

ATTACHMENT 1

MRWPCA Responses to August 22, 2016 Public Hearing Comments

Responses Related to Pure Water Monterey Groundwater
Replenishment Project Engineering Report

MRWPCA Responses to August 22, 2016 Public Hearing Comments
 Topics Related to Pure Water Monterey Groundwater Replenishment Project Engineering Report

<p>Topics #1, #2: - Some of the source waters (Blanco Drain, Salinas Reclamation Canal) are on the 303(d) list for impaired waterbodies. Has MRWPCA tested the Blanco Drain and Salinas Reclamation Canal (Ditch) source waters? Has MRWPCA tested the Regional Treatment Plant (RTP) influent that contains the Blanco Drain and Salinas Reclamation Canal source waters (Topic #1)? How can we be reassured that these toxic substances are not ending up in our drinking water, in the Seaside Aquifer, or in the Monterey Bay (Topic #2)?</p>	<p>Letter A</p>
<p><i>MRWPCA Response:</i></p> <p>The extensive source water sampling campaign conducted for this project demonstrated that the Blanco Drain and Reclamation Ditch source waters are safe source waters. All constituents were either below their maximum contaminant levels (MCLs), notification levels (NLs), archived advisory levels (AALs), lower than predicted no effect concentrations (PNECs), lower than the RTP secondary effluent, or were detected at levels that will be reduced to safe levels through blending and treatment through the RTP and Advanced Water Treatment (AWT) Facility.</p> <p>The Blanco Drain, as well as the RTP secondary effluent and the Salinas Industrial Wastewater Treatment Facility (IWTF) influent, were sampled through an extensive source water quality sampling campaign that included measurement of constituents with MCLs, NLs, AALs, pathogens and pathogen indicators, the non-microbiological unregulated monitoring contaminant rules (UCMR) lists 1 through 3, priority pollutants, pesticides of local interest, contaminants of emerging concern (CECs), and general water quality parameters. Quarterly and monthly sampling was conducted over the course of one year (July 2013 to June 2014). The Tembladero Slough and Lake El Estero were also sampled once for the same list of constituents.</p> <p>The Reclamation Ditch was not sampled in the source water sampling campaign. However, the Tembladero Slough, which joins the Reclamation Ditch just southeast of Castroville and is the downstream name of the Reclamation Ditch, was sampled. The Tembladero Slough, after the proposed Reclamation Ditch diversion point, receives primarily agricultural drainage, and thus, represents a conservative water quality surrogate for the Reclamation Ditch water quality. Because the Reclamation Ditch receives significant flows from the City of Salinas and natural runoff (whereas the Blanco Drain receives only agricultural drainage water), Blanco Drain also represents a conservative water quality surrogate for the Reclamation Ditch water quality.</p> <p>In addition to the source water sampling, pilot testing was conducted on the RTP effluent for a period of six months, which included flow from the Salinas IWTF for three months. Pilot testing included ozonation, membrane filtration and reverse osmosis (RO). Water quality samples were collected on the feed water, between each treatment process, and on the RO permeate. Pilot water quality sampling results indicated that the AWT Facility product water is expected to meet all applicable regulations, including with the addition of the Blanco Drain and the Reclamation Ditch source waters.</p>	
<p>Engineering Report Location: The water quality of the source waters is discussed in Section 4.2.2; the AWT Facility product water quality is discussed in Section 7; and summaries of the source water and pilot water quality are provided in Appendices F and C, respectively.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

