

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2010-0040

AMENDING WASTE DISCHARGE REQUIREMENTS
ORDER NO. R5-2008-0059 (NPDES PERMIT NO. CA 0079103)

CITY OF MODESTO
WATER QUALITY CONTROL FACILITY
STANISLAUS COUNTY

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

1. On 25 April 2008, the Central Valley Water Board adopted Waste Discharge Requirements Order No. R5-2008-0059, prescribing waste discharge requirements for the City of Modesto, Water Quality Control Facility, Stanislaus County. For the purposes of this Order, the City of Modesto is hereafter referred to as "Discharger" and the Water Quality Control Facility is hereafter referred to as "Facility."
2. Order No. R5-2008-0059 allows up to 70 million gallons per day (mgd) seasonal (October-May) secondary-treated effluent discharge when a 20:1 river flow to effluent flow ratio is available and also allows 4.8 mgd year-round tertiary effluent discharge.
3. The Discharger owns and operates the Facility that consists of separate primary and secondary treatment plants. The primary treatment plant, located at 1221 Sutter Avenue in the City of Modesto, provides pumping, screening, grit removal, flow measurement, primary clarification, and sludge digestion. The clarified effluent from the primary treatment plant is then transported approximately 6.5 miles southwest to the secondary treatment plant. At the secondary treatment plant, located at 7007 Jennings Road in the City of Modesto, approximately half of the primary plant effluent is treated in fixed film reactors (FFRs). The remaining primary effluent is discharged to an aerated recirculation channel, where it is combined with the effluent from the FFR. Flow in the aerated recirculation channel is then distributed to three parallel facultative ponds for further treatment, and its effluent is transferred to one of two storage points until it can be discharged to the San Joaquin River, or land applied to the Discharger's 2,526 acre ranch. From 1 October to 31 May, disinfected secondary-level effluent may be discharged from Discharge Point 001 to the San Joaquin River, a water of the United States.
4. The Discharger has evaluated an advanced treatment process that would accommodate a year-round surface water discharge. The proposed advance treatment process is a biological nutrient removal (BNR) process followed by filtration and ultraviolet (UV) light disinfection. The Discharger proposed construction of the

BNR/tertiary-level treatment facilities in four phases. Phase 1A is for a year-round advanced-treatment 2.3 mgd discharge expansion to accommodate the current lack of dry water year disposal capacity and to meet the needs of growth through 2011. Phase 1A includes nitrification and denitrification proposed to remove 190,000 lbs of ammonia annually and is currently under construction. Phase 1B is a 2.5 mgd expansion to satisfy projected growth needs from 2011 to 2016. The 2.3 mgd Phase 1A and 2.5 mgd Phase 1B advanced-level treatment year-round discharge are allowed in Order No. R5-2008-0059. Phase 2 and Phase 3 include upgrades of the existing secondary effluent flows to a year-round full tertiary treatment process capable of discharging up to 20 mgd.

5. Order No. R5-2008-0059 includes final effluent limitations for ammonia that become effective 25 April 2013. The current Facility cannot comply with the final effluent limitations for ammonia. On 14 December 2008, the Discharger submitted a Corrective Action Plan/Implementation Schedule for ammonia as required by Order No. R5-2008-0059. The Corrective Action Plan proposed a treatment feasibility work plan to identify new treatment alternatives or additions to the existing treatment process, determine feasibility of alternatives, determine costs and benefits of feasible alternatives, and submit a treatment feasibility report.
6. On 1 September 2009, the Discharger submitted a request for an extension of the compliance schedule for ammonia with its annual progress report. The submittal included a draft treatment feasibility study that concludes the cost effective project is to construct the Discharger's Phase 2 Project, which is a Biological Nutrient Removal (BNR)/Tertiary Treatment facility that will shift the current seasonal secondary discharge of up to 70 mgd to a year-round 14.9 mgd discharge that is fully nitrified/denitrified and receives tertiary filtration and UV disinfection.
7. The Discharger has determined that the Phase 2 BNR/Tertiary Treatment Project (Phase 2 Project) is the cost effective project to comply with the final ammonia effluent limitations, while at the same time meet future City growth. Due to the complex and extensive design, construction, and financing of the Phase 2 Project, the Discharger anticipates that it will be unable to have the necessary facilities operational to meet final effluent limitations for ammonia by 25 April 2013. The Discharger is requesting this permit amendment to effectively plan, finance, and construct the Phase 2 Project under an achievable timeline. The Discharger is currently reviewing the 50% design submittal for the Phase 2 Project and is in contract negotiations with the manufacturers for the membrane bioreactor filtration and ultraviolet disinfection units regarding procurement of these treatment technologies. The Discharger plans to submit a Report of Waste Discharge for the proposed Phase 2 Project by 1 July 2010, and the proposed schedule for completion of construction is October 2015, with full compliance with ammonia effluent limitations by 1 February 2016.

8. At the time Order No. R5-2008-0059 was adopted it was anticipated that additional time may be required for compliance with the final ammonia effluent limits. Therefore, Order No. R5-2008-0059 included a reopener to extend the ammonia compliance period. Due to complexities in the design and construction, and local government economic conditions which will require financing through the State of California State Revolving Fund (SRF) Loan Program, the project cannot be completed by the compliance date of 25 April 2013. Therefore, this Order amends Order No. R5-2008-0059 by extending the final compliance date for the ammonia effluent limitations to 1 February 2016.
9. The Discharger's infeasibility analysis meets the requirements of the State Water Resources Control Board's Compliance Schedule Policy. The extension of the compliance date increases the compliance schedule for ammonia to a total of 7 years and 9 months, which is within the ten-year maximum time frame allowed by the Compliance Schedule Policy.
10. The action to adopt or amend an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code section 21000, et seq.), in accordance with CWC section 13389 and 15061(b)(3) of the California Code of Regulations.
11. The Central Valley Water Board has notified the Discharger and interested agencies and persons of its intent to amend the Time Schedule Order for this discharge and has provided them with an opportunity to submit their written views and recommendations.
12. Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with CWC section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday (including mandatory furlough days), 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 or will be provided upon request.

