of well water quality data submitted by MRPCA on November 9, 2016

*Concentrations are in µg/L except chloride, nitrate, sodium, sulfate, TDS, and TOC, which are mg/L

45. MRWPCA completed a focused groundwater quality evaluation, utilizing the available groundwater quality data for the four water supply wells named in Table 2, and constructed a three-dimensional solute transport model to predict localized and basin-wide groundwater quality changes resulting from the mixing of injected recycled water and ambient groundwater. The model analyzed the percentage of assimilative capacity consumed by the Project after 25 years. The results of the evaluation are presented in Table 3. MRWPCA also demonstrated that when effluent limits are equal to the applicable water quality objective for each constituent, the percentage of recycled water present in the aquifer equals the percentage of assimilative capacity consumed. This analysis confirms that less than 10% of the basin’s assimilative capacity will be utilized by this project and that beneficial uses will be protected.

Table 3. Volume-Weighted Average = % Assimilative Capacity Consumed

Modeled Layer	Volume-Weighted Average Recycled Water Percentage				
	Northern Coastal	Northern Inland	Southern Coastal	Laguna Seca	All Subareas
1	0.1%	0.0%	0.0%	0.0%	0.0%
2	0.5%	2.2%	0.0%	0.0%	1.0%
3	4.0%	2.1%	0.0%	0.0%	1.7%
4	2.1%	0.6%	0.0%	0.0%	0.8%
5	5.3%	7.2%	0.0%	0.0%	3.8%
Paso Robles Aquifer	1.8%	1.7%	0.0%	0.0%	1.1%
Santa Margarita Aquifer	5.3%	7.2%	0.0%	0.0%	3.8%
All Model Layers	3.3%	4.2%	0.0%	0.0%	2.4%

46. Any constituent that currently exceeds its applicable water quality objective in the groundwater basin will see its water quality improved by discharges of recycled water below the water quality objective concentration.
47. The Basin Plan contains the following specific water quality objectives for groundwater:

MUNICIPAL AND DOMESTIC SUPPLY (MUN)

- Bacteria - The median concentration of coliform organisms over any seven-day period shall be less than 2.2/100 mL.
- Organic Chemicals - Ground waters shall not contain concentrations of organic chemicals in excess of the limiting concentrations set forth in California Code of Regulations, Title 22, Chapter 15, Article 5.5, Section 64444.5 Table 5, and listed in Basin Plan Table 3-1.
- Chemical Constituents - Ground waters shall not contain concentrations of chemical constituents in excess of the limits specified in California Code of Regulations, Title 22, Chapter 15, Article 4, Section 64435, Tables 2 and 3.
- Radioactivity - Ground waters shall not contain concentrations of radionuclides in excess of the limits specified in California Code of Regulations, Title 22, Chapter 15, Article 5, Section 64443, Basin Plan Table 4.

AGRICULTURAL SUPPLY (AGR)

- Ground waters shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use. Interpretation of adverse effect shall be as derived from the University of California Agricultural Extension Service guidelines provided in Basin Plan Table 3-3.
- In addition, water used for irrigation and livestock watering shall not exceed the concentrations for those chemicals listed in Basin Plan Table 3-4. No controllable water quality factor shall degrade the quality of any ground water resource or adversely affect long-term soil productivity. The salinity control aspects of ground water management will account for effects from all sources.

This Order protects Seaside Basin groundwater water quality objectives and is therefore consistent with the Basin Plan.

B. State Water Resources Control Board Policies

48. The Sources of Drinking Water Policy (Resolution No. 88-63) provides that all waters of the state, with certain exceptions, are to be protected as existing or potential sources of municipal and domestic supply. Exceptions include waters with existing high dissolved solids (i.e., greater than 3,000 mg/L), low sustainable yield (less than 200 gallons per day for a single well), waters with contamination that cannot be treated for domestic use using best management practices or best economically achievable treatment practices, waters within particular municipal, industrial and agricultural wastewater conveyance and holding facilities, and regulated geothermal ground waters. This Order protects existing or potential sources of drinking water and is therefore consistent with Resolution No. 68-63.
49. On October 28, 1968, the State Water Board adopted Resolution No. 68-16,

Statement of Policy with Respect to Maintaining High Quality of Waters in California (Resolution 68-16), establishing an anti-degradation policy for the State Water Board and Regional Water Boards. Resolution No. 68-16 requires that existing high quality of waters be maintained unless a change is demonstrated to be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of waters, and will not result in water quality less than that prescribed in applicable policies. Resolution No. 68-16 also requires that waste discharge requirements be prescribed for discharges to high quality waters that will result in the best practicable treatment or control of the discharge necessary to ensure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained. The Central Coast Water Board's Basin Plan implements, and incorporates by reference, the state anti-degradation policy.

50. This order is consistent with Resolution No. 68-16 (anti-degradation policy). Groundwater recharge with recycled water for later extraction and use in accordance with the Recycled Water Policy and state and federal water quality laws is to the benefit of the people of the State of California.

Compliance with this Order will protect present and anticipated beneficial uses of groundwater, ensure attainment of water quality prescribed in applicable policies, and avoid any conditions of pollution or nuisance. Although this Order may allow some degradation to water quality, the Order does not authorize the Project to cause exceedances of applicable water quality goals or objectives for the basin.

51. A goal of the Recycled Water Policy, Resolution No. 2013-0003, is to increase the beneficial use of recycled water from municipal wastewater sources in a manner consistent with state and federal water quality laws and regulations. The Policy directs the Regional Water Boards to collaborate with generators of municipal wastewater and interested parties in the development of salt and nutrient management plans (SNMPs) to manage the loading of salts and nutrients to groundwater basins in a manner that is protective of beneficial uses, thereby supporting the sustainable use of local waters. No SNMP has been adopted by the Central Coast Water Board for the Seaside Basin.

The Recycled Water Policy also states that until such time as a salt and nutrient management plan has been approved by the Water Board and is in effect, compliance with Resolution No. 68-16 for projects that consume less than 10 percent of the available assimilative capacity in a basin/sub-basin may be demonstrated by conducting an antidegradation analysis verifying the use of assimilative capacity. This Order supports the sustainable use of local waters and ensures that the Project will consume less than 10 percent of available assimilative capacity, which is consistent with the Recycled Water Policy

52. DDW has established a notification level of 10 nanograms per liter (ng/L) for N-nitrosodimethylamine (NDMA). NDMA can be produced by reactions that occur during chlorination and has been determined to be a potent carcinogen. The notification level is the concentration of a contaminant in drinking water delivered for human consumption that DDW has determined, based on available scientific information, does not pose a significant health risk but warrants notification. Notification levels are established as precautionary measures for contaminants that

may be considered candidates for establishment of maximum contaminant levels, but have not yet undergone or completed the regulatory standard setting process prescribed for the development of maximum contaminant levels and are not drinking water standards. DDW has established a response level of 300 ng/L for NDMA. The response level is the concentration of a contaminant in drinking water delivered for human consumption at which DDW recommends that additional steps, beyond notification, be taken to reduce public exposure to the contaminant.

C. California Water Code

53. Pursuant to California Water Code (Water Code) section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking and sanitary purposes.
54. Pursuant to Water Code section 13263(g), discharges of waste into waters of the state are privileges, not rights. Nothing in this order creates a vested right to continue the discharge. Water Code section 13263 authorizes the Central Coast Water Board to issue waste discharge requirements that implement any relevant water quality control plan.
55. Section 13267(b) of the Water Code states, in part:

In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging or who proposes to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste outside of its region shall furnish under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

Section 13267(d) of the Water Code states, in part:

[A] regional board may require any person, including a person subject to waste discharge requirements under section 13263, who is discharging, or who proposes to discharge, wastes or fluid into an injection well, to furnish the state board or regional board with a complete report on the condition and operation of the facility or injection well, or any other information that may be reasonably required to determine whether the injection well could affect the quality of the waters of the state.

56. The need for the technical and monitoring reports required by this order, including the Monitoring and Reporting Program, is based on the Report of Waste Discharge (ROWD), the DDW's recommended conditions, the California Environmental Quality Act (CEQA) environmental impact report, the Title 22 Engineering Report, and other information in the Central Coast Water Board's files for the facility. The technical and

monitoring reports are necessary to ensure compliance with these waste discharge requirements and water recycling requirements. The burden, including costs, of providing the technical reports required by this Order bears a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

57. This order includes limits on quantities and concentrations of chemical, physical, biological, and other pollutants in the advanced treated recycled water that is injected into groundwater.
58. This order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, §§ 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all applicable requirements of the endangered species acts.

IX. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AND NOTIFICATION

59. An environmental impact report (EIR) was prepared for the proposed Pure Water Monterey Groundwater Replenishment Project with MRWPCA serving as the lead agency. (State Clearinghouse # 2013051094)
- a. Notices regarding the April 2015 draft EIR were emailed to 700 agencies, interested organizations, and individuals; placed as newspaper advertisements; distributed to state agencies through the State Clearinghouse; placed in public locations such as libraries, MRWPCA's and Monterey Peninsula Water Management District's (MPWMD's) websites and offices and key project sites; and posted with the Monterey County Clerk.
 - b. Public meetings to provide information on the Project and CEQA process were held on May 20 and 21, 2015.
 - c. The public was provided a 45-day comment period for the draft EIR.
 - d. Notices about the availability of the final EIR were distributed in September 2015 to all entities that received the draft EIR, commented on the Draft EIR, or requested a copy or copies.
 - e. The MRWPCA adopted Resolution No. 2015-24 on October 8, 2015, after a public hearing, which certified the final EIR, adopted the CEQA findings, approved mitigation measures and a mitigation monitoring and reporting program, adopted a statement of overriding considerations, and approved the project as modified. This Order, at General Requirement IV.10, requires that the Discharger comply with the mitigation measures and mitigation monitoring program identified in the final EIR.
 - f. The final EIR contains oral and written comments received on the draft EIR and presents responses to environmental issues raised in the comments. In addition to the responses to comments, the final EIR contains revisions, updates, and clarifications in response to public comment on the draft EIR.

- g. A notice of determination (NOD) was filed with the State Clearinghouse and the Monterey County Clerk's office on October 8, 2015. The Project has completed the notification and review process required by CEQA. The Central Coast Water Board is a responsible agency for purposes of CEQA. The Central Coast Water Board, as a responsible agency under CEQA, has considered the EIR and associated documents and concurs with MRWPCA's approval of the relevant CEQA documents. The Central Coast Water Board finds that all environmental effects have been identified for project activities that it is required to approve and that the Project will not have significant adverse impacts on the environment provided that the mitigation presented in the EIR for components of the Project being approved by this Order and the required Operation Optimization Plan are carried out as conditioned in this Order (see General Requirement IV.10 in this Order). In adopting this Order, the Central Coast Water Board has eliminated or substantially lessened the less-than-significant effects on water quality, and therefore approves the project.
60. Any person aggrieved by this action may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Water Code section 13320 and California Code of Regulations, Title 23, section 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the internet at:
- http://www.waterboards.ca.gov/public_notices/petitions/water_quality/
61. The Central Coast Water Board has notified the MRWPCA and interested agencies and persons of its intent to issue this Order for the production and use of recycled water and has provided them with an opportunity to submit written comments. The Central Coast Water Board, in a public meeting, heard and considered all comments pertaining to these WDRs/WRRs.

