

State of California
California Regional Water Quality Control Board
Santa Ana Region

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Order No. R8-2016-0051

Amending Order No. R8-2004-0002, as amended by Order No. R8-2008-0058 and
Order No. R8-2014-0054
Producer/User Water Recycling Requirements
For
Orange County Water District
Interim Water Factory 21 and Groundwater Replenishment System
Groundwater Recharge and Reuse at
Talbert Gap Seawater Intrusion Barrier and Kraemer/Miller Recharge Basins
Orange County

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter Regional Water Board), finds that:

1. On March 12, 2004, the Regional Water Board adopted Order No. R8-2004-0002, prescribing Producer/User Water Recycling Requirements for the Orange County Water District's (hereinafter OCWD or producer) Interim Water Factory 21 and Groundwater Replenishment System (GWRS) for groundwater recharge and reuse of recycled water at the Talbert Gap Seawater Intrusion Barrier and at Kraemer/Miller Recharge Basins in Orange County. On July 18, 2008, the Regional Water Board adopted Order No. R8-2008-0058, which amended Order No. R8-2004-0002 to modify findings and provisions regarding tracer studies and monitoring wells associated with GWRS. Also, on December 12, 2014, the Regional Water Board adopted Order No. R8-2014-0054, which amended Order No. R8-2004-0002 to add the Miraloma Basin as an approved site for spreading recycled water and authorized the production of up to 100 MGD of highly treated recycled water for groundwater replenishment purposes.
2. OCWD operated Interim Water Factory 21 until it was secured and demolished in 2006. OCWD began operations of GWRS in 2008 with a design capacity 70 million-gallons-per-day (MGD). OCWD started spreading recycled water, for groundwater recharge, in the newly constructed Miraloma Basin in July 2012. In May 2015 OCWD completed the construction of its initial expansion and added 30 MGD of treatment capacity to its advanced water purification facility (AWPF) and began operating at its expanded recycled water production capacity of 100 MGD. GWRS includes the AWPF, the Talbert Gap Seawater Intrusion Barrier and Kraemer/Miller/Miraloma Recharge Basins. The permitted design capacity of AWPF is 100 MGD. The AWPF currently produces a monthly average of 93 MGD of recycled water for direct aquifer injection and recharge at OCWD's spreading basins located at the Anaheim Forebay.

3. The Groundwater Replenishment Using Recycled Water regulations were adopted by the California Department of Public Health and became effective on June 18, 2014. As of July 1, 2014 the State Water Resources Control Board's Division of Drinking Water succeeded CDPH in the development and implementation of drinking water and recycled water related regulations.
4. In a report entitled, "Groundwater Replenishment System Title 22 Engineering Report Supplement," dated March 2014, OCWD proposed to begin the use of the new La Palma recharge basin located in the Anaheim Forebay and in the vicinity of the existing Kraemer/Miller/Miraloma Recharge Basins. Also, as required under the Groundwater Replenishment Using Recycled Water regulations, the report proposed a response retention time and modified Anaheim Forebay buffer areas for the Kraemer/Miller/Miraloma/La Palma Recharge Basins that would replace the 6-month retention time Anaheim Forebay buffer area associated with the operation of the Kraemer/Miller/Miraloma Recharge Basins. OCWD proposed a 3-month response retention time and a 3-month primary subsurface travel time buffer area where new drinking water wells cannot be constructed and a 4-month secondary subsurface travel time buffer area where the construction of new drinking water wells is controlled and requires the conduction of studies to assess the potential impact of the proposed well on the primary buffer area. The proposed modified buffer areas were derived by OCWD staff through a groundwater modeling analysis.
5. In a letter dated June 30, 2014, staff of the California Department of Public Health (CDPH) did not object to OCWD's use of the La Palma recharge basin for recycled water spreading operations. Also, CDPH staff accepted the proposed modified Anaheim Forebay buffer areas and 3-month response retention time for the Kraemer/Miller/Miraloma/La Palma Recharge Basins. Regional Water Board staff concurred with CDPH staff findings and issued a letter to OCWD, dated June 27, 2016, to document the decision. These proposed modified Anaheim Forebay buffer areas for the Kraemer/Miller/Miraloma/La Palma Recharge Basins was adopted by the OCWD Board of Directors as an official resolution in July 20, 2016. To prevent the construction of new drinking water wells within the 3-month primary subsurface travel time buffer area and control through study requirements the installation of new drinking water wells within the 4-month secondary subsurface travel time buffer area, the resolution was then transmitted to the local well permitting authorities: the Orange County Well Standards Advisory Board, the City of Anaheim and the Orange County Health Care Agency. It is appropriate to modify Order No. R8-2004-0002 to allow the producer to use the La Palma recharge basin for recycled water spreading operations and update the Anaheim Forebay buffer areas in accordance with the requirements included in the Groundwater Replenishment Using Recycled Water regulations.
6. In compliance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.), OCWD prepared an Environmental Impact Report (EIR) for the new La Palma recharge basin. The EIR was certified and approved