IT IS HEREBY ORDERED THAT:

Waste Discharge Requirements Order No. R5-2008-0059 (NPDES No. CA0079103) is amended solely to extend the compliance schedule for meeting the final water quality-based effluent limitations for ammonia. This amendment requires changes to Interim Effluent Limitations Section IV.A.3.d, Special Provisions Section VI.C.7.c. of the Limitations and

Discharge Specifications, Section V.A.6 and Section V.B.9 of the Monitoring and Reporting Program, and Section IV.C.3.f and Section VII.B.7.b of the Fact Sheet. Order No. R5-2008-0059 shall be amended as follows:

1. As a global change throughout the Order, the Order number is changed to R5-2008-0059-01.
2. Limitations and Discharge Requirements, Interim Effluent Limitations Section IV.A.3.d is amended as follows:
 - d. **Ammonia. Effective immediately**, and ending 31 January 2016 ~~five years from adoption of this permit~~, the Discharger shall maintain compliance with the ammonia maximum daily effluent limitations (MDEL) listed in Table 9. These interim effluent limitations shall apply in lieu of the corresponding final effluent limitations specified for the same parameters in Table 6 and Table 7.
3. Limitations and Discharge Requirements, Compliance Schedules VI.C.7.c.i is amended as follows:
 - i. By **18 May 2010**, the Discharger shall comply with the final effluent limitations for chlorodibromomethane and dichlorobromomethane; and **by 1 February 2016** ~~within 5 years from the effective date of this Order~~, the Discharger shall comply with the ammonia final effluent limitations. On 25 March 2008, the Discharger submitted a compliance schedule justification for ammonia, chlorodibromomethane, and dichlorobromomethane. On 1 September 2009, the Discharger submitted an updated compliance schedule justification for ammonia. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of section 2.1 of the SIP. The Regional Water Board may extend the ammonia compliance period pending the results of any reopener studies submitted as part of Section VI.C.1.g. of this Order. As this compliance schedule is greater than one year, the Discharger shall submit semi-annual progress reports in accordance with the Monitoring and Reporting Program (Attachment E, Section X.D.1.)
4. Attachment E – Monitoring and Reporting Program, Section V.A.6 is amended as follows:
 6. Ammonia Toxicity – The acute toxicity testing may be modified to eliminate ammonia-related toxicity until **31 January 2016** ~~1 April 2013~~, at which time the Discharger shall be required to implement the test without modifications to eliminate ammonia toxicity.
5. Attachment E – Monitoring and Reporting Program, Section V.B.9 is amended as follows:

9. *Ammonia Toxicity* – The chronic toxicity testing may be modified to eliminate ammonia-related toxicity until **31 January 2016-1 April 2008**, at which time the Discharger shall be required to implement the test without modifications to eliminate ammonia toxicity.

6. Attachment F – Fact Sheet, Section IV.C.3.f, the last paragraph is amended as follows:

An interim performance-based maximum daily limitation of 24 mg/L was calculated using the statistical methods for calculating interim effluent limitations described in Attachment F, Section IV.E.3. However, this performance-based effluent limitation is less stringent than the final “floating” maximum daily effluent limitation for ammonia from the previous Order. Therefore, the “floating” ammonia effluent limitation was established as the interim limitation in this Order, as described in Attachment F, Section IV.E.3., and is in effect until **1 February 2016**. ~~five years from the adoption date of this permit~~. As part of the compliance schedule, this Order requires the Discharger to submit a corrective action plan and implementation schedule to assure compliance with the final ammonia effluent limitations. In addition, the Discharger shall submit an engineering treatment feasibility study.

7. Section VII.B.7.b of the Fact Sheet is amended as follows:

- b. **Ammonia, Dichlorobromomethane, and Chlorodibromomethane.** The use and location of compliance schedules in the permit depends on the Discharger’s ability to comply and the source of the applied water quality criteria. On 25 March 2008, the Discharger submitted a request, and justification for compliance schedules for ammonia, dichlorobromomethane, and chlorodibromomethane. On 1 September 2009, the Discharger submitted an updated compliance schedule justification for ammonia. The compliance schedule justification included all items specified in Paragraph 3, items (a) through (d), of Section 2.1 of the SIP. This Order establishes a compliance schedule for the new, final, water quality-based effluent limitations for ammonia, dichlorobromomethane, and chlorodibromomethane. Full compliance is required no later than 18 May 2010 for dichlorobromomethane and chlorodibromomethane; and no later than ~~five years from the effective date of this permit~~ **1 February 2016** for ammonia. Based on influent data provided by the Discharger, it is evident that chlorodibromomethane and dichlorobromomethane are not present in the influent. These constituents are chlorinated byproducts and are likely formed in the chlorination process. Therefore, pollution prevention plans are not necessary and are not included as a requirement of the compliance schedules. Furthermore, ammonia is a normal constituent in municipal wastewater and pollution prevention measures are not effective. Therefore, a pollution prevention plan is not required for ammonia.

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I, PAMELA C. CREEDON, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on 18 March 2010.

Original Signed by Kenneth D. Landau
PAMELA C. CREEDON, Executive Officer