STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

STAFF REPORT FOR REGULAR MEETING OF OCTOBER 9-10, 2025
Prepared on September 23, 2025

ITEM NUMBER: **7**

SUBJECT: **Consideration of Proposed Order R3-2025-0008, Waste Discharge and Water Reclamation Requirements for the Pure Water Monterey Advanced Water Purification Facility and Groundwater Replenishment Reuse Project issued to Monterey One Water**

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KEY INFORMATION

Facility Name:	Pure Water Monterey Groundwater Replenishment Project
Discharger:	Monterey One Water
Location:	Advanced Water Purification Facility (AWPF) is located at 14811 Del Monte Boulevard in Marina, California. The associated conveyance infrastructure, along with the injection and monitoring wells, are situated in the northern portion of the Seaside Groundwater Basin in the City of Seaside.
Recycled Water:	Injection of advanced treated recycled water for replenishment of the Seaside Groundwater Basin, which serves as a drinking water supply, and delivery of advanced treated water to Marina Coast Water District for non-potable uses.

Permitted Flow:	Production of 7.6 million gallons per day (MGD) at the AWPF. Permitted injection is capped at 5,950 acre-feet per year (AFY) at full project expansion[1].
Injection Location:	Salinas Valley Groundwater Basin – Seaside Area subbasin (Seaside Basin) . Six injection wells target the Santa Margarita aquifer. Two vadose zone wells provide limited injection into Paso Robles aquifer.
Treatment:	Advanced treatment technologies include ozone pretreatment, membrane filtration, reverse osmosis, ultraviolet light disinfection, advanced oxidation, and product water stabilization.
Wastewater Disposal:	Groundwater generated during injection well backflushing is discharged into two percolation ponds. Reverse osmosis concentrate generated at the AWPF is discharged via Monterey One Water's existing ocean outfall in accordance with permit Order R3-2024-0045, NPDES CA0048551.
Existing Orders:	Monterey One Water's existing waste discharge and water reclamation requirements Order R3-2017-0003 for the production and discharge of advanced treated recycled water to the Seaside Basin will be terminated and replaced by Order R3-2025-0008.
ACTION:	**Consider adoption of waste discharge and water reclamation requirements for Pure Water Monterey Groundwater Replenishment Project, Order R3-2025-0008**

SUMMARY

This staff report summarizes the technical and regulatory basis for proposed Order R3-2025-0008 to authorize expansion of the Pure Water Monterey Groundwater Replenishment Project (Project). Proposed Order R3-2025-0008 authorizes expanded production and injection of advanced treated recycled water, permits use of two additional deep injection wells, and authorizes disposal of injection well backflush water into infiltration ponds. The proposed Order establishes discharge specifications, effluent limitations, and monitoring and reporting requirements pursuant to California Water Code article 4, chapter 4, division 7 and uniform water recycling criteria found at California Code of Regulations (CCR), title 22, division 4, chapter 3, article 5.2 (Title

[1] The initial Project was constructed with four deep injection wells (DIW-1 through DIW-4) to support the baseline authorized injection capacity of 3,500 AFY. The expanded Project includes the construction of two additional deep injection wells (DIW-5 and DIW-6) to provide sufficient capacity for the higher injection volumes authorized under the proposed expansion, up to 5,950 AFY.

22). This expansion continues the Project's goals of reducing reliance on water supply from the Carmel River and securing a resilient water supply for those served by the Seaside Basin. This proposed Order supersedes and terminates Order R3-2017-0003.

PROJECT DESCRIPTION

Monterey One Water, in partnership with the Monterey Peninsula Water Management District (MPWMD) and Marina Coast Water District (MCWD), developed the Project to deliver advanced treated recycled water for replenishment of the Seaside Basin. California American Water Company (Cal-Am), a water supplier, extracts the advanced treated recycled water from the Seaside Basin to meet customer demand. The Project enables Cal-Am to reduce its diversions from the Carmel River system and reduce its reliance on native Seaside Basin groundwater, as required by the State Water Resources Control Board's (State Water Board) Cease and Desist Order WR 2009-0060, as amended by Order WR 2016-0016[2].