THEREFORE, IT IS HEREBY ORDERED that Order No. R3-2017-0003, with MRP No. R3-2017-0003, is effective as of the date of this order, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations and guidelines adopted thereunder, and California Code of Regulations Title 22, division 4, chapter 3, the MRWPCA shall comply with the requirements in this Order.

I. INFLUENT SPECIFICATIONS

The influent to the MRWPCA Advanced Water Treatment Facility shall consist of secondary treated wastewater discharged from the RTP. The wastewater coming into the RTP will be augmented with agricultural wash water from the City of Salinas, storm water flows from the southern part of Salinas, and surface and agricultural tile drain waters from the Reclamation Ditch and Blanco Drain as described in the approved 2016 Title 22 Engineering Report.

II. RECYCLED WATER TREATMENT SPECIFICATION

Treatment of the recycled water is as described in the findings of this Order and the recommended conditions issued by DDW.

III. RECYCLED WATER DISCHARGE LIMITS

1. The advanced treated recycled water injected into any well at the injection facility shall not contain pollutants in excess of the following limits:

Table 4 – Recycled Water Reinjection Discharge Limits

Constituents	Units	Concentration	Monitoring Frequency	Compliance Interval
*Arsenic	mg/L	0.01	Monthly	Running Annual Average
*Boron	µg/L	750	Monthly	Running Annual Average
*Chloride	mg/L	250	Monthly	Running Annual Average
*Nitrate as N	mg/L	10	Weekly	Sample Result: no averaging
**Nitrogen - Total	mg/L	10	Twice per Week	Average of Last 4 Results
*Sodium	mg/L	69	Monthly	Running Annual Average
*Sulfate	mg/L	250	Monthly	Running Annual Average
*TDS	mg/L	500	Monthly	Running Annual Average
**Total Organic Carbon (TOC)	mg/L	0.5	Weekly	20-week running average and average of last 4 results
**Total Coliform	MPN/100mL	<2.2	Daily	7-day Median

**Limits equal to Water Quality Objectives, except **TOC, Total Nitrogen, and Total Coliform, which are Title 22 limits*

IV. GENERAL REQUIREMENTS

1. Recycled water shall not be used for direct human consumption or for the processing of food or drink intended for human consumption.
2. Bypass, discharge, or delivery to the use area of inadequately treated recycled water, at any time, are prohibited.
3. The AWPf and all injection wells shall be adequately protected from inundation and damage by storm flows.
4. Recycled water use or disposal shall not result in earth movement in

- geologically unstable areas.
5. Odors of sewage origin shall not be perceivable at any time outside the boundary of the Facility.
 6. The MRWPCA shall at all times properly operate and maintain all treatment facilities and control systems (and related appurtenances) that are installed or used by the MRWPCA to achieve compliance with the conditions of this order. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls (including appropriate quality assurance procedures).
 7. A copy of these requirements shall be maintained at the Facility and available at all times to operating personnel.
 8. For any material change or proposed change in character, location, or volume of recycled water or its uses, the MRWPCA shall submit at least 120 days prior to the proposed change an engineering report or addendum to the existing engineering report to the Central Coast Water Board and DDW (pursuant to Water Code Division 7, Chapter 7, Article 4, section 13522.5 and CCR Title 22, Division 4, Chapter 3, Article 7, section 60323) for approval. The engineering report shall be prepared by a qualified engineer registered in California.
 9. MRWPCA shall revise the Title 22 Engineering Report to reflect operational choices made and to correct no longer applicable and incorrect information discovered during the permitting process. MRWPCA shall have the revised report approved by DDW and the Water Board prior to commencing groundwater injection discharges to the Seaside Basin.
 10. MRWPCA shall comply with the mitigation measures and mitigation monitoring and reporting program described in the final EIR for this project, as described in the findings of this Order. Mitigation measures of concern to and within the jurisdiction of the Central Coast Water Board include BT-1a, BF-1a, BF-1b, BF-1c, BF-2a, alternate BF-2a, and HS-4.

V. PROVISIONS

1. Injection of the advanced treated recycled water shall not cause or contribute to an exceedance of water quality objectives in Seaside Basin groundwater.
2. The MRWPCA shall submit to the Central Coast Water Board, under penalty of perjury and signed by a designated responsible party, self-monitoring reports according to the specifications contained in the MRP, as directed by the Executive Officer.
3. The MRWPCA shall notify the Central Coast Water Board, DDW and all water purveyors drawing potable water from the Seaside Basin (immediately following notification to the Water Board and DDW) by telephone or electronic means as soon as MRWPCA becomes aware, but no later than 24 hours after obtaining knowledge of any violations of this order, or any adverse conditions as a result of the use of recycled water from this facility; written confirmation shall

follow to the Central Coast Water Board and DDW within five working days from date of notification. The report shall include, but not be limited to, the following information, as appropriate:

- a. The nature and extent of the violation;
 - b. The date and time when the violation started, when compliance was achieved, and when injection was suspended and restored, as applicable;
 - c. The duration of the violation;
 - d. The cause(s) of the violation;
 - e. Any corrective and/or remedial actions that have been taken and/or will be taken with a time schedule for implementation to prevent future violations; and,
 - f. Any impact of the violation.
4. This Order does not exempt the MRWPCA from compliance with any other laws, regulations, or ordinances which may be applicable, it does not legalize the recycling and use facilities, and it leaves unaffected any further constraint on the use of recycled water at certain sites that may be contained in other statutes or required by other agencies.
 5. This Order does not alleviate the responsibility of the MRWPCA to obtain other necessary local, state, and federal permits to construct facilities necessary for compliance with this Order, nor does this Order prevent imposition of additional standards, requirements, or conditions by any other regulatory agency.
 6. This Order may be modified, revoked and reissued, or terminated for cause, including but not limited to, failure to comply with any condition in this Order; endangerment of human health or environment resulting from the permitted activities in this Order; obtaining this Order by misrepresentation or failure to disclose all relevant facts; or acquisition of new information that could have justified the application of different conditions if known at the time of Order adoption. The filing of a request by the MRWPCA for modification, revocation and reissuance, or termination of the Order or a notification of planned changes or anticipated noncompliance does not stay any condition of this Order.
 7. The MRWPCA shall furnish, within a reasonable time, any information the Central Coast Water Board or DDW may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The MRWPCA shall also furnish the Central Coast Water Board, upon request, with copies of records required to be kept under this Order for at least three years.
 8. In an enforcement action, it shall not be a defense for the MRWPCA that it would have been necessary to halt or to reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the treatment facility, the MRWPCA shall, to the extent necessary to maintain

compliance with this Order, control production of all discharges until the facility is restored or an alternative method of treatment is provided. This provision applies, for example, when the primary source of power of the treatment facility fails, is reduced, or is lost.

9. This Order includes the attached *Standard Provisions and Reporting Requirements for Waste Discharge Requirements*. If there is any conflict between the provisions stated in this Order and the Standard Provisions, the provisions stated in this Order shall prevail.
10. This Order includes the attached MRP No. R3-2017-0003. If there is any conflict between provisions stated in the MRP and the Standard Provisions, those provisions stated in the MRP prevail. The MRP may be modified by the Central Coast Water Board's Executive Officer; however, any such modified requirements must still achieve the MRP's primary purpose, which is to detect violations, confirm effective treatment, and to ensure that neither excessive degradation in the aquifer nor adverse impacts to beneficial uses occurs. Excessive degradation is defined as the discharge consuming 10 percent or more of available assimilative capacity.
11. The DDW conditions that are not explicitly included in this Order are incorporated herein by this reference, and are enforceable requirements of this Order. Any violation of a term in this Order that is identical to a DDW condition will constitute a single violation.

VI. STATE WATER RESOURCES CONTROL BOARD DIVISION OF DRINKING WATER (DDW) REQUIREMENTS

1. The Pure Water Monterey Groundwater Replenishment Project (Project) shall comply with Article 5.2 - Indirect Potable Reuse: Groundwater Replenishment-Subsurface Application, sections 60320.200 through 60320.228 of Title 22, California Code of Regulations.
2. The Project's advanced water treatment facility (AWPF) shall conduct startup and commissioning testing that meets the requirement in Title 22 section 60320.201. Advanced Treatment Criteria. A test protocol must be submitted to DDW for approval prior to commencement of testing.
3. The Project AWPF shall be operated to meet the requirements in section 60320.222. Operation Optimization and Plan.
4. As required by Title 22 section 60320.222. (Operation Optimization Plan), prior to operation, MRWPCA shall submit an Operation Optimization Plan for review and approval to DDW and the Central Coast Water Board. At a minimum, the Operation Optimization Plan shall identify and describe the operations, maintenance, analytical methods, monitoring (grab and online) necessary for the Project to meet the requirements and the reporting of monitoring results. MRWPCA must submit a draft of the Operation Optimization Plan prior to the construction and commissioning. The draft Operation Optimization Plan can be amended and finalized after the completion of full-scale commissioning and startup testing. A final Operation Optimization Plan must be submitted to DDW 90 days after completion of startup operations.

5. AWPf commissioning shall validate and confirm the actual setpoints for hydrogen peroxide and UV parameters, demonstrating that the advanced oxidation process (AOP) will provide no less than 0.5-log (69 percent) reduction of 1,4-dioxane.
6. MRWPCA shall follow what is described in the approved Operation Optimization Plan.
7. The Project's Operation Optimization Plan shall, at all times, be representative of the current operations, maintenance, and monitoring.
8. The Project's AWPf shall provide continuous real-time monitoring and reporting of UV dose, UV Transmittance, and power used in the AOP.
9. The Project must have alarms as stated in the approved Title 22 Engineering Report. Commissioning shall validate and confirm the actual setpoints and they shall be specified in the Operation Optimization Plan.
10. For reporting, MRWPCA shall submit to DDW a summary of monthly operational parameters for UV dose and hydrogen peroxide for the AWPf.
11. MRWPCA shall verify that the recycled municipal wastewater used for the Project meets the requirements in Title 22 section 60320.206. Wastewater Source Control.
12. Pursuant to Title 22 section 60320.208 (a) Pathogenic Microorganism Control (a), MRWPCA shall operate the Project such that the recycled municipal wastewater used as recharge water receives treatment that achieves at least 12-log enteric virus reduction, 10-log Giardia cyst reduction, and 10-log Cryptosporidium oocyst reduction.
13. If a pathogen reduction in Title 22 section 60320.208 (a) is not met based on the on-going monitoring required pursuant to subsection (c), within 24 hours of being aware, MRWPCA shall immediately investigate the cause and initiate corrective actions. MRWPCA shall immediately notify the DDW and the Central Coast Water Board if the Project fails to meet the pathogen reduction criteria longer than 4 consecutive hours, or more than a total of 8 hours during any 7-day period. Failures of shorter duration shall be reported to the Central Coast Water Board by MRWPCA no later than 10 days after the month in which the failure occurred.
14. Per the approved Title 22 Engineering Report, the initial maximum Recycled Water Contribution (RWC) shall be 1.0, meaning that the Project is approved to use 100% recycled water for recharging the aquifer at the beginning. As long as the Project can demonstrate that it can reliably meet Total Organic Carbon (TOC) requirements, they will be allowed to maintain the RWC of 1.0.
15. The Project contains a multi-barrier treatment facility in order to comply with the Groundwater Replenishment Regulations. The following monitoring (grab and online) and reporting requirements will need to be included in the Operation Optimization Plan and reported to DDW and the Central Coast Water Board monthly.
 - a. Membrane integrity testing (MIT) shall be performed on each of the MF membrane units, a minimum of once every 24 hours of operation.