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<p>Topic #3 – What are the water quality standards that apply to water produced by the Pure Water Monterey Project?</p>	<p>Letter B</p>
<p><i>MRWPCA Response:</i> The finished water produced by the AWT Facility must meet all State of California and Federal drinking water standards, and all State of California treatment requirements for Groundwater Replenishment Reuse Projects (GRRPs). These drinking water standards, listed in Title 22 of the California Code of Regulations (CCR), define MCLs for inorganic chemicals, organic chemicals, and radioactivity. The recycled water regulations for GRRPs are listed in Title 22 of the CCR (Chapter 3, Water Recycling Criteria). The recycled water regulations require that AWT Facility product water samples be collected and analyzed for contaminants having MCLs or Notification Levels (NLs), and state that the product water cannot exceed an MCL. The recycled water regulations also require specific reverse osmosis (RO) permeate total organic carbon (TOC) levels, on-going monitoring of pathogenic microorganism control, and on-going monitoring of advanced oxidation process (AOP) surrogate(s). The State Water Resources Control Board Water Recycling Policy requires monitoring of CEC performance and health-based indicators and a surrogate. Additionally, the product water must meet the water quality objectives listed in the Water Quality Control Plan for the Central Coast Basin.</p>	
<p>Engineering Report Location: The treatment requirements are discussed in Sections 2.1.1 and 2.2.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

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<p>Topic #4 – What actions will be undertaken by MRWPCA if the water produced by the Pure Water Monterey Project does not meet water quality standards?</p>	<p>Letter B</p>
<p><i>MRWPCA Response:</i> Prior to operation of the AWT Facility, MRWPCA will develop an Operational Optimization Plan (OOP) which will detail alarms, setpoints, continuous monitoring systems, and other operating conditions and procedures for ensuring a water protective of public health is produced. Should the numerous continuous monitoring programs identify a water quality problem, the AWT Facility can be immediately shut-down, with product water being re-routed as necessary. As an additional backup to these fail-safe measures, an additional response plan has been developed to provide for a safe interim drinking water supply. Please see responses to Topics #10, #11, and #21 for detailed information regarding the plan for a safe interim drinking water supply (Plan).</p>	
<p>Engineering Report Location: The Plan for procuring a safe interim drinking water supply is described in Section 6.1.4.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

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<p>Topic #5 – The Engineering Report indicates Blanco Drain water exceeds water quality standards for diazinon, nitrate, and ammonia. What is the public health impact of using Blanco Drain water?</p>	<p>Letter C</p>
<p><i>MRWPCA Response:</i></p> <p>Please refer to the response to Topic #1 for a discussion on the safety of Blanco Drain source water. Blanco Drain does not exceed water quality standards for ammonia and diazinon. The nitrate concentrations will be reduced to levels below the water quality standard through blending and treatment at the RTP and AWT Facility.</p> <p>Ammonia concentrations measured during the source water sampling campaign were less than 0.5 mg/L as N (), which is below the Environmental Protection Agency (EPA) health advisory level of 30 mg/L. Diazinon concentrations were less than 0.1 µg/L in all eleven source water samples, which is below the NL of 1.2 µg/L.</p> <p>Blanco Drain water, and the other source waters, will be diverted into the collection system or into the headworks of the RTP, which will allow for blending of these waters with the municipal wastewater prior to primary and secondary treatment through the RTP. With source waters included, RTP effluent total nitrogen is expected to increase by 12%, which would result in a maximum total nitrogen concentration of approximately 56 mg/L as N.</p> <p>Effluent from the RTP will be directed to the AWT Facility for further treatment by ozonation, membrane filtration, reverse osmosis, and advanced oxidation. Total nitrogen removal during AWT pilot-testing was 94.3% on average (which included ozonation, membrane filtration and reverse osmosis, but not advanced oxidation). Based on this removal, the total nitrogen concentration would be reduced from 56 mg/L to 3.2 mg/L as N (additional total nitrogen removal occurs through the RTP, typically ranging from 21 to 43%). This conservative maximum predicted result is below the 10 mg/L total nitrogen limit in the CCR Title 22 groundwater replenishment regulations and the 10 mg/L primary MCL for nitrate. As a result, it is expected that treatment at the RTP and the AWT Facility will produce water below the human health water quality standards for nitrogen compounds.</p>	
<p>Engineering Report Location:</p> <p>The source water quality monitoring program is discussed in Section 4.2.2. The results are presented in Appendix E. Total nitrogen concentrations in source waters and expected removals are discussed in Section 7.1. Constituents with Notification Levels in AWT Facility recycled water are discussed in Section 7.5.2.</p>	<p>Engineering Report Revision?</p> <p>No revisions are needed.</p>