Under the initial Project, which became operational in February 2020, the Central Coast Water Board authorized[3] production of up to 5.0 million gallons per day (MGD) of advanced treated recycled water, injection of up to 3,700 AFY into the Seaside Basin through four deep injection wells and two vadose zone wells, and delivery of 600 AFY to MCWD for non-potable reuse. The expanded Project is defined as the set of improvements undertaken to increase Project capacity beyond the initial authorization. As part ofthe expanded Project, Monterey One Water constructed two additional deep injection wells, and added new treatment components to the AWPF to enable production of additional water. Collectively, these improvements support the proposed increase in injection of advanced treated recycled water into the Seaside Basin to 5,950 AFY, while continuing delivery of 600 AFY to MCWD.

TITLE 22 REQUIREMENTS FOR GROUNDWATER REPLENISHMENT

The proposed Order protects beneficial uses by establishing influent and effluent discharge limitations, prohibitions, and specifications pursuant to the Water Quality Control Plan for the Central Coast Basin (Basin Plan), the Recycled Water Policy[4],

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[2] For more information on State Water Board's Cease and Desist Order WR 2009-0060, as amended by Order WR 2016-0016, see Proposed Order Attachment F, Fact Sheet section 3.1.5.

[3] The initial Project was authorized under Order R3-2017-0003 which can be accessed online at: https://geotracker.waterboards.ca.gov/view_documents?global_id=WDR100039680&enforcement_id=6457169

[4] The Recycled Water Policy can be accessed online at: https://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2018/121118_7_final_amendment_oal.pdf

California Water Code[5], and Antidegradation Policy[6]. Because the Project is a Groundwater Replenishment Project (GRRP) pursuant to Title 22 section 60301.390, the proposed Order contains specific requirements for indirect potable reuse groundwater replenishment which are necessary for the protection of public health and the environment. Title 22 requirements include basin characterization and development of a groundwater transport model, wastewater source control, use of full advanced treatment technology[7], verification of underground retention time through a tracer study, pathogenic microorganism control and securing alternative drinking water supplies.

To ensure protection of public health, groundwater, and drinking water quality, the Regional Boards work closely with the State Water Board Division of Drinking Water (DDW). DDW is the primary agency responsible for the protection of public health and regulation of drinking water and, as such, has specific regulatory responsibility to establish statewide water reclamation criteria, review Title 22 Engineering Reports, advise Regional Boards on drafting of water reclamation requirements, direct abatement of contamination caused by use of reclaimed water, and oversee cross-connection control. The Regional Boards are charged with the protection and control of water quality for the protection of beneficial uses and are therefore charged with development, issuance and enforcement of discharge and recycled water permits.

In May 2025, Monterey One Water submitted the final Title 22 Engineering Report to support Project expansion. DDW reviewed the updated report and issued its *Conditional Acceptance of the Pure Water Monterey Groundwater Replenishment Project Engineering Report (2790002-710)* (Conditional Acceptance Letter) on July 11, 2025 and a revision on August 28, 2025[8]. DDW's conditions are included in Attachment D, Water Reclamation Requirements of the proposed Order. The water reclamation requirements are enforceable permit conditions, including the permitted injection volume, operating limits, and monitoring and reporting obligations, to ensure indirect potable reuse projects operate in compliance with both drinking water and groundwater protection standards.

MONTEREY ONE WATER RECYCLED WATER PROGRAMS OVERVIEW

Monterey One Water operates two water recycling projects: the Castroville Seawater Intrusion Project (CSIP), which delivers recycled water for agricultural irrigation in

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[5] The California Water Code can be accessed online at: https://leginfo.legislature.ca.gov/faces/codesTOCSelected.xhtml?tocCode=WAT&tocTitle=+Water+Code+-+WAT

[6] The Antidegradation Policy applies to the disposal of waste to high-quality surface water and groundwater and requires that the quality of existing high-quality water be maintained. The Antidegradation Policy can be accessed online at: https://www.waterboards.ca.gov/plans_policies/antidegradation.html

[7] Full advanced treatment is the treatment of an oxidized wastewater, as defined in Title 22 section 60301.650, using a reverse osmosis and an oxidation treatment process and meeting the performance criteria stipulated in section 60320.201.

[8] The August 28, 2025 DDW Conditional Acceptance Letter can be accessed online at: https://geotracker.waterboards.ca.gov/view_documents?global_id=WDR100039680&enforcement_id=6644095

northern Monterey County and Pure Water Monterey. Both projects use secondary effluent from the Regional Wastewater Treatment Plant (Regional WWTP) as source water, but apply different treatment technology, achieve different levels of treatment, and provide distinct beneficial reuses, with the Pure Water Monterey augmenting groundwater supply for potable reuse and CSIP, which offsets agricultural demand of groundwater in the Salinas Valley groundwater basin.