- i. The log removal value (LRV) for Cryptosporidium shall be calculated and the value reported after the completion of each MIT.
 - ii. The MIT shall have a resolution that is responsive to an integrity breach on the order of 3 μm or less.
 - iii. Calculations of the LRV shall be based on a pressure decay rate (PDR) value with an ending pressure that provides a resolution of 3 μm or less.
 - iv. The MIT shall have a sensitivity to verify a LRV equal to or greater than 4.0.
- b. The Reverse Osmosis (RO) system shall be credited pathogen reduction at this facility in accordance with the amount demonstrated via online monitoring to ensure the integrity of the RO system. MRWPCA must monitor the effluent of each RO train (including each stage) continuously for conductivity at the AWPf. The daily average and maximum conductivity reading, and the percent of time that the reduction of conductivity is less than 1.0 log removal must be reported. The MRWPCA shall calculate the minimum removal achieved at the AWPf. An alternative surrogate may be utilized if approved by the Division of Drinking Water and the Central Coast Water Board.
- c. The RO effluent will be monitored for TOC via grab sample weekly and reported in the monthly report. The RO influent and effluent will be monitored for TOC online and reported in the monthly report. The daily average and maximum TOC reading and the percent of time that the TOC is greater than 0.5 mg/L must be reported.
- d. In accordance with the Recycled Water Policy, NDMA and sucralose are performance surrogates for RO and shall be analyzed quarterly both prior to the RO and after RO prior to the AOP.
- e. The UV/peroxide system shall be operated, as has been designed, to meet the Groundwater Replenishment Regulations, providing a minimum 0.5-log reduction of 1,4- dioxane. AOP commissioning will validate and confirm the actual setpoints for peroxide and UV parameters
- f. The UV system must be operated with online monitoring and built-in automatic reliability features that must trigger automatic diversion of effluent to waste by the following critical alarm setpoints.
 - i. UV dose less than 900 mJ/cm^2 , or a new setpoint approved by DDW after the AOP commissioning.
 - ii. UV transmittance less than 95%
 - iii. Complete UV reactor failure
 - iv. Peroxide residual less than 3.0 mg/L, or a new setpoint approved by DDW after the AOP commissioning.
- g. On-line monitoring of UV dose, UV intensity, flow, and UV transmittance must be provided at all times. Flow meters, UV intensity sensors, and UV transmittance monitors must be properly calibrated.

- h. At least monthly, all duty UV intensity sensors must be checked for calibration against a reference UV intensity sensor.
 - i. The UV transmittance meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.
 - j. The monitoring and reliability features, including automatic shutdown capability, shall be demonstrated to DDW during a plant inspection prior to final approval.
 - k. Based on the calculation of log reduction achieved daily by the entire treatment facility, from the WWTP to the public water supply wells, the MRWPCA will report a "Yes" or "No" for each day as to whether the necessary log reductions (12-logs virus, 10-logs for Giardia and Cryptosporidium) have been achieved. An overall log reduction calculation will be provided only for those days when a portion of the treatment facility does not achieve the necessary log reductions.
16. MRWPCA shall submit the required annual and five-year reports per Title 22, section §60320.228 (Reporting).
17. MRWPCA must submit for approval a draft AOP commissioning and testing protocol, to demonstrate the AOP will provide no less than 0.5-log (69 percent) reduction of 1,4-dioxane.
18. MRWPCA must submit a draft of the Operation Optimization Plan prior to the construction and commissioning. This draft Operation Optimization Plan can be amended and finalized after the completion of full-scale commissioning and startup testing. A final Operation Optimization Plan must be submitted to DDW 90 days after completion of startup operations.
19. MRWPCA must submit an addendum to the Title 22 Engineering Report to include information on final well configurations and locations (injection wells, vadose zone wells, and monitoring wells). MRWPCA must conduct a Water Board-approved tracer test, and submit a completed tracer study report to DDW and the Central Coast Water Board.

VII. REOPENER

- 1. This Order may be reopened to include the most scientifically relevant and appropriate limitations for this discharge, including a revised Basin Plan limit based on monitoring results, anti-degradation studies, or other Central Coast Water Board or State Water Board policy, or the application of an attenuation factor based upon an approved site-specific attenuation study.
- 2. This Order may be reopened to modify limitations for pollutants to protect beneficial uses, based on new information not available at the time this Order was adopted, including additional monitoring, reporting and trend analysis documenting aquifer conditions.
- 3. After additional monitoring, reporting, and trend analysis documenting aquifer conditions, this Order may be reopened to ensure the groundwater is protected in a manner consistent with state and federal water quality laws, policies and regulations.

4. This Order may be reopened to incorporate any new regulatory requirements for sources of drinking water or injection of recycled water for groundwater recharge to aquifers that are used as a source of drinking water, that are adopted after the effective date of this Order.
5. This Order may be reopened upon a determination by DDW that treatment and disinfection of the Monterey Regional Water Pollution Control Agency advanced treated product water is not sufficient to protect human health.

VIII. ENFORCEMENT

The requirements of this Order are subject to enforcement under Water Code sections 13261, 13265, 13268, 13350, and enforcement provisions in Water Code, Division 7, Chapter 7 (Water Reclamation).

IX. EFFECTIVE DATE OF THE ORDER

This Order takes effect on March 9, 2017.

I, John M. Robertson, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the Regional Water Quality Control Board, Central Coast Region on March 9, 2017.