by the OCWD Board of Directors on March 18, 2015. The EIR identified no significant adverse impact to water quality as a result of the use of recycled water in the new basin. Regional Water Board staff reviewed the EIR and independently made a determination that the project would not have a significant adverse water quality impact.

7. The Board has notified the producer and other interested agencies and persons of its intent to amend the producer/user water recycling requirements set forth in Order No. R8-2004-0002 and has provided them with an opportunity to submit their written views and recommendations.
8. The Regional Board, in a public meeting, heard and considered all comments pertaining to this amendment to the water recycling requirements.

IT IS HEREBY ORDERED that Order No. R8-2004-0002 be amended as follows:

1. Order No. R8-2004-0002, Finding 12., page 5 - Add the following at the end of the finding:

In March 2014, OCWD submitted to the California Department of Public Health a Title 22 Engineering Report Supplement (Report Supplement) for GWRS, which included a proposal to use of the La Palma recharge basin for recycled water spreading operations. Also, the Report Supplement contained a proposal to replace the 6-month retention time Anaheim Forebay buffer area for the operations of the Kraemer/Miller/Miraloma Recharge Basins with a modified Anaheim Forebay buffer areas and a 3-month response retention time for the operation of the Kraemer/Miller/Miraloma/La Palma Recharge Basins. The proposed modified Anaheim Forebay buffer areas consisted of a 3-month primary buffer area and 4-month secondary buffer area.

2. Order No. R8-2004-0002, Finding 13., page 5 - Add the following at the end of the finding:

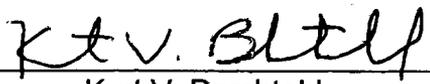
The California Department of Public Health adopted the Groundwater Replenishment using Recycled Water regulations, which became effective on June 18, 2014. As of July 1, 2014 the State Water Resources Control Board's (SWRCB's) Division of Drinking Water (DDW) became the successor of CDPH in regards to development and implementation of drinking water and recycled water related regulations. In a letter dated June 30, 2014, CDPH staff did not object to OCWD's use of the La Palma recharge basin for recycled water spreading operations. Also, CDPH staff accepted the proposed modified Anaheim Forebay buffer areas and the 3-month response retention time for the Kraemer/Miller/Miraloma/La Palma Recharge Basins outlined in the report. Regional Board staff concurred

with CDPH staff findings and issued a letter to OCWD, dated June 27, 2016, to document the decision.