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<p>Topic #6 – What approvals/permits are needed for using Blanco Drain water for the Pure Water Monterey Project?</p>	<p>Letter C</p>
<p><i>MRWPCA Response:</i> Use of Blanco Drain source water is regulated by the Central Coast Regional Water Board through provisions specified in permits issued to MRWPCA and the Monterey County Water Resources Agency (i.e., NPDES permit, CSIP Agricultural Irrigation Water Recycling Requirements, and the proposed Pure Water Monterey Project Water Recycling Requirements). The permits require implementation of a Source Control Program to protect treatment plant equipment, ensure design performance, and maintain compliance with effluent limitations. The Source Control Program involves periodic inspections, monitoring, inventory of sources/contaminants, source investigations, and compliance with local limits specified in Section 2.10.1 of the Wastewater Discharge Ordinance (MRWPCA Ordinance No. 2008-01). The Blanco Drain will be integrated into the MRWPCA Source Control Program and water quality will be analyzed periodically to further identify contaminant levels, assess trends in water quality, and evaluate compliance with local limits.</p>	
<p>Engineering Report Location: The Source Control Program is described in Section 4.0.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

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<p>Topic #7 – The proposed Response Retention Time (RRT) is overly optimistic. MRWPCA should re-examine the issues and revise the RRT to reflect more realistic timelines.</p>	<p>Letter D</p>
<p><i>MRWPCA Response:</i> The proposed RRT for the Pure Monterey Project (5.25 months) is more conservative than plans approved for other groundwater replenishment projects. For example, the Alamosa Barrier Recycled Water Project (5 months), Dominguez Gap Barrier Recycled Water Project (5 months), the Orange County Water District Groundwater Replenishment System (3 months), and Montebello Forebay Groundwater Recharge Project (3.75 months) have shorter RRTs.</p>	
<p>Engineering Report Location: The Response Retention Time is described in Section 6. The components are summarized in Table 6-5.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

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<p>Topic #8 – The time identified for MRWPCA to work with the Regional Water Board and Division of Drinking Water to assess sample results and make decisions on appropriate responses is too short.</p>	<p>Letter D</p>
<p><i>MRWPCA Response:</i> The 1-week timeframe is intended to mean the time necessary after all data are available from the confirmation sampling. The Division of Drinking Water and Regional Water Board will actually be involved from the onset of implementing the RRT plan and throughout its duration. As a comparison, timing for sampling/analyses and regulatory consultation for the Alamitos Barrier Recycled Water Project (4 to 6 weeks) and Orange County Water District Groundwater Replenishment System (1.3 weeks) is less than the 11.3 weeks provided for the Pure Water Monterey Project RRT.</p>	
<p>Engineering Report Location: The RRT is described in Section 6. The time to assess sample results and make decisions is discussed in Section 6.1.3.</p>	<p>Engineering Report Revision? Yes, Section 6.1.1 and 6.1.3.</p>