John M. Robertson
Executive Officer



Figure 1 - Location of MRWPCA's RTP, AWPf and Injection Wells

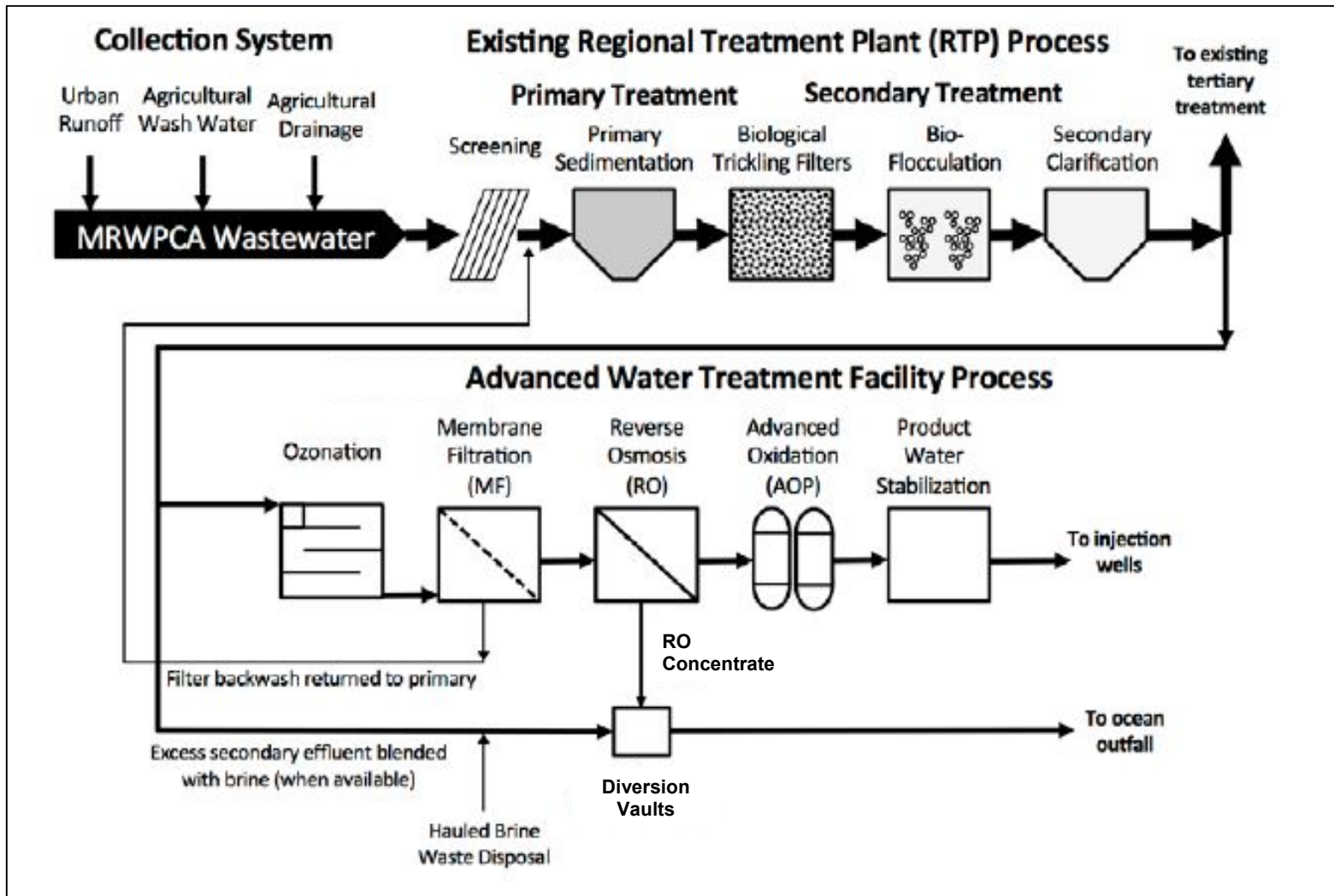


Figure 2 – Simplified Process Flow Diagram of MRWPCA RTP and AWPf

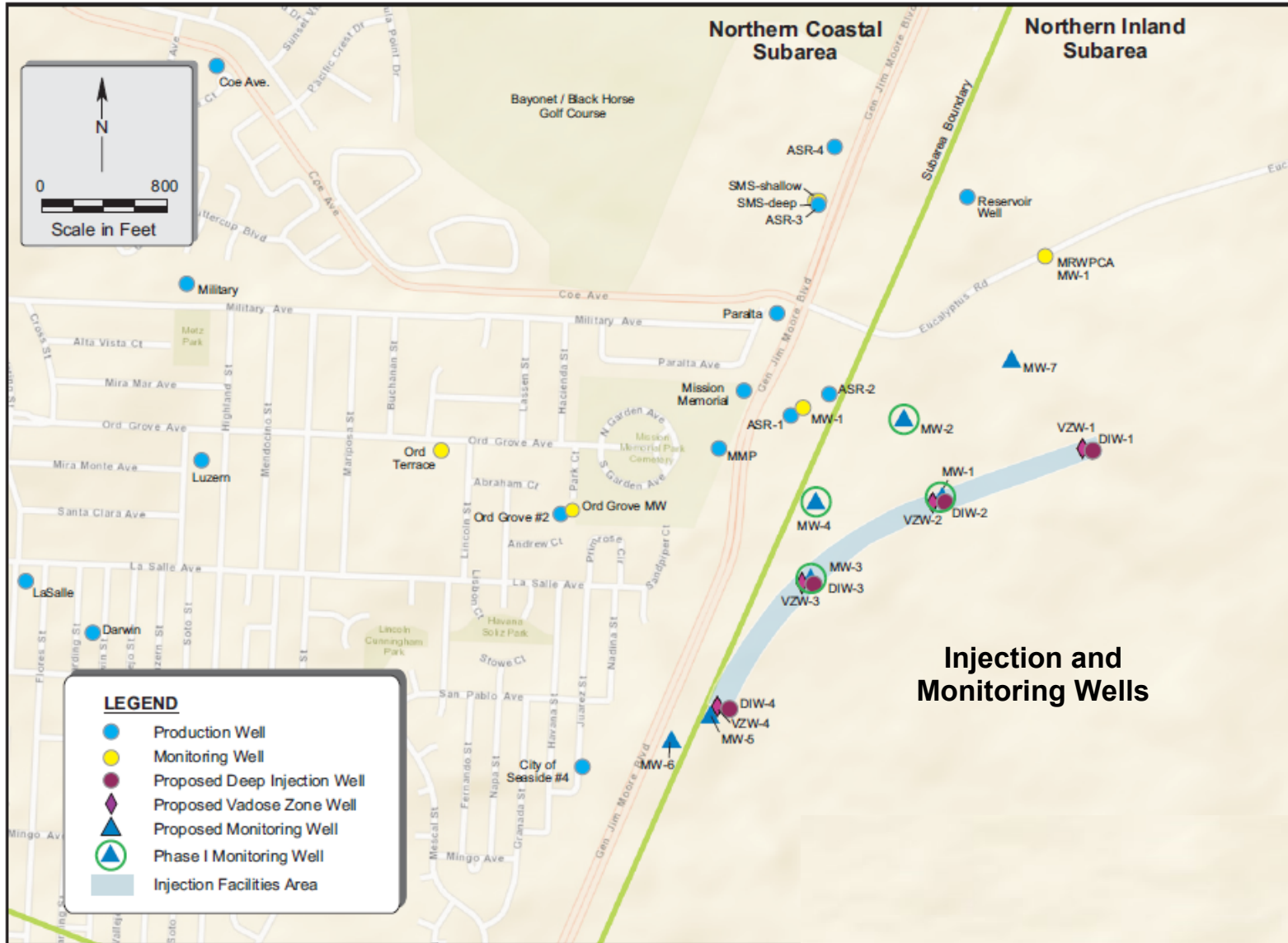


Figure 3- Proposed Injection Wells, Monitoring Wells and Production Wells

**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
DRAFT MONITORING AND REPORTING PROGRAM
NO. R3-2017-0003**

**FOR THE
PURE WATER MONTEREY
ADVANCED WATER PURIFICATION FACILITY
AND
GROUNDWATER REPLENISHMENT PROJECT**

**ISSUED TO
MONTEREY REGIONAL WATER POLLUTION CONTROL AGENCY**

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The Monterey Regional Water Pollution Control Agency (MRWPCA) shall implement this Monitoring and Reporting Program (MRP) on the effective date of Order No. R3-2017-0003.

I. SUBMITTAL OF REPORTS

1. The MRWPCA shall submit the required reports outlined in the following paragraphs in the appropriate electronic format to the State Water Resources Control Board (State Water Board)'s California Integrated Water Quality System (CIWQS¹) program for all monitoring data. Groundwater monitoring data shall also be submitted to the Geotracker database (in Electronic Data Format²) and to the Division of Drinking Water (DDW), Drinking Water Field Operations, by the dates indicated.

AWPFAWPF

b. Monthly Reports:

Consistent with section III.REPORTING REQUIREMENTS, monthly reports for monitoring and reporting requirements included in the Operations Optimization Plan shall be received by the 15th day after the end of the month in which monitoring occurred.

c. Quarterly Monitoring:

Quarterly Monitoring Reports shall be received by the 15th day of the second month following the end of each quarterly monitoring period according to Table M-1.

Table M-1: Quarterly Report Periods and Due Dates	
Reporting Period	Report Due
January – March	May 15
April – June	August 15
July – September	November 15
October – December	February 15

¹ For help with CIWQS go to: http://www.waterboards.ca.gov/water_issues/programs/ciwqs/chc_npdes.shtml

² For help with EDF go to: http://www.waterboards.ca.gov/ust/electronic_submittal/

The contents of the CIWQS and Geotracker Quarterly Monitoring Reports shall include a one-page summary of operational concerns that addresses changes in reporting conditions, including influent, recycled water, and groundwater monitoring results, since the last report.

d. Annual Summary:

The Annual Summary Report shall be received by April 15th of each year. This Annual Summary Report shall contain a discussion of the previous calendar year's analytical results, as well as graphical and tabular summaries of the monitoring analytical data.

Public water systems and owners of small water systems and other active production wells having downgradient sources potentially affected by the MRWPCA groundwater injection project or within 10 years groundwater travel time from the MRWPCA groundwater injection project shall be notified by direct mail and/or electronic mail of the availability of the annual report.

e. Operations Optimization Plan:

Prior to startup of the AWPf, the MRWPCA shall submit an Operations Optimization Plan (OOP) to DDW and the Central Coast Water Board for approval. After six months of operation of the Plant, the OOP shall be updated as necessary and submitted to the Central Coast Water Board and the DDW for review and approval.

- i. The OOP covers critical operational parameters to include routine testing procedures for the ozone pre-treatment, microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV)/advanced oxidation process (AOP) systems, optimization of the UV dose for disinfection and AOP for reduction of light-sensitive contaminants, and all treatment processes, maintenance and calibration schedules for all monitoring equipment, process alarm set points, and response procedures for all alarms in each treatment process of the AWPf, including responses if water quality requirements are not met, start-up, emergency response and contingency plans. During the first year of operation of the AWPf, all treatment processes shall be operated in a manner to provide optimal reduction of microbial, regulated and nonregulated contaminants. Based on this experience and anytime operational changes are made, the OOP shall be updated.
- ii. The OOP includes staffing levels with applicable certification levels for Facility operations personnel. Significant changes in the operation of any of the treatment processes shall be reported to the DDW and Central Coast Water Board. Significant changes in the approved OOP must be approved by the DDW and the Central Coast Water Board prior to instituting changes. The MRWPCA is responsible for ensuring that the OOP is, at all times, representative of the current operations, maintenance, and monitoring of the AWPf.

f. Well Installation Reports: No later than two weeks of the completion of a new injection or monitoring well, MRWPCA shall submit a well completion report to both the Central Coast Water Board and DDW detailing the following:

- i. well location;
- ii. well purpose (injection or monitoring);
- iii. well designation (MW-1 etc.);
- iv. well depth;
- v. screened intervals;
- vi. depth to groundwater (below ground surface)

2. Five-Year Engineering Report: MRWPCA shall update the 2016 Title 22 Engineering Report and submit the updated report to the State Water Board's CIWQS and Geotracker databases and to DDW five years from the date of the initial approval of the engineering report, and every five years thereafter.
3. All reports to the State Water Board's Geotracker shall reference Order No. R3-2017-0003. Compliance monitoring reports shall be submitted separately from other technical reports.
4. All reports shall be submitted as a portable data format file and uploaded electronically to the State Water Board's CIWQS and Geotracker databases and provided via email to the DDW (if the file exceeds 10 MB, either a CD containing the file shall be mailed to DDW, or a link for downloading an electronic copy of the file shall be provided). Upon request the data shall be provided in excel format
5. By the reporting due dates specified in Table M-1, groundwater data shall be uploaded electronically to the State Water Board's Geotracker in an electronic deliverable format specified by the State Water Board. All data shall be uploaded electronically to the CIWQS database. Upon request the data shall be provided in excel format.

II. MONITORING REQUIREMENTS

1. MRWPCA shall monitor the flow and quality of the following according to the manner and frequency specified in this MRP:
 - a. Influent to the AWPF;
 - b. Recycled water from AWPF after all treatment and chemical injection and before injection into the Seaside Basin;
 - c. If potable water is used, blend of recycled water and diluent water;
 - d. Receiving groundwater (monitoring wells associated with each injection well will be installed prior to recharge from associated injection wells); and,
2. Monitoring reports shall include, but not limited to, the following:
 - a. Analytical results;
 - b. Location of each sampling station where representative samples are obtained, including a map, at a scale of 1 inch equals 1,200 feet or less, that clearly identifies the locations of all injection wells, monitoring wells, and production wells;
 - c. Analytical test methods used and the corresponding minimum reporting levels (MRLs);
 - d. Name(s) of the laboratory, which conducted the analyses;
 - e. Copy of laboratory certifications by the DDW's Environmental Laboratory Accreditation Program (ELAP);

- f. Quality assurance and control information, including documentation of chain of custody; and,
 - g. Maximum contaminant level (MCL), notification level, response level, DDW Condition or Recycled Water Discharge Limit.
3. Though not required to be submitted in the monitoring reports unless specifically requested by the Central Coast Water Board Executive Officer or the DDW, the MRWPCA shall have in place written sampling protocols. For groundwater monitoring, the sampling protocols shall outline the methods and procedures used for measuring water levels; purging wells; collecting samples; decontaminating equipment; containing, preserving, and shipping samples, and maintaining appropriate documentation. Also, the sampling protocols shall include the procedures for handling, storing, testing, and disposing of purge and decontamination waters generated from the sampling events.
4. Where multiple EPA-approved methods are available, drinking water (500 series) or wastewater (600 series) may be used as appropriate.
5. The samples shall be analyzed using analytical methods described in 40 Code of Federal Regulations (CFR) Part 141, or where no methods are specified for a given pollutant, by methods approved by the DDW, Central Coast Water Board and/or State Water Board. The MRWPCA shall select the analytical methods that provide Minimum Reporting Levels (MRLs) lower than the limits prescribed in this Order or as low as possible that will provide reliable data.
6. The MRWPCA shall instruct its laboratories to establish calibration standards so that the MRLs (or its equivalent if there is a different treatment of samples relative to calibration standards) are the lowest calibration standard. At no time shall analytical data derived from extrapolation beyond the lowest point of the calibration curve be used.
7. Upon request by the MRWPCA, the Central Coast Water Board, in consultation with the DDW and the State Water Board Quality Assurance Program, may establish MRLs, in any of the following situations:
 - a. When the pollutant has no established method under 40 CFR 141;
 - b. When the method under 40 CFR 141 for the pollutant has an MRL higher than the limit specified in this Order; or,
 - c. When the MRWPCA agrees to use a test method that is more sensitive than those specified in 40 CFR Part 141.
8. For regulated constituents, the laboratory conducting the analyses shall be certified by ELAP or approved by the DDW, Central Coast Water Board, or State Water Board, for a particular pollutant or parameter.
9. Samples shall be analyzed within allowable holding time limits as specified in 40 CFR Part 141. All Quality Assurance/Quality Control (QA/QC) analyses shall be run on the same dates that samples are actually analyzed. The MRWPCA shall retain the QA/QC documentation in its files for three years and make available for inspection and/or submit them when requested by the Central Coast Water