The Regional WWTP receives flows from the cities of Monterey, Pacific Grove, Del Rey Oaks, Sand City, Marina, and Salinas, as well as from the Seaside County Sanitation District, the Castroville Community Services District, the Boronda County Sanitation District, and areas within unincorporated Monterey County. The Regional WWTP influent also includes other sources such as agricultural wash water from the City of Salinas, stormwater flows from southern Salinas, stormwater and agricultural runoff from the Reclamation Canal, and surface water and agricultural tile drain discharges from the Blanco Drain.

ADVANCED WATER PURIFICATION FACILITY AND GROUNDWATER INJECTION INFRASTRUCTURE

The AWPF employs a multi-barrier treatment train to produce advanced treated recycled water for groundwater replenishment in compliance with Title 22 water recycling criteria and permit conditions. Treatment processes include:

- Ozone Pretreatment: Enhances biodegradability or large organic compounds, reduces trace organic compounds, and improves microfiltration performance.
- Membrane Filtration: Removes particulate matter and reduces fouling downstream treatment processes.
- Reverse Osmosis (RO): Removes dissolved constituents including salts, pathogens, pesticides, metals, nutrients, pharmaceutical compounds, constituents of emerging concern, and a wide range of trace organic contaminants.
- Ultraviolet (UV) Light Disinfection with Advanced Oxidation (AOP): Combines UV with hydrogen peroxide to destroy pathogens and break down trace organic compounds.
- Product Water Stabilization: Adjusts pH and adds calcium to stabilize the water and prevent leaching during subsurface storage.

The AWPF treatment processes remain unchanged under the expanded Project but have been augmented with additional capacity to accommodate higher flows. For example, new RO, MF, and UV/AOP units were added to expand the existing treatment trains. Under the expanded Project, the AWPF receives up to 10.66 million gallons per day (MGD) of secondary effluent from the Regional WWTP and produces up to 7.6 MGD of advanced treated recycled water. Approximately 1.78 MGD of reverse osmosis concentrate generated at the AWPF can be discharged through Monterey One Water's existing ocean outfall, regulated under Order R3-2024-0045, NPDES Permit CA0048551.

Advanced treated recycled water from the AWPF is conveyed through a dedicated pipeline to a network of deep injection wells (DIW-1 through DIW-6) and vadose zone wells (VZW-1B and VZW-2) in the Seaside Basin. Once injected, the water blends with native groundwater and is stored for future potable reuse by Cal-Am and other municipal suppliers.

In addition to the multi-barrier advanced treatment processes at the AWPF, subsurface retention time provides additional treatment credits, as described in the subsequent section.

GROUNDWATER RETENTION TIME

Title 22 regulations require demonstration that advanced water purification processes, together with subsurface retention time, provide sufficient pathogen reduction to protect public health. Since Project start-up in 2020, Monterey One Water has conducted tracer testing and groundwater modeling to confirm that the Project achieves the minimum required underground retention time. These evaluations show that, under both the initial and expanded Project operating conditions, injected water will reliably meet the four-month minimum underground residence time required by Title 22.

HYDROGEOLOGIC SETTING AND GROUNDWATER BENEFITS

The Seaside Basin has experienced significant pumping-induced depressions in water levels and is vulnerable to seawater intrusion. The Project injects advanced treated recycled water into the Santa Margarita Aquifer, an older confined marine sandstone unit that has relatively high transmissivity. This aquifer is separated from deeper zones by the low-permeability Monterey Formation, which provides a natural barrier to vertical groundwater movement. The injected water offsets drawdown in areas near key municipal supply wells, such as the Paralta and Ord Grove Number 2 wells, which are screened in both the Santa Margarita and Paso Robles Aquifers. Groundwater modeling confirms that injection raises groundwater levels and creates a hydraulic barrier that helps prevent seawater intrusion. Tracer studies also demonstrate that the injected water meets required subsurface travel time before being extracted for potable use. By locating the injection wells in the Northern Inland Subarea, away from the coast and major pumping centers, the project allows for greater subsurface retention and blending with native groundwater. These hydrogeologic conditions support the Project's ability to improve groundwater quality, increase groundwater storage in the basin, and strengthen long-term water supply reliability in the region.

The Antidegradation Policy requires existing quality of waters be maintained unless degradation is justified by specific findings. Monterey One Water completed an antidegradation analysis for the Project in 2016 and 2021, and an updated antidegradation analysis in April 2025. The updated analysis incorporated five years of operational monitoring data (2018–2023) and revised groundwater modeling to evaluate changes in water quality and available assimilative capacity. The 2025 analysis confirmed that the project continues to use less than 10 percent of the available

assimilative capacity in the receiving aquifer, and that it remains protective of water quality and beneficial uses.