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<p>Topic #9 – The time identified for MRWPCA to collaborate and coordinate with regulatory agencies and stakeholders to suspend operations and provide relief measures is too short.</p>	<p>Letter D</p>
<p><i>MRWPCA Response:</i></p> <p>The 1-week time period discussed in Section 6.1.4 is considered sufficient and refers only to the timeframe for regulatory/stakeholder notification and regulatory approval in implementing initial steps of the Plan. This short response time commits MRWPCA to address any water quality problem immediately. Regulatory approval of the Engineering Report and the Plan commits the regulators to work proactively with MRWPCA in Plan implementation. By comparison, the timeframe allotted to relief measures for this project is conservative. For example, both the Alamitos Barrier Recycled Water Project and Orange County Water District Groundwater Replenishment System Project allot only 1 to 2 days.</p> <p>As documented in Section 6.1.4 of the Engineering report, MRWPCA has prepared an eight-step action plan for procuring a safe interim drinking water supply (“Plan”) in the unlikely event that a water quality problem bypasses the multiple fail-safe measures associated with the AWT and injection facilities. The eight steps of the Plan provide a systematic and comprehensive approach for addressing a water quality issue in the Seaside Basin on both a short-term and long-term basis. Portions of the Plan text in Section 6.1.4 of the Engineering report have been revised to clarify the notification process and initial steps for coordinating with well owners, Project Partners, stakeholders, and regulators.</p> <p>Please see responses to Topics #10, #11, and #21 for more information regarding the Plan.</p>	
<p>Engineering Report Location: The Plan for procuring a safe interim drinking water supply is described in Section 6.1.4.</p>	<p>Engineering Report Revision? Yes, Section 6.1.4</p>

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<p>Topic #10 – Providing bottled water to the public in the event of groundwater quality problems is not a realistic or viable response action.</p>	<p>Letter D</p>
<p><i>MRWPCA Response:</i></p> <p>The provision of bottled water is one action in a multi-faceted plan for procuring a safe interim drinking water supply (Plan). The Plan includes eight steps to ensure aggressive action by MRWPCA if a water quality problem develops despite the numerous fail-safe measures already incorporated into the AWT Facility. In addition, once the problem is identified the AWT Facility would be shut down until the issue could be remedied.</p> <p>MRWPCA included the bottled water option in the last step of the Plan to demonstrate its commitment to a comprehensive response Plan that considers all possibilities to provide a backup water supply. This option is not presented as a stand-alone permanent measure, but rather as one potential option among many to consider in addressing a localized issue on a short-term or emergency basis. As presented in the Plan, long-term potential actions associated with Step 8 (a combination of installing additional wells, securing bottled water, and/or replacing water supply in some other manner) would only be considered after sampling, containment, blending, treatment, and use of alternative production wells have all been considered and/or implemented. The multiple steps in this Plan, including the obligation to supplement water supply with bottled water, demonstrates MRWPCA’s commitment to ensuring a long-term safe drinking water supply from the Project.</p> <p>For context, the Plan is developed as a back-up to many of the water quality measures already incorporated into the Project. The AWT Facility is being designed to standards developed by the Division of Drinking Water based on experience with GRRPs over the last 50 plus years. In its design of the AWT Facility, MRWPCA is going above and beyond the already conservative requirements for indirect potable reuse GRRPs by also including ozonation in addition to reverse osmosis, advanced oxidation, and membrane filtration. In addition, the Division of Drinking Water’s recycled water regulations require an Operational Optimization Plan (OOP) be developed prior to operation, which will detail alarms, setpoints, and other operating conditions and procedures for ensuring a water protective of public health is produced. Should the numerous continuous monitoring programs identify a water quality problem, the AWT Facility can be immediately shut-down, with product water being re-routed as necessary.</p> <p>Please see responses to Topics #9, #11, and #21 for more information regarding the Plan.</p>	
<p>Engineering Report Location: The Plan for procuring a safe interim drinking water supply is described in Section 6.1.4.</p>	<p>Engineering Report Revision? Yes, Section 6.1.4.</p>

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<p>Topic #11 – Asking well owners to discontinue use of their wells in the event of groundwater quality problems is not viable in situations where there is no other source of water available.</p>	<p>Letter D</p>
<p><i>MRWPCA Response:</i> This comment was also submitted by the City of Seaside in Letter H. See response to Topic #21, which provides more specific information regarding actions to ensure a safe continued drinking water supply to the City of Seaside.</p>	
<p>Engineering Report Location: The Plan for procuring a Safe Interim drinking water supply is described in Section 6.1.4.</p>	<p>Engineering Report Revision? Yes, Section 6.1.4.</p>