- Board or the DDW. Proper chain of custody procedures shall be followed, and a copy of this documentation shall be submitted with the quarterly report.
10. For all bacterial analyses, sample dilutions shall be performed so the range of values extends from 1 to 800. The detection methods used for each analysis shall be reported with the results of the analyses.
 11. Quarterly monitoring for recycled water and groundwater shall be performed during the months of February, May, August, and November. Semiannual monitoring for recycled water shall be performed during the months of February and August. Semiannual monitoring for groundwater shall be performed during the months of May and November. Should there be instances when monitoring cannot be done during these specified months, the MRWPCA shall conduct the monitoring as soon as it can and state in the monitoring report the reason monitoring could not be conducted during the specified month. Results of quarterly analyses shall be reported in the quarterly monitoring report following the analysis.
 12. For unregulated chemical analyses, the MRWPCA shall select methods according to the following approach:
 - a. Use the drinking water methods or waste water method sufficient to evaluate all water quality objectives and protect all beneficial uses;
 - b. Use DDW-recommended methods for unregulated chemicals, if available;
 - c. If there is no DDW-recommended drinking water method for a chemical, and more than a single United States Environmental Protection Agency (USEPA)- approved method is available, use the most sensitive of the USEPA-approved methods;
 - d. If there is no USEPA-approved method for a chemical, and more than one method is available from the scientific literature and commercial laboratory, after consultation with DDW, use the most sensitive method;
 - e. If no approved method is available for a specific chemical, the Project Sponsors' laboratory may develop or use its own methods and should provide the analytical methods to DDW for review. Those methods may be used until DDW-recommended or USEPA-approved methods are available.
 - f. For constituents of emerging concern (CECs) subject to the State Water Board Recycled Water Policy as amended January 22, 2013, analytical methods for laboratory analysis of CECs shall be selected to achieve the reporting limits (RLs) presented in Table 1 of Attachment A of the Recycled Water Policy. The analytical methods shall be based on methods published by the USEPA, methods certified by the DDW, or peer review reviewed and published methods that have been reviewed by DDW, including those published by voluntary consensus standards bodies such as the Standards Methods Committee and the American Society for Testing and Materials International. Any modifications to the published or certified methods shall be reviewed by DDW and subsequently submitted to the Central Coast Water Board Executive Officer in an updated quality assurance project plan.

III. REPORTING REQUIREMENTS

1. **Monthly Reports:** The following monitoring and reporting requirements must be included in the OOP and reported to the DDW and the Central Coast Water Board monthly.
 - a. Membrane Filtration Effluent Monitoring - The MRWPCA will monitor the Membrane Filtration Effluent for turbidity continuously. The turbidity shall not exceed 0.2 nephelometric turbidity units (NTU) more than 5 percent of the time within a 24-hour period and 0.5 NTU at any time. Turbidity measurements shall be recorded every 15 minutes. The daily average, and daily maximum, and whether the 0.2 NTU was exceeded more than 5 percent of the time in any 24-Hour period shall be reported monthly.
 - b. The membrane filtration (MF) integrity - Daily pressure decay tests (PDTs) shall be performed on each MF membrane unit a minimum of once every 24 hours of operation based on the criteria described in the Order. Submit the results of the daily Membrane Integrity Testing (MIT) conducted during the month..
 - The PDT will be conducted to confirm no broken fibers or other breach of membrane integrity, based on product-specific minimum test pressure and maximum allowable pressure decay.
 - c. The Reverse Osmosis (RO) system will be credited for virus, Giardia cysts and Cryptosporidium oocysts based upon reduction demonstrated via an approved surrogate, such as conductivity. MRWPCA shall monitor conductivity continuously in both the RO feed and RO permeate of each RO train, in order to demonstrate membrane integrity and a conductivity. The daily average and maximum conductivity reading and percent of time that the reduction of conductivity is less than 1.0 log removal must be reported. The report shall include calculation of minimum removal achieved at the AWPF. An alternative surrogate may be utilized (e.g., TOC) if approved by the Division of Drinking Water and the Central Coast Water Board. The proposal to change surrogates may also include different monitoring locations (e.g., combined RO permeate instead of train RO permeate), if approved by DDW and the Central Coast Water Board.
 - d. On-line continuous monitoring of UV dose, UV intensity, flow, UV transmittance (UVT), and power must be provided at all times. Flow meters UV intensity sensors, and UVT monitors must be properly calibrated to ensure proper disinfection. At least monthly, all duty UV intensity sensors must be checked for calibration against a reference UV intensity sensor. The UVT meter must be inspected and checked against a reference bench-top unit weekly to document accuracy.
 - i. For AOP (UV and hydrogen peroxide at the AWPF), MRWPCA shall report the calculated daily hydrogen peroxide dose (based on the pump speed and bulk feed concentration)
 - ii. For UV, MRWPCA shall report the UVT (daily minimum, maximum, and average), UV dose for each reactor (daily minimum, maximum, and average), and the total flow (daily minimum, maximum, and average).
 - e. Based on the calculation of log reduction achieved daily by the entire

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treatment facility, from the AWPf to the public water supply wells, the MRWPCA will report a "Yes" or "No" for each day as to whether the necessary log reductions (12-logs virus, 10-logs for Giardia and Cryptosporidium) have been achieved. An overall log reduction calculation will be provided only for those days when a portion of the treatment facility does not achieve the credits listed in Table 5-4 of the ER.

- f. MRWPCA shall sample the monitoring wells for general mineral/physicals, inorganics, radioactivity (gross alpha and uranium) and volatile organic chemicals. MRWPCA shall take these samples monthly for the first year of operation. MRWPCA may request, from the Division of Drinking Water, a reduction in this monitoring after the first year.
- g. MRWPCA shall monitor the RO effluent for TOC via grab sample weekly and report in the monthly report. MRWPCA shall also monitor RO influent and effluent for TOC online and report monthly. The daily average and maximum TOC reading and the percent of time that the TOC is greater than 0.5 mg/L must be reported.
- h. MRWPCA shall monitor final effluent daily (7 days per week) for total coliform concentrations. The effluent 7-day median of the analyses for total coliform shall be reported monthly

2. **Quarterly Reports:** These reports shall include, at a minimum, the following information:

- a. The volume of:
 - AWPf Influent – Secondary effluent from the RTP.
 - Waste EQ effluent discharged into the RTP.
 - Fully treated recycled water injected into the Seaside Basin.
 - RO concentrate sent to the ocean outfall.
 - If no water was pumped, the report shall so state.
- i. The date and time of sampling and analyses.
- ii. All analytical results of samples collected during the monitoring period of the:
 - AWPf Influent,
 - RO feed water,
 -
 - RO recycled water, and
 - Groundwater.
- iii. Records of any operational problems, plant upset and equipment breakdowns or malfunctions, and any diversion(s) of off-specification recycled water and the location(s) of final disposal.

- iv. Discussion of compliance, noncompliance, or violation of requirements.
 - v. All corrective or preventive action(s) taken or planned with schedule of implementation, if any.
 - vi. Certification by the MRWPCA that no groundwater for drinking purposes has been pumped from wells within the boundary representing the greatest of the horizontal and vertical distances reflecting two months.
 - vii. A summary of operational concerns describing changes in reporting conditions, including influent, MF filtrate, RO permeate, UV/AOP water, and groundwater monitoring results, since the last report.
- b. Monitoring results associated with the evaluation of pathogenic microorganism removal as described in the Order.
- c. For the purpose of reporting compliance with numerical limitations, analytical data shall be reported using the following reporting protocols:
- i. Sample results greater than or equal to the MRL must be reported “as measured” by the laboratory (i.e., the measured chemical concentration in the sample); or
 - ii. Sample results less than the MRL, but greater than or equal to the laboratory’s Minimum Detection Limit (MDL), shall be reported as “Detected, but Not Quantified”, “DNQ”. The laboratory shall write the estimated chemical concentration of the sample next to “DNQ”; or
 - iii. Sample results less than the laboratory’s MDL shall be reported as “Not-Detected”, or ND.
- d. If the MRWPCA samples and performs analysis on any sample more frequently than required in this MRP using approved analytical methods, the results of those analyses shall be included in the report. These results shall be reflected in the calculation of the average used in demonstrating compliance with average recycled water, receiving water, etc., limitations.
- e. The Central Coast Water Board or DDW may request supporting documentation, such as daily logs of operations.

3. Annual Summary Reports: shall include, at a minimum, the following information:

- a. Tabular and graphical summaries of the monitoring data obtained during the previous calendar year;
- b. A summary of compliance status with all monitoring requirements during the previous calendar year;
- c. For any non-compliance during the previous calendar year, a description of:
 - i. the date, duration, and nature of the violation;

- ii. a summary of any corrective actions and/or suspensions of subsurface application of recycled water resulting from a violation; and
 - iii. if uncorrected, a schedule for and summary of all pending and completed remedial actions;
 - d. Any detections of monitored chemicals or contaminants, and any observed trends in the monitoring wells;
 - e. Information pertaining to the vertical and horizontal migration of the recharge water plume;
 - f. Title 22 drinking water quality data for the nearest drinking water supply well;
 - g. A description of any changes in the operation of any unit processes or facilities;
 - h. The estimated quantity and quality of the recycled water to be utilized for the next calendar year;
 - i. A list of the analytical methods used for each test and associated laboratory quality assurance/quality control procedures shall be included. The report shall identify the laboratories used by the MRWPCA to monitor compliance with this Order, their status of certification, and provide a summary of proficiency test;
 - j. A list of current operating personnel, their responsibilities, and their corresponding grade of certification.
 - k. The Annual Report shall be prepared by a properly qualified engineer registered and licensed in California and experienced in the field of wastewater or water treatment; and
 - l. A summary of monitoring reports, reporting and trend analysis, to describe the changes in water quality and contrast them to background measurements for all constituents exceeding MCLs or where concentration trends increase after the addition of recycled water. Specifically describe studies or investigations made to identify the source, fate and transport path of constituents which exceed the MCL at the monitoring wells.
4. The existing OOP shall be updated to accurately reflect the operations of the AWPf, the date the plan was last reviewed, and whether the plan is valid and current.
5. **Five-Year Engineering Report:** Five years from the date of the initial approval of the engineering report and every five years thereafter, the MRWPCA shall update the engineering report to address any project changes and submit the report to the Central Coast Water Board and the DDW. The Five-Year Engineering Report Update shall include, but not be limited to:
- a. A description of any inconsistencies between previous groundwater model predictions and the observed and/or measured values. For this requirement, the MRWPCA shall summarize the groundwater flow and

transport including the injection and extraction operations for the MRWPCA groundwater injection project during the previous five calendar years. This summary shall also use the most current data for the evaluation of the transport of recycled water; such evaluations shall include, at a minimum, the following information:

- i. Total quantity of advanced treated recycled water injected into Seaside Basin, and quantities of water injected into each individual injection well;
 - ii. Estimates of the rate and path of flow of the injected water within the aquifer;
 - iii. Projections of the arrival time of the recycled water at all monitoring and extraction wells and the percent of recycled water at each location.
 - iv. Clear presentation on any assumptions and/or calculations used for determining the rates of flow and for projecting arrival times and dilution levels;
 - v. A discussion of the underground retention time of recycled water, a numerical model, or other methods used to determine the recycled water contribution to each aquifer;
 - vi. A revised flow and transport model to match actual flow patterns observed within the aquifer if the flow paths have significantly changed; and,
 - vii. Revised estimates, if applicable, on hydrogeologic conditions including the retention time and the amount of the recycled water in the aquifers and at the production well field at the end of that calendar year. The revised estimates shall be based upon actual data collected during that year on recharge rates (including recycled water and native water), hydrostatic head values, groundwater production rates, basin storage changes, and any other data needed to revise the estimates of the retention time and the amount of the recycled water in the aquifers and at the production well field. Significant differences, and the reasons for such differences, between the estimates presented in the 2016 Engineering Report and subsequently revised estimates, shall be clearly presented. Additionally, the MRWPCA shall use the most recently available data to predict the retention time of recycled water in the subsurface.
- b. Evaluation of the ability of MRWPCA to comply with all regulations and provisions over the following five years.
 - c. The Five-Year Engineering Report shall be prepared by a properly qualified engineer registered and licensed in California and experienced in the field of wastewater or water treatment.