COMPLIANCE HISTORY

Monterey One Water began injecting into the Seaside Groundwater Basin in February 2020 under Order R3-2017-0003. In the time the Project has been in operation, Monterey One Water injected an average of 3.3 million gallons per day of advanced treated recycled water (approximately 3,700 AFY), totaling approximately 5,880 million gallons (18,000 acre-feet) as of December 2024. Monterey One Water has consistently complied with the requirements of Order R3-2017-0003, including all product water effluent limits, AWPF treatment process performance criteria, groundwater quality limits, and log reduction requirements.

During start-up, Monterey One Water had one violation involving reverse osmosis feed parameters which Monterey One Water promptly addressed. Since February 2020, five sampling errors have occurred including exceedances sample hold times and failure to collect samples. All monthly, quarterly, and annual reports have been completed on time and contained all necessary elements.

Elevated arsenic concentrations above the maximum contaminant level (MCL) were detected in monitoring well MW-2D from April 2020 through August 2020. Data indicates that arsenic levels at MW-2D returned to background levels by September 2020. The elevated arsenic was attributed to mobilization of naturally occurring arsenic from native aquifer materials. Upon identifying the cause, Monterey One Water implemented corrective measures, including adjusting the pH of injection water and maintaining aerated injection conditions. These controls remain in place to prevent future mobilization. Because groundwater objectives are reported and evaluated on a 6-month running average, these samples did not cause a permit violation.

RATIONALE FOR PERMIT REQUIREMENTS

The waste discharge and water reclamation requirements for the Project are established pursuant to the Basin Plan, the State Water Board's Recycled Water Policy, the California Water Code, the Antidegradation Policy, and Title 22.

On November 27, 2024, Monterey One Water submitted a Report of Waste Discharge, which serves as the formal application for waste discharge requirements. The Report of Waste Discharge provides essential project information, including well locations, injection volumes, and treatment capacity. The accompanying Engineering Report (finalized in May 2025) supplies the technical basis for project operations, describing treatment performance, hydrogeologic modeling, source control measures, and monitoring protocols that inform site-specific permit conditions. DDW's Conditional Acceptance Letter documents its review of the Engineering Report and establishes conditions and performance standards related to pathogen log reduction, monitoring frequencies, operational safeguards, and verification of source control.

Together, these documents provide the regulatory and technical framework for permit development, including documenting that the Project complies with Title 22 requirements, including provisions for subsurface application, minimum retention time, public health protection, and coordination with existing drinking water users. The Central Coast Water Board relies on this body of information to craft enforceable permit terms that support recycled water production and are protective of water quality and human health.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

Monterey One Water, as lead agency, prepared a supplemental Environmental Impact Report (EIR) for the expanded Project in 2021. The supplemental EIR addressed increasing AWPF peak capacity to 7.6 MGD, constructing two additional injection wells and pipelines, and raising injection to 5,950 AFY. Overall, the expanded Project is expected to have beneficial water quality impacts, less-than-significant groundwater level impacts, and no new significant environmental effects under the Central Coast Water Board's jurisdiction, consistent with CEQA requirements.

HUMAN RIGHT TO WATER

California Water Code section 106.3, subdivision (a) states that 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 sanitation purposes." On January 26, 2017, the Central Coast Water Board adopted Resolution R3-2017-0004, which affirms the realization of the human right to water and the protection of human health as the Central Coast Water Board's top priorities.

The proposed Order is consistent with Resolution R3-2017-0004 by authorizing the production of advanced treated recycled water for the purpose of indirect potable reuse to help improve water quality, water supply reliability, and water supply resiliency. The Order ensures that the best practicable treatment or control of the discharge is implemented to protect groundwater that serves as a source of drinking water. The Central Coast Water Board has determined that regulation of this Project, in compliance with the Order, will not pose a significant threat to water quality.

ENVIRONMENTAL JUSTICE

Environmental Justice principles call for the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income in the development, adoption, implementation, and enforcement of all environmental laws, regulations, and policies that affect every community's natural resources and the places people live, work, play, and learn. The Central Coast Water Board implements regulatory activities and water quality projects in a manner that ensures the fair treatment of all people, including Underrepresented Communities.[9] Furthermore, the Central Coast Water

[9] Underrepresented Communities include but are not limited to Disadvantaged Communities (DACs), Severely Disadvantaged Communities (SDACs), Economically Distressed Areas (EDAs), Tribes, Environmentally Disadvantaged Communities (EnvDACs), and members of Fringe Communities.