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<p>Topic #12 – What pesticides have been analyzed in Blanco Drain water?</p>	<p>Letter E</p>
<p><i>MRWPCA Response:</i> Blanco Drain water was tested for all pesticides that (a) have a State of California primary MCL, (b) have a State of California NL, (c) have a State of California AAL, (d) are on EPA’s priority pollutant list, (e) are on the EPA’s Unregulated Contaminant Monitoring Rule List 1, 2, or 3, (f) were measured by Eurofins Eaton Analytical’s CEC Liquid Chromatography tandem mass spectrometry method, as well as (g) are of local interest based on agricultural activity and have an appropriate analytical method.</p>	
<p>Engineering Report Location: The water quality constituents sampled as part of the source water monitoring program are discussed in Section 4.2.2 and Section 7. The water-quality sampling results for Blanco Drain, as well as the other sampled source waters, are summarized in Appendix E.</p>	<p>Engineering Report Revision? Yes, Section 7 intro.</p>

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<p>Topic #13 – What type of treatment will be utilized by the Pure Water Monterey Project to remove pesticides?</p>	<p>Letter E</p>
<p><i>MRWPCA Response:</i> Pesticides will be removed through the following treatment processes in the RTP and the AWT Facility: (a) adsorption onto particulate matter and subsequent settling through primary and secondary treatment at the RTP, (b) oxidation through ozonation, (c) adsorption onto particulate matter and subsequent filtration through the membrane filtration process, (d) rejection through the reverse osmosis membranes, and (e) photolysis and oxidation through the ultraviolet light advanced oxidation process (UV/AOP). The degree of removal through each individual treatment process depends on the physical and chemical properties of each pesticide. Pilot testing showed that the AWT Facility’s treatment train was able to remove all pesticides from RTP secondary effluent to levels below their applicable regulatory limit, even without the UV/AOP system which was not pilot tested.</p> <p>Bench tests were conducted specifically to evaluate DDx (DDT and breakdown degradates DDE and DDD) and dieldrin removal through individual segments of the process train, using special low detection analytical methods. Through the RTP alone, 84% dieldrin removal and 93% DDx removal was measured. An additional 63% dieldrin removal and 48% DDx removal was observed through ozonation, and an additional 98% dieldrin removal and 94% DDx removal was observed through membrane filtration (MF). Overall, between the RTP influent and the MF filtrate, up to 99.9% dieldrin removal and 99.8% DDx removal was observed. Removal through the RO system or UV/AOP system was not bench tested.</p>	
<p>Engineering Report Location: Pilot test results are discussed in Section 7 and Appendix C. The bench test report was added to the Engineering Report as Appendix K.</p>	<p>Engineering Report Revision? Yes, Section 7 intro and Section 7.5.4. Appendix K was added.</p>