IV. MONITORING PROGRAMS

1. AWPf Influent Monitoring

- a. Monitoring is required to determine compliance with water quality conditions and standards and assess AWPf performance.
- b. The influent sampling station is located before clarified secondary effluent from the RTP enters the ozone pre-treatment system of the AWPf. Influent samples

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shall be obtained on the same day that stabilized RO recycled water samples are obtained. The date and time of sampling shall be reported with the analytical values determined. Table M-2 constitutes the influent monitoring program.

Table M-2: Influent Monitoring			
Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Ammonia-N	mg/L	grab	Weekly
CBOD ₅	mg/L	24-hour composite	Weekly
Boron	mg/L	grab	Weekly
Chloride	mg/L	24-hour composite	Weekly
Nitrate-N	mg/L	24-hour composite	Weekly
Nitrite-N	mg/L	24-hour composite	Weekly
Nitrogen - Total	mg/L	grab	Weekly
pH	pH units	Metered	Continuous
Sodium	mg/L	24-hour composite	Weekly
Sulfate	mg/L	grab	Weekly
Total Suspended Solids	mg/L	24-hour composite	Weekly
Total coliform	MPN/100	grab	Weekly
Total Dissolve Solids	mg/L	24-hour composite	Weekly
Total flow	mgd	Metered	Continuous ³
Total Kjeldahl nitrogen-N	mg/L	grab	Weekly
Total nitrogen ⁴	mg/L	grab	Weekly
Total Organic Carbon (TOC)	mg/L	24-hour composite ⁵	Weekly
Turbidity	NTU	Metered	Continuous ⁵
UV transmittance	%	grab	Continuous

³ For those pollutants that are continuously monitored, the MRWPCA shall report the monthly minimum and maximum, and daily average values.

⁴ Total Nitrogen includes nitrate-N, nitrite-N, ammonia-N, and organic-N.

⁵ May change to grab after MRWPCA demonstrates that grab sampling is adequate.

2. Recycled Water (AWPF Product Water) Discharge Limit Monitoring.

a. Advanced treated recycled water monitoring is required to:

- i. Determine compliance with the Permit conditions;
- ii. Identify operational problems and aid in improving facility performance; and,
- iii. Provide information on recycled water characteristics and flows for use in interpreting water quality and biological data.

Samples shall be collected downstream of the last chemical injection point, with the exception of constituents specified in Tables M-12 and M-13. Should the need for a change in the sampling station(s) arise in the future, the MRWPCA shall seek approval of the proposed station by the Executive Officer

prior to use.

Table M-3 shall constitute the recycled water monitoring program. After the first full year of monitoring, MRWPCA shall compile results and submit a revised monitoring program to DDW and the Central Coast Water Board for review and approval.

Table M-3: Recycled Water Discharge Limits Monitoring				
Constituent/Parameters	Units	Type of Sample	Minimum Frequency of Analysis	Reference Table Number
Conductivity	mmho/c	Metered	Continuous ⁵	M-3
Total chlorine residual	mg/L	Metered	Continuous	M-3
Total recycled water flow	mgd	Metered	Continuous	M-3
UV dose for each reactor	mJ/cm ²	Metered	Continuous	-
UV Transmittance	%	Metered	Continuous	-
pH	pH units	Metered	Continuous	M-3
Arsenic	µg/L	Grab	Monthly	M-3
Boron	µg/L	Grab	Monthly	M-3
Chloride	mg/L	Grab	Monthly	M-3
Chromium - Total	µg/L	Grab	Monthly	M-3
Total nitrogen ⁶	mg/L	grab	At least two samples per week at least 3 days apart	M-3
Nitrate-N	mg/L	grab	Weekly	M-3
Total Kjeldahl nitrogen-N	mg/L	Grab	Weekly	M-3
Sodium	mg/L	Grab	Monthly	M-3
Sulfate	mg/L	Grab	Monthly	M-3
Total Dissolved Solids - TDS	mg/L	Grab	Monthly	M-3
Total coliform	MPN/100 ml	Grab	Daily	M-3
Total Organic Carbon (TOC)	mg/L	24-hour composite ⁷	Weekly	M-3
Turbidity	NTU	Metered	Continuous	M-3
Inorganics with Primary MCLs	µg/L	Grab	Monthly	M-4

Table M-3: Recycled Water Discharge Limits Monitoring				
<i>Constituents/parameters with Secondary MCLs</i>	<i>various</i>	<i>Grab</i>	<i>Monthly</i>	M-5
Radioactivity	pCi/L	Grab	Monthly	M-6
Regulated organic chemicals	µg/L	grab	Monthly	M-7
Disinfection byproducts	µg/L	grab	Monthly	M-8
General physical	various	Grab	Quarterly	M-9
General minerals	µg/L	Grab	Quarterly	M-9
Constituents with Notification Levels	µg/L	Grab	Monthly	M-10
Remaining priority pollutants	µg/L	Grab	Annually	M-11
Constituents of Emerging Concern (CECs)	ng/L	Grab	Varies	M-12
Surrogates	Varies	Varies	Varies	M-13
Lead and Copper	mg/L	Grab	Quarterly	M-3

For those constituents that are continuously monitored, the Project Sponsors shall report the daily minimum, maximum, and average values.

⁶ If no problem is detected, analysis of nitrogen can be reduced to weekly after 12 months of data collection.

⁷ May change to grab after MRWPCA demonstrates that grab sampling is adequate.

Table M-4: Inorganics with Primary MCLs		
Constituent		
Aluminum	Chromium (Total)	Nitrite (as nitrogen)
Antimony		Nitrate + Nitrite
Arsenic	Cyanide	Perchlorate
Asbestos	Fluoride	Selenium
Barium	Mercury	Thallium
Beryllium	Nickel	
Cadmium	Nitrate (as nitrogen)	

Table M-5: Constituents/parameters with Secondary MCLs		
Constituents		
Aluminum	Manganese	Thiobencarb
Chloride	Methyl-tert-butyl-ether (MTBE)	Total Dissolved Solids
Color	Odor – Threshold	Turbidity
Copper	Silver	Zinc
Foam Agents (MBAS)	Specific Conductance	
Iron	Sulfate	

Table M-6: Radioactivity		
Constituent		
Gross Alpha Particle Activity (Including Radium-226 but Excluding Radon and Uranium)	Combined Radium-226 and Radium-228	Tritium
Gross Beta Particle Activity	Strontium-90	Uranium

Table M-7: Regulated Organics		
Constituents		
(a) Volatile Organic Chemicals	1,1,1-Trichloroethane	Endothal
Benzene	1,1,2-Trichloroethane	Endrin
Carbon Tetrachloride (CTC)	Trichloroethylene (TCE)	Ethylene Dibromide (EDB)
1,2-Dichlorobenzene	Trichlorofluoromethane	Glyphosate
1,4-Dichlorobenzene	1,1,2-Trichloro-1,2,2-	Heptachlor
1,1-Dichloroethane	Vinyl Chloride	Heptachlor Epoxide
1,2-Dichloroethane (1,2- DCA)	Xylenes (m,p)	Hexachlorobenzene
1,1-Dichloroethene (1,1- DCE)	(b) Non-Volatile synthetic Organic Constituents	Hexachlorocyclopentadiene
Cis-1,2-Dichloroethylene	Alachlor	Lindane
Trans-1,2-Dichloroethylene	Atrazine	Methoxychlor
Dichloromethane	Bentazon	Molinate
1,2-Dichloropropane	Benzo(a)pyrene	Oxamyl
1,3-Dichloropropene	Carbofuran	Pentachlorophenol
Ethylbenzene	Chlordane	Picloram
Methyl-tert-butyl-ether (MTBE)	Dalapon	Polychlorinated Biphenyls
Monochlorobenzene	1,2-Dibromo-3-chloropropane (DBCP)	Simazine
Styrene	2,4-Dichlorophenoxyacetic acid	Thiobencarb
1,1,2,2-Tetrachloroethane	Di(2-ethylhexyl)adipate	Toxaphene
Tetrachloroethylene (PCE)	Di(2-ethylhexyl)phthalate	2,3,7,8-TCDD (Dioxin)
Toluene	Dinoseb	2,4,5-TP (Silvex)
1,2,4-Trichlorobenzene	Diquat	

Table M-8: Disinfection Byproducts		
Constituent		
Total Trihalomethanes (TTHM)	Haloacetic Acid (five) (HAA5)	Bromate
Bromodichloromethane	Monochloroacetic acid	Chlorite
Bromoform	Dichloroacetic acid	
Chloroform	Trichloroacetic acid	
Dibromochloromethane	Monobromoacetic acid Dibromoacetic acid	

Table M-9: General Physical and General Minerals		
Constituent		
Asbestos	Potassium	Foaming Agents
Calcium	Sodium	Odor
Chloride	Sulfate	Specific Conductance
Copper	Zinc	Total Dissolved Solids
Iron	Color	Total Hardness
Manganese	Corrosivity	

Table M-10: Constituents with Notification Levels			
Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Boron	µg/L	Grab	Quarterly
n-Butylbenzene	µg/L	Grab	Annually
sec-Butylbenzene	µg/L	Grab	Annually
tert-Butylbenzene	µg/L	Grab	Annually
Carbon disulfide	µg/L	Grab	Quarterly
Chlorate	µg/L	Grab	Quarterly
2-Chlorotoluene	µg/L	Grab	Annually
4-Chlorotoluene	µg/L	Grab	Annually
Diazinon	µg/L	Grab	Annually
Dichlorodifluoromethane (Freon 12)	µg/L	Grab	Annually
1,4-Dioxane	µg/L	Grab	Quarterly
Ethylene glycol	µg/L	Grab	Annually
Formaldehyde	µg/L	Grab	Annually
HMX	µg/L	Grab	Annually
Isopropylbenzene	µg/L	Grab	Annually
Manganese	µg/L	Grab	Quarterly

Table M-10: Constituents with Notification Levels			
Constituents	Units	Type of Sample	Minimum Frequency of Analysis
Methyl isobutyl ketone (MIBK)	µg/L	Grab	Annually
Naphthalene	µg/L	Grab	Annually
n-Nitrosodiethylamine (NDEA)	µg/L	Grab	Annually
n-Nitrosodimethylamine (NDMA)	µg/L	Grab	Quarterly
n-Nitrosodi-n-propylamine (NDPA)	µg/L	Grab	Annually
Propachlor	µg/L	Grab	Annually
n-Propylbenzene	µg/L	Grab	Annually
RDX	µg/L	Grab	Annually
Tertiary butyl alcohol (TBA)	µg/L	Grab	Quarterly
1,2,3-Trichloropropane (1,2,3-TCP)	µg/L	Grab	Annually
1,2,4-Trimethylbenzene	µg/L	Grab	Annually
1,3,5-Trimethylbenzene	µg/L	Grab	Annually
2,4,6-Trinitrotoluene (TNT)	µg/L	Grab	Annually
Vanadium	µg/L	Grab	Annually