Board is committed to providing all stakeholders the opportunity to participate in the public process and provide meaningful input to decisions that affect their communities. Upon review of readily available information, the Central Coast Water Board finds that this Order regulates a discharge that does not disproportionately impact the water quality of an economically disadvantaged community or a tribal community.

CLIMATE CHANGE

The Central Coast faces the threat and the effects of climate change for the foreseeable and distant future. To proactively prepare and respond, the Central Coast Water Board has launched the Central Coast Water Board's Climate Action Initiative, which identifies how the Central Coast Water Board's work relates to climate change and prioritizes actions that improve water supply resiliency through water conservation and wastewater reuse and recycling; mitigate for and adapt to sea level rise and increased flooding; improve energy efficiency; and reduce greenhouse gas production. The Climate Action Initiative is consistent with the Governor's Executive Order B-30-15 and the State Water Board's Climate Change Resolution 2017-0012. Aligning with Resolution 2017-0012, this Order authorizes the production of advanced treated recycled water for the purpose of indirect potable reuse to help offset demand on natural groundwater supplies, mitigate seawater intrusion, and support local water supply resiliency.

COMMENTS

The initial public comment period for the draft Order was from July 23, 2025 to August 22, 2025. The draft Order included provisions consistent with the Division of Drinking Water's (DDW) July 11, 2025 Conditional Acceptance Letter. These provisions were based on information presented in the Pure Water Monterey Final Title 22 Engineering Report and appendices. Two substantive comment letters were received during the initial public comment period from MCWD and Monterey One Water. Comments from MCWD focused on clarifying its role and responsibilities in the Project, including conveyance system ownership, storage rights, future water use allocations, disinfection byproduct sampling locations, and joint permitting structure. Monterey One Water expressed support for adoption of the proposed Order and provided comments related to pH compliance locations, injection well limits, and monitoring requirements. Staff incorporated revisions to the permit and attachments consistent with DDW's updated Conditional Acceptance Letter, including revised volumetric injection limits for two injection wells and clarification of pH compliance monitoring at the injection wells.

On August 21, 2025, Monterey One Water submitted a letter to DDW providing additional information regarding volumetric injection limits for the deep injection wells. Monterey One Water's letter clarified the operational scenarios described in the Title 22 Engineering Report and appendices and substantiated modifications to the volumetric injection limits applied at the individual wells. Based on this clarification, DDW issued an updated Conditional Acceptance Letter on August 28, 2025, revising volumetric injection limits for two of the deep injection wells to reflect well operational injection capacity. Following DDW's updated letter, a second public comment period was conducted from September 3, 2025, through September 12, 2025. During the second public comment

period, the Central Coast Water Board received one comment letter from Monterey One Water. In its letter, Monterey One Water expressed support for adoption of the Draft Waste Discharge and Water Reclamation Requirements Order R3-2025-0008, acknowledged and appreciated the revisions incorporated into the Draft Order, noted that several of MCWD's comments are outside of the Central Coast Water Board's regulatory oversight, and indicated that it continues to collaborate with MCWD staff on matters related to interagency agreements.

Full text of the comments received, staff's responses, and edits made to the proposed Order in response to comments are provided in Attachment 2. Staff also made non-substantive edits where appropriate to improve clarity or correct typographical errors.

RECOMMENDATION

Central Coast Water Board staff recommends the adoption of proposed Order R3-2025-0008 as contained in Attachment 1.

CONCLUSION

The expanded Pure Water Monterey Groundwater Replenishment Project complies with applicable state regulations and policies, including the State Water Board's Recycled Water Policy, Title 22 water recycling criteria, and the Antidegradation Policy (Resolution 68-16). The expansion increases the Project's capacity to produce and inject advanced treated recycled water while maintaining protection of public health, water quality and beneficial uses in the Seaside Basin. Updated groundwater modeling confirms sufficient assimilative capacity, appropriate response retention times, and continued compliance with pathogen removal requirements. Staff recommend adoption of the proposed Order R3-2025-0008, Waste Discharge Requirements and Water Recycling Requirements to authorize the Project expansion and continued operation.

ATTACHMENTS

Attachment 1. Proposed Order R3-2025-0008
Attachment 2. Response to Comments