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<p>Topic #14 – The Engineering Report (Table 9-6) shows high levels of lead and arsenic, some above the California Primary MCL. The high levels are blamed on excessive turbidity during laboratory analysis and a proposed solution is to alter lab test procedures to reduce the effects of turbidity.</p>	<p>Letter F</p>
<p><i>MRWPCA Response:</i></p> <p>The comment appears to confuse the source of the data in Table 9-6 with the Project’s product water or source waters. The source of the data in Table 9-6 is from ambient groundwater samples taken from existing monitoring wells in the Seaside Basin, not the Project’s source waters or the Project’s piloted product water.</p> <p>Concentrations in Table 9-6 are not considered representative of actual concentrations of constituents dissolved in groundwater due to elevated turbidity in the samples and the construction and age of the monitoring wells from which they were collected (for example, FO-7 well in Table 9-6 is a small-diameter well that has only been sampled twice in 20 years). The correlation of elevated turbidity with small-diameter wells that have not (or cannot) be fully developed is well-recognized by the scientific and regulatory community. Similarly, the process by which elevated turbidity in groundwater samples interferes with laboratory analytical testing is well-recognized by the scientific and regulatory community. Elevated turbidity values serve as a “red flag” that some laboratory-reported concentrations may not represent dissolved concentrations in that sample, and should be confirmed with re-sampling. As demonstrated by decades of water quality analyses in basin production wells, turbidity and metals concentrations in Seaside Basin groundwater have been shown to be lower than those recorded from the monitoring wells in Table 9-6.</p> <p>The Project’s analysis of ambient groundwater quality identified elevated metals concentrations only in the two small-diameter monitoring wells (FO-7 and MW-1), which were sampled for the first time in 2014 to supplement existing groundwater data from the Seaside Basin. Data from six monitoring and production wells were included in the sampling program and these two small-diameter monitoring wells were the only samples with elevated metals concentrations; they were also the only wells with significantly elevated turbidity. All other data confirmed that metals were not elevated in ambient groundwater. In general, groundwater samples from other basin wells are routinely tested and found to meet drinking water standards including metals concentrations.</p> <p>Finally, to make sure that groundwater near these two monitoring wells did not contain elevated dissolved metals, the wells were re-sampled with regulatory-approved laboratory filtering techniques in 2016. As expected, the metals concentrations in this second round of groundwater sampling met drinking water standards. Prior to Project implementation, a series of new monitoring wells will be installed, sampled, and analyzed for all drinking water standards multiple times to further confirm local groundwater quality in the Injection Facilities area prior to any injection of Project water.</p>	
<p>Engineering Report Location: Table 9-6</p>	<p>Engineering Report Revision? No revisions are needed.</p>

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<p>Topic #15 – What criteria and information are being used to assess levels of Constituents of Emerging Concern (CECs) and impacts to human health in the final product water?</p>	<p>Letter G</p>
<p><i>MRWPCA Response:</i> MRWPCA will conduct CEC monitoring and assessments according to recommendations of the State Water Resources Control Board Science Advisory Panel on Chemicals of Emerging Concern in Recycled Water.¹ The Science Advisory Panel developed strategies for monitoring CECs in recycled water and evaluating the monitoring results for groundwater recharge projects. Performance-based and health-based indicators, possible surrogates, monitoring locations, monitoring frequencies, treatment performance evaluations, and action levels were adopted as Attachment A to the Statewide Recycled Water Policy on January 22, 2013.² These provisions will be incorporated into the Water Recycling Requirements for the Pure Water Monterey Project that will be adopted by the Central Coast Regional Water Board.</p>	
<p>Engineering Report Location: The CEC monitoring and reporting program is described in Section 12.6.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

¹ “Final Report, Monitoring Strategies for Chemical of Emerging Concern (CECs) in Recycled Water – Recommendations of a Science Advisory Panel Convened by the State Water Resource Control Board,” June 25, 2010.

² State Water Resources Control Board Resolution No. 2013-0003, Adoption of an Amendment to the Policy for Water Quality Control for Recycled Water Concerning Monitoring requirements for Constituents of Emerging Concern.

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<p>Topic #16 – The effects of CECs on human health cannot be characterized by concentration standards. Bioassays are the appropriate means to assessing CEC effects. Will bioassays be utilized as part of the Pure Water Monterey Project?</p>	<p>Letter G</p>
<p><i>MRWPCA Response:</i> The State Water Resources Control Board is investigating the use of bioassays to identify and assess impacts of CECs in recycled water. The Southern California Coastal Water Research Project (under contract to the State Water Resources Control Board) convened a Bioanalytical Investigative Team to conduct a preliminary review of analytical techniques. The team released a report in 2014³ that recognized bioassays as a screening level monitoring tool for recycled water and recommended next stage evaluations. Current efforts include testing appropriate technologies and developing quality control procedures. Until bioassay techniques are developed that can provide meaningful information for recycled water evaluations and management, chemical analyses are the only available options for CEC monitoring.</p>	
<p>Engineering Report Location: The CEC monitoring and reporting program is described in Section 12.6.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

³ *Development of Bioanalytical Techniques for Monitoring of Constituents/Chemicals of Emerging Concern (CECs) in Recycled Water Applications for the State of California,* Final report prepared by the Southern California Coastal Water Research Project, June 1, 2014.