Table M-11: Remaining Priority Pollutants		
Constituent		
Pesticides	Metals	Di-n-butyl phthalate
Aldrin	Chromium III	Di-n-octyl phthalate
Dieldrin		Diethyl phthalate
4,4'-DDT	Base/Neutral Extractables	Dimethyl phthalate
4,4'-DDE	Acenaphthene	Benzo(a)anthracene
4,4'-DDD	Benzidine	Benzo(a)fluoranthene
Alpha-endosulfan	Hexachloroethane	Benzo(k)fluoranthene
Beta-endosulfan	Bis(2-chloroethyl)ether	Chrysene
Endosulfan sulfate	2-chloronaphthalene	Acenaphthylene
Endrin aldehyde	1,3-dichlorobenzene	Anthracene
Alpha-BHC	3,3'-dichlorobenzidine	1,12-benzoperylene
Beta-BHC	2,4-dinitrotoluene	Fluorene
Delta-BHC	2,6-dinitrotoluene	Phenanthrene
Acid Extractables	1,2-diphenylhydrazine	1,2,5,6-dibenzanthracene
2,4,6-trichlorophenol	Fluoranthene	Indeno(1,2,3-cd)pyrene
P-chloro-m-cresol	4-chlorophenyl phenyl ether	Pyrene
2-chlorophenol	4-bromophenyl phenyl ether	Volatile Organics
2,4-dichlorophenol	Bis(2-chloroisopropyl) ether	Acrolein

Table M-11: Remaining Priority Pollutants		
Constituent		
2,4-dimethylphenol	Bis(2- chloroethoxy)methane	Acrylonitrile
2-nitrophenol	Hexachlorobutadiene	Chlorobenzene
4-nitrophenol	Isophorone	Chloroethane
2,4-dinitrophenol	Nitrobenzene	1,1-dichloroethylene
4,6-dinitro-o-cresol	N-nitrosodiphenylamine	Methyl chloride
Phenol	Bis(2- ethylhexyl)phthalate	Methyl bromide
Chlorodibromomethane	Butyl benzyl phthalate	2-chloroethyl vinyl ether
2,4-Diphenylhydrazine		

Table M-12: Constituents of Emerging Concern						
Constituent	Relevance/ Indicator Type	Type of Sample	Minimum Frequency of Analysis	Reporting Limit (µg/L)	Monitoring Locations ⁷	
					Prior to RO	Following treatment prior to well injection
17β- estradiol	Health	grab	Annually	0.001		X
Caffeine	Health & Performance	grab	Annually	0.05	X	X
NDMA	Health & Performance	grab	Quarterly	0.002	X	X
Triclosan	Health	grab	Annually	0.05		X
DEET	Performance	grab	Annually	0.05	X	X
Sucralose	Performance	grab	Quarterly	0.1	X	X

Table M-13: Surrogates				
Constituent	Type of Sample	Minimum Frequency	Monitoring Locations	
			Prior to RO Treatment	Following Treatment prior to Well Injection
Electrical Conductivity	Online	Continuous	X	X

⁷ The January 22, 2013 Recycled Water Policy Attachment A makes a distinction between health-based and performance-based CEC indicators for purposes of monitoring locations. For subsurface applications, the health-based CECs are 17β-estradiol, caffeine, NDMA, and triclosan, with monitoring required for final recycled water only. The health-based and performance-based CECs are caffeine, NDMA, DEET, and sucralose, with monitoring required prior to reverse osmosis and post treatment prior to release to the aquifer. Caffeine and NDMA serve both as health-based and performance based indicators.

Table M-13: Surrogates				
Constituent	Type of Sample	Minimum Frequency	Monitoring Locations	
			Prior to RO Treatment	Following Treatment prior to Well Injection
Total Organic Carbon (TOC)	24-hour composite	Weekly	X	X

- c. Consistent with the January 22, 2013 amended Recycled Water Policy, the MRWPCA may request the removal of specific CECs from the monitoring program if supported by the data.
 - i. Analytical methods for CECs shall be selected to achieve the reporting limits presented in Table M-12 in accordance with the Recycled Water Policy. The analytical methods shall be based on methods published by the USEPA, methods certified by DDW, or peer reviewed and published methods that have been reviewed by DDW. Any modifications to the published or certified methods shall be reviewed and approved by the Central Coast Water Board and DDW.
 - ii. For performance indicator CECs and surrogates, removal percentages shall be reported in addition to the measured concentrations.

[1] The removal percentage shall be calculated based on the following formula:

$$\text{Removal Percentage} = ([X_{in} - X_{out}] / X_{in}) * 100$$

X_{in} = Concentration in recycled water prior to a treatment process

X_{out} = Concentration in recycled water after a treatment process

[2] The removal percentages for the surrogates shall be determined based on the daily averages for electrical conductivity and weekly values for TOC and included in the quarterly compliance monitoring reports.

[3] The removal percentages for the performance indicator CECs shall be included in the Annual Summary Report.

d. Evaluation of Pathogenic Microorganism Removal

For the purposes of evaluating the performance of the following treatment facilities/units with regards to pathogenic microorganism removal, the MRWPCA shall include the results of the monitoring specified below in its monthly compliance monitoring reports:

- i. For the purpose of demonstrating that the necessary log reductions are achieved at the AWPf, MRWPCA shall report the daily average and maximum turbidity, percent of time more than 5 nephelometric turbidity units (NTU), and daily coliform results measured in the recycled water (as

specified in Table M-3);

- ii. Advanced Oxidation Process (AOP) - (UV and hydrogen peroxide at the AWPf): For each day of operation, MRWPCA shall report the calculated daily peroxide dose (based on the peroxide pump speed and bulk feed concentration), percent reduction based on daily average of chloramine (via total residual chlorine) measured upstream and downstream of AOP, and the applied UV power shall be reported. For UV, MRWPCA shall report the UV system dose (expressed as greater than a certain threshold such as 300 milli-joules/cm²), UV transmittance (daily minimum, maximum, and average), UV intensity for each reactor (daily minimum, maximum, and average) and the total UV power applied; and
- iii. Based on the calculation of log reduction achieved each day by the entire treatment system, MRWPCA shall report the value and “Yes” or “No” for each day as to whether the necessary log reductions (i.e. 10-logs for *Giardia*, 10-logs for *Cryptosporidium*, and 12-logs for virus) have been attained. An overall log reduction calculation shall be provided only for those days when a portion of the treatment system does not achieve the credits proposed in Table 5-4 of the engineering report.

3. Treatment Conditions

If a sample of the advanced-treated recycled water is greater than 10 ng/L for NDMA, within 72 hours of knowledge of the result, the MRWPCA shall collect another sample as confirmation. The MRWPCA shall notify DDW and the Central Coast Water Board within 48 hours of knowledge of the exceedance and, if directed by DDW or the Central Coast Water Board, suspend injection of the advanced treated recycled water.

4. Groundwater Monitoring

- a. As required by Title 22, Section 60320.226, prior to operating any injection well, a MRWPCA shall site and construct at least two monitoring wells downgradient of the injection well, such that:
 - (1) at least one monitoring well is located;
 - (A) no less than two weeks but no more than six months of travel time from the injection wells, and
 - (B) at least 30 days upgradient of the nearest drinking water well;
 - (2) samples from the monitoring wells in paragraphs (1) and (2) can be;
 - (A) obtained independently from each aquifer, initially receiving the water used as a source of drinking water supply, that will receive the injection wells recharge water, and
 - (B) validated as receiving recharge water from the injection well.
- (b) In addition to the monitoring required pursuant to section 60320.120, from each monitoring well in subsection (a)(1), and each monitoring well in subsection (a)(2) that has recharge water located within one year travel time

of the well(s), a project

New monitoring wells will be installed to ensure ongoing project performance and to comply with the Title 22 Criteria. The objectives of the groundwater monitoring well program are to demonstrate compliance with the Title 22 and Basin Plan groundwater criteria and applicable state policies regarding protection of groundwater by:

- Siting one downgradient well with groundwater travel times (underground retention time) no less than two weeks and no more than six months from the injection wells (well also has to be greater than 30 days travel time from the nearest drinking water source).
- Siting an additional downgradient well between the Injection Facilities and the nearest downgradient potable water supply (in addition to the downgradient monitoring well used to demonstrate retention time as described in the bullet point above).
- Monitoring groundwater levels and water quality; the well design will allow for sample collection from each aquifer receiving recycled water.
- Collecting baseline water quality samples prior to startup of the Project operation.

Monitoring well installation will be phased to coincide with the phasing of the deep injection wells and vadose zone wells. Initially, two monitoring well clusters will be installed at the site of the first two deep injection wells, DIW-2 and DIW-3 and vadose zone wells, VZW-2 and VZW-3. These Phase I monitoring wells are labeled MW-1, MW-2, MW-3, and MW-4 on Figure 3 of Waste Discharge Requirements Order No. R3-2017-0003. Phase II monitoring wells will be proposed based on the location of additional injection wells and project operation information. For planning purposes, current locations of the additional Phase II monitoring wells MW-5, MW-6, and MW-7, are also included on Figure 3.

At each monitoring well location, two adjacent, but separate boreholes will be drilled in close proximity (within about 20 feet) of each other at the same location – one for the Paso Robles Aquifer and one for the Santa Margarita Aquifer (referred to as a monitoring well cluster).

For the injection well cluster at DIW-1, no adjacent monitoring well is proposed. Travel times from this well are very long and one monitoring well is presumed sufficient to document performance of this eastern-most injection well cluster. A tracer test will confirm whether or not one monitoring well is sufficient associated with the DIW-1 injection well cluster.

Representative samples of groundwater shall be collected from all monitoring wells installed for this project. Table M-15 sets forth the minimum constituents and parameters for monitoring groundwater quality in MRWPCA monitoring wells.

The MRWPCA shall implement the following groundwater monitoring program as described in Tables M-14, M-15, and M-16. Some constituents may be eligible for reduced monitoring due to the consistent historic lack of detection, upon approval by the Executive Officer.

If any of the monitoring results indicate that an MCL has been exceeded or

coliforms are present in the monitoring wells at the MRWPCA groundwater injection project as a result of the use of the recycled water, the MRWPCA shall notify the DDW and Central Coast Water Board within 72 hours of receiving the results and make note of any positive finding in the next monitoring report submitted to the Central Coast Water Board.

Upon an exceedance of 10 ng/L for NDMA in monitoring samples in groundwater wells and within 30 days, the MRWPCA shall notify DDW and the Central Coast Water Board and begin monthly sampling of groundwater for NDMA from the well with the exceedance. Groundwater sampling may return to the frequency stated in this MRP if the average of three consecutive monthly samples is 10 ng/L or below.

