



State Water Resources Control Board
Division of Drinking Water

November 7, 2016

John M. Robertson, Executive Officer
Regional Water Quality Control Board
Central Coast Region
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401-7906

Dear Mr. Robertson

Final Engineering Report for the Pure Water Monterey Groundwater Replenishment Project (2790002-706)

This letter transmits the State Water Resources Control Board, Division of Drinking Water (DDW) acceptance of the Final Engineering Report (Final Report) for the Pure Water Monterey Groundwater Replenishment Project (Project) dated 21 October 2016. Monterey Regional Water Pollution Control Agency (MRWPCA) held a public hearing on August 22, 2016. Fifteen attendees provided oral comments and 10 submitted comment cards during the hearing. An additional 8 comment letters were received by the close of public comment period. MRWPCA provided a summary of comment responses, a copy of comments received, and a revision to the Draft Final Engineering Report based on the public comments received.

DDW recommends the Central Coast Regional Water Quality Control Board (RWQCB) include the following conditions in the permit as 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 the Title 22, California Code of Regulations.
2. The Project's advanced water treatment facility (AWTF) shall conduct startup and commissioning testing that meets the requirement in §60320.201. Advanced Treatment Criteria. A test protocol must be submitted for approval prior to commencement of testing.
3. The Project AWTF shall be operated to meet the requirements in §60320.122. Operation Optimization and Plan.
4. Per §60320.122. Operation Optimization Plan, prior to operation, MRWPCA shall submit an Operation Optimization Plan for review and approval. 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.

5. AWTF 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 AWTF 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 AWTF.
11. MRWPCA shall verify that the recycled municipal wastewater used for the Project meets the requirements in §60320.106. Wastewater Source Control.
12. Per §60320.108 (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 §60320.108 (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 RWQCB 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 RWQCB 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.
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 RWQCB 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 AWTF. 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 AWTF.
- 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/cm², 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.
 - l. MRWPCA shall sample the monitoring wells as specified in the approved Operation Optimization Plan. MRWPCA shall take these samples monthly for the first year of operation. MRWPCA may request, from DDW, a reduction in this monitoring after the first year.

Future Submittals

16. MRWPCA shall submit the required annual and five-year reports per §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 addenda 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 tracer test and submit a completed tracer study to DDW.

If you have any questions regarding this letter, please contact Randy Barnard at (619) 525-4022 or via e-mail at Randy.Barnard@waterboards.ca.gov, or please contact Sherly Rosilela at (916) 341-5578 or via e-mail at Sherly.Rosilela@waterboards.ca.gov.

Sincerely,



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