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<p>Topic #17 – What concentrations of DDT and dieldrin will remain in the final product water?</p>	<p>Letter G</p>
<p><i>MRWPCA Response:</i> The product water dieldrin and DDx (DDT, DDE, and DDD) concentrations are expected to be less than 0.00005 and 0.0003 ng/L, which is approximately 4,000,000 times less than the World Health Organization DDT drinking water guidance value of 1,000 ng/L. Observed dieldrin and DDx concentrations in the RTP effluent and the Blanco Drain are summarized in a bench testing report which has been added as Appendix K to the Engineering Report. This report details dieldrin and DDx removals observed through the RTP and through bench-scale ozone and membrane filtration testing of RTP-Blanco Drain blends. Through the RTP alone, 84% dieldrin removal and 93% DDx removal was measured. Overall, between the RTP influent and the MF filtrate, up to 99.9% dieldrin removal and 99.8% DDx removal was observed. Additional removals of greater than 99% and 70 to 80% are expected through RO and UV/AOP, respectively (removal through the RO system or UV/AOP system was not bench tested).</p>	
<p>Engineering Report Location: A summary table of source water quality is provided in Appendix E. The bench test report was added to the Engineering Report as Appendix K.</p>	<p>Engineering Report Revision? Yes, Section 7 intro and Section 7.5.4. Appendix K was added.</p>

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<p>Topics #18, #19, #20: Has it been demonstrated there isn't an aquitard or aquiclude between the vadose zone and the Santa Margarita aquifer (Topic #18)? How will the wells installed in the Santa Margarita formation benefit from water injected into the vadose zone (Topic #19)? What is the estimated transient time to the Santa Margarita aquifer for water injected into the vadose zone (Topic #20)?</p>	<p>Letter H</p>
<p><i>MRWPCA Response:</i> Vadose zone wells will be used to recharge the Paso Robles Aquifer only; the Santa Margarita will be recharged with deep injection wells. The two aquifers are being recharged separately due to limited hydraulic connectivity. Hydrogeologic data suggests only minor vertical connectivity between the two aquifers in the vicinity of existing production wells. For recovery, the Project is allocating an injection volume into each aquifer commensurate with the ability of existing production wells to extract from each aquifer. For example, approximately 10 percent of groundwater produced in downgradient wells is from the Paso Robles Aquifer; this occurs in existing CalAm wells screened either in the Paso Robles Aquifer only or in both aquifers. Accordingly, the Project will recharge approximately 10 percent of the product water into the Paso Robles Aquifer to be extracted from these Paso Robles wells. Based on the best available information on the aquifers, we assume that water injected into the vadose zone wells will not recharge the Santa Margarita Aquifer. Nonetheless, the existing Santa Margarita wells would be capable of recovering any small amount of downward migration that may occur in the aquifer system.</p>	
<p>Engineering Report Location: Injection well operation is described in Section 8.4.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