3. Order No. R8-2004-0002, Finding 15., page 6 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma/La Palma*.
4. Order No. R8-2004-0002, Finding 25., page 8 - Replace Finding 25. as follows:
 25. *To assure that any pathogenic microorganisms that may be present in the recycled water are effectively inactivated or removed, the SWRCB's DDW has determined that a retention time in the Talbert Gap Barrier area of at least 12 months for the recycled water in the groundwater basin before the water is extracted for drinking purposes, and a minimum horizontal separation of 2,000 feet between the Talbert Gap Barrier injection wells and all drinking water wells, are needed. A retention time in the area of the Kraemer/Miller/Miraloma/La Palma Basins of at least 3 months between the Basins and any drinking water wells is needed.*
5. Order No. R8-2004-0002, page 9 - Replace Finding 30. as follows:
 30. It is important that new drinking water wells are constructed outside the primary buffer area required to achieve 3 months of retention time downgradient from the spreading operation at Kraemer/Miller/Miraloma/La Palma Basins for inactivation of microorganisms. Also, new drinking water wells proposed to be constructed at the leading edge of the secondary buffer area defined by the area less than 4 months underground travel time from Kraemer/Miller/Miraloma/La Palma Basins must be evaluated through pertinent studies to assess any potential impact that the proposed well might have on the primary buffer area. OCWD adopted a resolution that effectively prevents the use of groundwater for drinking water purposes within this SWRCB's DDW primary buffer area to avoid the construction of new domestic water wells within this area of spreading basins and control the construction of new domestic water wells that may be located at the leading edge of the secondary buffer area. The resolution will be invoked and in place prior to the start of recharge of recycled water from the GWRS. In addition, OCWD will request that the Orange County Well Standards Advisory Board establish criteria to prevent construction of drinking water wells in the primary buffer area or control the construction of drinking water wells at the leading edge of the secondary buffer area. This Board advises the permitting agencies, Orange County Health Care Agency and the City of Anaheim, on well permitting criteria and will recommend that the recycled water have a retention time of at least 3 months underground prior to withdrawal near Kraemer/Miller/Miraloma/La Palma Basins.
6. Order No. R8-2004-0002, Diluent Water Quality Specifications, Sections C.1. and C.2., page 17 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma/La Palma*.

7. Order No. R8-2004-0002, Buffer Zone Specifications in Recharged Groundwater Basins, page 19 - Replace Sections F.3. as follows:
 3. *At the Kraemer/Miller/Miraloma/La Palma Basins, the recycled water shall be retained in the groundwater basin for a minimum of 3 months prior to being withdrawn at a domestic water supply well. A numerical model, tracer, or other method shall be used to determine the underground retention time and recycled water contribution to each aquifer. If a tracer is used, the tracer shall be determined prior to start-up.*
8. Order No. R8-2004-0002, Buffer Zone Specifications in Recharged Groundwater Basins, page 19 – Replace Section F.4. as follows:
 4. *At the Kraemer/Miller/Miraloma/La Palma Basins, no domestic drinking water wells shall be allowed within a primary buffer zone defined by the area less than 3 months underground travel time from Kraemer/Miller/Miraloma/La Palma Basins and any new drinking water well proposed to be constructed at the leading edge of the secondary buffer zone defined by the area less than 4 months underground travel time from Kraemer/Miller/Miraloma/La Palma Basins shall be evaluated through pertinent studies to assess any potential impact that the proposed well might have on the primary buffer zone.*
9. Order No. R8-2004-0002, Provisions J.8., page 25 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma/La Palma*.
10. Monitoring and Reporting Program (M&RP) No. R8-2004-0002, Recycled Water Monitoring, Section I.C.5., page 7 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma/La Palma*.
11. M&RP No. R8-2004-0002, Reporting Requirements, Sections II.B.2.f. and II.B.4, page 12 - Replace *Kraemer/Miller* with *Kraemer/Miller/Miraloma/La Palma*.
12. All other conditions and requirements of Order No. R8-2004-0002, as amended by Order No. 2008-0058 and Order No. R8-2014-0054, shall remain unchanged.

I, Kurt V. Berchtold, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on July 29, 2016.



Kurt V. Berchtold
Executive Officer