Table M-14: Groundwater Monitoring				
Constituents/Parameters	Units	Type of Sample	Minimum Frequency of Analysis	Reference Table Number
Water level elevation ⁸	Feet	---	Quarterly	M-14
Chlorine residual	mg/L	Grab	Quarterly	M-14
Chloride	mg/L	Grab	Quarterly	M-14
Nitrate-N	mg/L	Grab	Quarterly	M-14
Nitrite-N	mg/L	Grab	Quarterly	M-14
Nitrate plus Nitrite	mg/L	Grab	Quarterly	M-14
pH	pH units	Grab	Quarterly	M-14
Sodium	mg/L	Grab	Quarterly	M-14
Sulfate	mg/L	Grab	Quarterly	M-14
TOC	mg/L	Grab	Quarterly	M-14
Total coliform	MPN/100ml	Grab	Quarterly	M-14
BOD ₅ 20°C	mg/L	Grab	Semi-annually	M-14
Oil and grease	mg/L	Grab	Quarterly	M-14
Total nitrogen	mg/L	Grab	Quarterly	M-14
Total Suspended Solids	mg/L	Grab	Semi-annually	M-14
Turbidity	NTU	Grab	Quarterly	M-14
Inorganics with primary MCLs	µg/L	Grab	Monthly	M-4

⁸ Water level elevations shall be measured to the nearest 0.01 feet, and referenced to mean sea level.

Table M-14: Groundwater Monitoring				
Constituents/parameters with secondary MCLs				
Fluoride	µg/L	Grab	Quarterly	M-4
Radioactivity	pci/L	Grab	Monthly	M-15
Regulated organics	µg/L	Grab	Monthly or Quarterly	M-15
Disinfection byproducts (DBPs)	µg/L	Grab	Quarterly	M-15
General physical		Grab	Monthly	M-16
General minerals	µg/L	Grab	Monthly	M-16
Chemicals with NLs	µg/L	Grab	Quarterly or Annually	M-15
N-Nitrosopyrrolidine	µg/L	Grab	Annually	M-14
Remaining priority pollutants	µg/L	Grab	Quarterly	M-15
Silver	mg/L	Grab	Quarterly	M-14

Table M-15: Groundwater Monitoring Frequency	
Constituent	Frequency
Total Suspended Solids (TSS)	Quarterly
Turbidity	Quarterly
Radioactivity	
Gross Alpha Particle Activity (including Radium-226 but excluding radon and uranium)	Monthly
Gross Beta Particle Activity	Monthly
Radium-226	Monthly
Radium-226 & Radium-228 (Combined)	Monthly
Radium-228	Monthly
Strontium-90	Monthly
Tritium	Monthly
Uranium	Monthly

Table M-15: Groundwater Monitoring Frequency	
Organic Chemicals	
<i>(a) Volatile Organic Chemicals</i>	
1,1,1-Trichloroethane	Monthly
1,1,1,2-Tetrachloroethane	Monthly
1,1,2-Trichloro-	Monthly
1,2,2- Trifluoroethane	Monthly
1,1,2-Trichloroethane	Monthly
1,1-Dichloroethane	Monthly
1,1-Dichloroethene (1,1 DCE)	Monthly
1,2,4-Trichlorobenzene	Monthly
1,2-Dichlorobenzene	Monthly
1,2-Dichloroethane (1,2 DCA)	Monthly
1,2-Dichloropropane	Monthly
1,3-Dichloropropene	Monthly
1,4-Dichlorobenzene	Monthly
Benzene	Monthly
Carbon Tetrachloride (CTC)	Monthly
cis-1,2-Dichloroethylene	Monthly
Dichloromethane	Monthly
Ethylbenzene	Monthly
Methyl-tert-butyl-ether (MTBE)	Monthly
Monochlorobenzene	Monthly
Styrene	Monthly
Tetrachloroethylene (PCE)	Monthly
Toluene	Monthly
trans-1,2-Dichloroethylene	Monthly
Trichloroethylene (TCE)	Monthly
Trichlorofluoro-methane	Monthly
Vinyl Chloride	Monthly
Xylenes (m, p)	Monthly
<i>(b) non-volatile synthetic organic chemical</i>	
1,2-Dibromo-3-Chloropropane (DBCP)	Quarterly
2,3,7,8-TCDD (Dioxin)	Quarterly
2,4,5-TP (Silvex)	Quarterly
2,4-Dichlorophenoxyacetic acid (2,4-D)	Quarterly

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Table M-15: Groundwater Monitoring Frequency	
Alachlor	Quarterly
Atrazine	Quarterly
Bentazon	Quarterly
Benzo (a) pyrene	Quarterly
Carbofuran	Quarterly
Chlordane	Quarterly
Dalapon	Quarterly
Di (2-ethylhexyl) adipate	Quarterly
Di (2-ethylhexyl) phthalate	Quarterly
Dinoseb	Quarterly
Diquat	Quarterly
Endothal	Quarterly
Endrin	Quarterly
Ethylene Dibromide (EDB)	Quarterly
Glyphosate	Quarterly
Heptachlor	Quarterly
Heptachlor Epoxide	Quarterly
Hexachlorobenzene	Quarterly
Hexachlorocyclo-pentadiene	Quarterly
Lindane (Gamma BHC)	Quarterly
Methoxychlor	Quarterly
Molinate	Quarterly
Oxamyl	Quarterly

Table M-15: Groundwater Monitoring Frequency	
PCB 1016	Quarterly
PCB 1221	Quarterly
PCB 1232	Quarterly
PCB 1242	Quarterly
PCB 1248	Quarterly
PCB 1254	Quarterly
PCB 1260	Quarterly
Pentachlorophenol	Quarterly
Picloram	Quarterly
Simazine	Quarterly
Thiobencarb	Quarterly
Toxaphene	Quarterly
Disinfection Byproducts	
Bromate	Quarterly
Bromodichloro-methane	Quarterly
Bromoform	Quarterly
Chlorite	Quarterly
Chloroform	Quarterly
Dibromoacetic Acid	Quarterly
Dibromochloro-methane	Quarterly
Dichloroacetic Acid	Quarterly
Haloacetic Acid (Five) (HAA5)	Quarterly
Monobromoacetic Acid	Quarterly
Monochloroacetic Acid	Quarterly
Total Trihalomethanes	Quarterly
Trichloroacetic Acid	Quarterly

Table M-15: Groundwater Monitoring Frequency	
Chemicals with Notification Levels	
1,2,3-Trichloropropane (1,2,3 TCP)	Quarterly
1,2,4-Trimethylbenzene	Annual
1,3,5-Trimethylbenzene	Annual
1,4-Dioxane	Annual
2-Chlorotoluene	Annual
2,4,6-Trinitrotoluene (TNT)	Annual
4-Chlorotoluene	Annual
Boron	Quarterly
Carbon Disulfide	Annual
Chlorate	Annual
Diazinon	Annual
Dichlorodifluoro-methane (Freon 12)	Annual
Ethylene Glycol	Annual
Formaldehyde	Annual
HMX	Annual
Isopropylbenzene	Annual
Manganese	Annual
Methyl-isobutyl-keytone (MIBK)	Annual
Naphthalene	Quarterly
n-Butylbenzene	Annual
n-Nitrosodiethyl-amine (NDEA)	Annual
n-Nitrosodimethylamine (NDMA)	Quarterly
n-Nitrosodi-n-propylamine (NDPA)	Quarterly
n-Propylbenzene	Annual
Propachlor	Annual
RDX	Annual
sec-Butylbenzene	Annual
tert-Butylbenzene	Annual
Tertiary-butyl-alcohol (TBA)	Annual
Vanadium	Annual

Table M-15: Groundwater Monitoring Frequency	
Remaining Priority Pollutants	
<i>Pesticides</i>	
4,4,4'-DDD	Annual
4,4,4'-DDE	Annual
4,4,4-DDT	Annual
Aldrin	Quarterly
Alpha BHC	Quarterly
Alpha Endosulfan	Quarterly
Beta BHC	Quarterly
Beta Endosulfan	Quarterly
Chromium III	Quarterly
Chromium VI	Quarterly
Delta BHC	Quarterly
Dieldrin	Quarterly
Endosulfan Sulfate	Quarterly
Endrin Aldehyde	Quarterly
<i>Acid Extractables</i>	
2,4,6-Trichlorophenol	Quarterly
2,4-Dichlorophenol	Quarterly
2,4-Dimethylphenol	Quarterly
2,4-Dinitrophenol	Quarterly
2-Chlorophenol	Quarterly
2-Nitrophenol	Quarterly
4,6-Dinitro-o-Cresol (2-Methyl-4,6-Dinitrophenol)	Quarterly
4-Nitrophenol	Quarterly
p-Chloro-m-Cresol (3-Methyl-4-Chlorophenol)	Quarterly
Phenol	Quarterly
<i>Base/Neutral Extractables</i>	
1,12-Benzoperylene ((Benzo(g,h,i)-perylene))	Quarterly
1,2,5,6-Dibenzanthracene ((Dibenzo(a,h) anthracene))	Quarterly
1,2-Diphenylhydrazine	Quarterly
1,3-Dichlorobenzene	Quarterly
2,4-Dinitrotoluene	Quarterly
2,6-Dinitrotoluene	Quarterly
2-Chloronaphthalene	Quarterly
3,3'-Dichlorobenzidine	Quarterly
4-Bromophenyl phenyl ether	Quarterly

Table M-15: Groundwater Monitoring Frequency	
4-Chlorophenyl phenyl ether	Quarterly
Acenaphthene	Quarterly
Acenaphthylene	Quarterly
Anthracene	Quarterly
Benzidine	Quarterly
Benzo(a)anthracene	Quarterly
Benzo(b)fluoranthene	Quarterly
Benzo(k)fluoranthene	Quarterly
Bis(2-chloroethoxyl)-methane	Quarterly
Bis(2-chloroethyl)ether	Quarterly
Bis(2-chloroisopropyl)ether	Quarterly
Butyl benzyl phthalate	Quarterly
Chrysene	Quarterly
Di(2-ethylhexyl) phthlate	Quarterly
Dimethyl phthalate	Quarterly
Di-n-butyl phthalate	Quarterly
Di-n-octyl phthalate	Quarterly
Fluoranthene	Quarterly
Fluorene	Quarterly
Hexachlorobutadiene	Quarterly
Hexachloroethane	Quarterly
Indeno(1,2,3-cd) pyrene	Quarterly
Isophorone	Quarterly
Nitrobenzene	Quarterly
n-Nitrosodi-n-propylamine	Quarterly
n-Nitrosodiphenylamine	Quarterly
Phenanthrene	Quarterly
Pyrene	Quarterly
1,1-Dichloroethylene	Quarterly
2-Chloroethyl vinyl ether	Quarterly
Acrolein	Quarterly
Acrylonitrile	Quarterly
Chlorobenzene	Quarterly
Chloroethane	Quarterly
Methyl bromide	Quarterly
Methyl chloride	Quarterly

Table M-16: General Physical and General Minerals		
Constituent		
Asbestos	Potassium	Foaming Agents
Calcium	Sodium	Odor
Chloride	Sulfate	Specific Conductance
Copper	Zinc	Total Dissolved Solids
Iron	Color	Total Hardness
Manganese	Corrosivity	

V. CERTIFICATION STATEMENT

Each report shall contain the following declaration⁹:

“I certify under penalty of law that this document, including all attachments and supplemental information, was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment.

Executed on the _____ day of _____ at _____

_____ (Signature)

_____ (Title)”

VI. OTHER MONITORING REQUIREMENTS

The MRWPCA shall submit written documentation identifying the responsible party who certifies the perjury document.

The list of parameters and monitoring frequencies may be adjusted by the Executive Officer if the MRWPCA makes a request and the Executive Officer determines that the modification is adequately supported by statistical trends of monitoring data submitted.

VII. CERTIFICATION

Ordered by _____
Executive Officer

Date March 9, 2017