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<p>Topic #21 – How will City of Seaside (City) consumers be supplied water if the groundwater replenishment project forces shutdown of a City well?</p>	<p>Letter H</p>
<p><i>MRWPCA Response:</i></p> <p>The AWT Facility is being designed to standards developed by the California Division of Drinking Water based on experience with GRRPs over the last 50 plus years. In its design of the AWT Facility, MRWPCA is going above and beyond the already conservative requirements for indirect potable reuse GRRPs by also including ozonation in addition to reverse osmosis, advanced oxidation, and membrane filtration. In addition, the Division of Drinking Water’s recycled water regulations require an Operational Optimization Plan (OOP) be developed prior to operation, which details alarms, setpoints, continuous monitoring programs, and other operating conditions and procedures for ensuring a water protective of public health is produced. In addition, the AWT Facility operators will have the ability to re-route the product water away from the injection wellfield at several locations, if necessary.</p> <p>Notwithstanding safety features at the AWT Facility, regulations also require a rigorous backup plan to ensure that drinking water supply is protected from any water quality issue that may arise. Therefore, an additional response plan for procuring a safe interim drinking water supply has been prepared that builds on the other multiple, fail-safe measures. This Plan is presented in Section 6.1.4 of the Engineering Report.</p> <p>The Plan includes eight steps to be taken by MRWPCA, in coordination with well owners, to protect drinking water wells. The Plan focuses on potential impacts to downgradient wells with the fastest travel times from the injection wells (i.e., ASR-1 and ASR-2). However, the Plan also notes that these steps will be taken for any downgradient well that could be impacted by a water quality problem. Although the City of Seaside Well No. 4 was not mentioned directly, that well would also be subject to all actions in the Plan including notification, confirmation sampling, and possible suspension of the well, if necessary.</p> <p>If the City’s well production is impacted, various steps are included in the Plan for provision of drinking water. In particular, step number 6 provides assistance for shifting production from any impacted well to other existing wells. This step includes the potential use of an intertie between the City of Seaside water system and the CalAm water system. This intertie, located near the intersection of LaSalle Avenue and Lincoln Street in Seaside, could be used by the City to access the CalAm water system and un-impacted wells, if needed. MRWPCA has discussed this matter with CalAm and determined that this is a feasible option. The intertie has been used in the recent past when the City needed to take wells offline for maintenance.</p> <p>The Engineering Report is being revised to specifically include the City of Seaside wells and information regarding the intertie in the Plan. The coordination required between MRWPCA, MPWMD, CalAm, and the City is also acknowledged in the revised text. See also the response to Topics #9, #10 and #11.</p>	
<p>Engineering Report Location: The Plan for procuring a safe interim drinking water supply is described in Section 6.1.4.</p>	<p>Engineering Report Revision? Yes, Section 6.1.4</p>

MRWPCA Responses to August 22, 2016 Public Hearing Comments
 Topics Related to Pure Water Monterey Groundwater Replenishment Project Engineering Report

<p>Topic #22 - All product water that is delivered for groundwater recharge should go through denitrification.</p>	<p>Letter I</p>
<p><i>MRWPCA Response:</i> The recycled water produced by the Project will meet groundwater quality standards and drinking water quality standards for nitrogen compounds without denitrification. Project performance monitoring (as required by the groundwater replenishment regulations) will be incorporated into Water Recycling Requirements that will be adopted by the Central Coast Regional Water Board. Ambient groundwater concentrations of nitrate in the Project area (Northern Inland Subarea, Northern Coastal Subarea) generally meet Basin Plan objectives.⁴ Nitrate concentrations range from non-detect to 6 mg/L (as N). As documented in Section 7.0 of the Engineering Report, the total nitrogen concentration of the purified recycled water will meet Title 22 groundwater replenishment regulations (10 mg/L) and will be lower than average ambient concentrations in groundwater. As such, replenishment of the Seaside Basin using the Pure Water Monterey Project recycled water will not adversely impact nutrient loading in the basin and may provide benefits to local groundwater quality related to nitrogen.</p>	
<p>Engineering Report Location: Seaside Basin groundwater quality is discussed in Section 9.4. Groundwater data are presented in Appendix I.</p>	<p>Engineering Report Revision? No revisions are needed.</p>

⁴ "Seaside Groundwater Basin Salt and Nutrient Management Plan," prepared for the Monterey Peninsula Water Management District, June 2014.